

**TECHNICAL REPORT AND REMEDIAL
INVESTIGATION WORKPLAN FOR
CHROMIUM**

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DECEMBER 7, 2001

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TECHNICAL REPORT AND REMEDIAL INVESTIGATION WORKPLAN FOR CHROMIUM

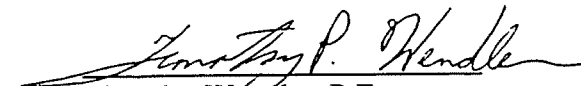
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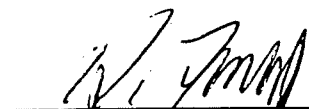
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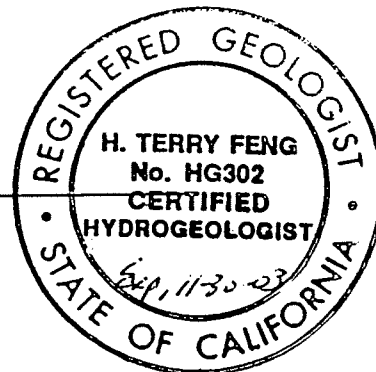
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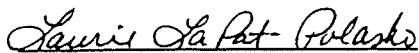

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1995 (Figure 1-2) and was developed into an asphalt-covered parking lot and a Home Depot store. In 1999, the Western Parcel was sold to Public Storage and developed into a storage facility with asphalt-covered service roads, concrete-covered storage bays, and a warehouse.

1.2 SITE REGULATORY HISTORY

In close coordination with the Regional Water Quality Control Board (RWQCB), Honeywell has conducted site investigation and remedial actions to mitigate chromium-impacted soil, as described in Section 2.2. As a result of these activities, the RWQCB granted soil closure for both the Eastern and Western Parcels in August 1997 (RWQCB, 1997a and 1997b). Groundwater monitoring for chromium was conducted at the request of the RWQCB after the soil closure was approved. In March 2001, at the request of the RWQCB, information regarding previous chromium use at the site was submitted (RWQCB, 2001a). In October 2001 the RWQCB requested that a technical report be prepared and submitted by November 9, 2001 (RWQCB, 2001b) and was subsequently extended to December 9, 2001 (RWQCB, 2001c) to demonstrate that the residual chromium in the soil does not pose a threat to groundwater quality and to determine the extent of chromium in the groundwater beneath the site. This report was prepared in response to the RWQCB's request.

SECTION 2

CHROMIUM IN SOIL

In order to determine whether chromium in soil poses a continued threat to groundwater quality, available site stratigraphy and previous chromium investigations were evaluated. This section describes total chromium and hexavalent chromium identified in soil beneath Plant 1 and Plant 2 during previous site investigation activities and remedial actions conducted to date for chromium in the site soil. Additional data needs to address chromium in soil are also identified through this evaluation.

2.1 GEOLOGY AND SOIL

The site is located in the San Fernando Valley Basin (Basin). The Basin is bounded on the north and northwest by the Santa Susanna Mountains; on the north and northeast by the San Gabriel Mountains; on the east by the San Rafael Hills, which separates it from the San Gabriel Basin; on the south by the Santa Monica Mountains, which separates it from Los Angeles Coastal Plains; and on the west by the Simi Hills.

The Basin is comprised of a large Holocene age alluvial basin of approximately 122,800 acres. The maximum depth of alluvium is about 1000 feet and the volume of stored groundwater is about three million acre-feet. The western part of the valley alluvium consists of mainly clayey sediments derived from the surrounding hills of Tertiary sedimentary rocks. The site is located in the eastern part of the valley, where sand and gravel aquifers were deposited by large streams originating from the basement rocks of the San Gabriel Mountains (GSA, 1986).

Soil encountered during various drilling activities at the site indicates that the lithology varies rapidly throughout the site. Generally the alluvial deposits within the northern portion of the western parcel (Public Storage) consist of sand and gravelly sand to a depth of approximately 50 feet below ground surface (bgs), gravel and sandy gravel to approximately 80 feet bgs, sand and gravelly sand to approximately 140 feet bgs, gravel to approximately 150 feet bgs, sand and gravelly sand to approximately 275 feet bgs (with a 10-foot gravel layer from 135 to 145 feet bgs), and gravel and sandy gravel to approximately 305 feet bgs. Within the southern portion of the western parcel (Public Storage), the alluvial deposits consist of sand and gravelly sand to a depth of approximately 10 feet bgs, gravel and sandy gravel to approximately 205 feet bgs, sand and gravelly sand to approximately 260 feet bgs, gravel, sand, and gravelly sand to approximately 305 feet bgs.

Generally the alluvial deposits within the northern portion of the eastern parcel (Home Depot) consist of sand and gravelly sand to a depth of approximately 65 feet bgs, gravel and sandy gravel to approximately 200 feet bgs, sand and gravelly sand to approximately 140 feet bgs, gravel to approximately 150 feet bgs (with a 5-foot gravelly sand layer from 140 to 145 feet bgs), followed by sand and gravelly sand to approximately 305 feet bgs. Within the southern portion of the eastern parcel (Home Depot), the alluvial deposits consist of sand and gravelly sand to a depth of approximately 50 feet bgs, gravel and sandy gravel to approximately 180 feet bgs (with a 5-foot gravelly sand layer from 105 to 110 feet bgs), sand and gravelly sand to approximately 240 feet bgs, gravel, gravelly sand and sand to approximately 305 feet bgs.

The alluvial deposits within the Kaiser property generally consist of sand and gravelly sand to a depth of approximately 305 feet bgs, with occasional thin layers of gravel and sandy gravel 70 and 140 feet bgs in the northern portion of the property.

Cross sections of the lithology of the site, based on boring logs from groundwater well installations, are presented in Figures 2-1 through 2-4. Boring logs from well installations and explanations of soil type symbols used in the cross-sections are included in Appendix A.

2.2 PREVIOUS INVESTIGATIONS/REMEDIAL ACTIONS

The site has been the subject of extensive subsurface investigations since the 1980s. A brief summary of investigations and remedial actions related to chromium in soil is presented below.

2.2.1 1993 GTI Soil Investigation

In July 1993, Groundwater Technology, Inc. (GTI) drilled fifty-two borings ranging in depth from 1 to 55 ft bgs, as part of a chromium investigation. Soil samples were analyzed for total chromium and selected samples were analyzed for hexavalent chromium (GTI, 1993). A table summarizing the analytical results from the GTI Investigation is presented in Appendix B. Figure 2-5 depicts the locations of the GTI borings that were analyzed for chromium. Based on the results of the investigation, GTI identified and characterized two areas as having chromium-impacted soil. Figure 2-6 shows a close-up of the Plant 1 area, located near the western edge of the site, with cross-sections. Figure 2-7 shows a close-up of the Plant 2 area, located near the eastern edge of the site, with cross-sections.

Total chromium was detected at concentrations ranging from less than 1.5 mg/kg to 1,700 mg/kg. The highest concentration was detected in SBP1-037 at 5-ft bgs, located in the Plant 1 area. Total chromium concentrations decreased with depth in the impacted area of Plant 1, and no soil samples were obtained beyond 55 feet bgs. Cross-sections within the Plant 1 area are presented in Figures 2-8 and 2-9. Cross-sections within the Plant 2 area show concentrations decreasing to below 10 mg/kg at a depth of 20-ft bgs (Figure 2-10 and 2-11).

spreading in an east-west band immediately south of the site, contains 29 extraction wells with an extraction capacity of 129 cubic feet per second (cfs), which amounts to approximately 20,000 acre-feet per year. Rinaldi-Toluca well field located northwest of the site has an extraction capacity of 30,000 acre-feet per year. The BOU extracts approximately 11,450 acre-feet per year (1999-2000 water year) to be used by the City of Burbank after remediation of VOCs (ULARA, 2001). Several extraction well fields also located in the east and southeast direction of the site. The significant fluctuation in the groundwater table beneath the site is mainly due to the variable rate of extraction in the aforementioned well fields.

Data generated in February 2001 indicate that the average elevation of the water table is approximately 475 feet above mean sea level (approximately 259 feet bgs to 267 feet bgs). A simulated groundwater contour map for the Fall 2005, prepared by the ULARA Watermaster, predicts an approximate water elevation of 465 feet above mean sea level for the site (an approximately 5 foot draw down compared with Fall 2000).

The aquifer beneath the site is fairly productive. Based on aquifer pumping tests conducted by ULARA Watermaster in several extraction wells located in the immediate vicinity of the site, the transmissivity of the upper aquifer in the vicinity ranges from 4,950 to 8,560 ft²/day and the hydraulic conductivity ranges from 30 to 140 ft/day. The pumping test from the closest extraction well #3810U yielded a transmissivity of 7,220 ft²/day and hydraulic conductivity of 100 ft/day assuming an aquifer thickness of 72 ft (Montgomery, 1992).

3.2 HISTORICAL CHROMIUM GROUNDWATER SAMPLING ACTIVITIES

In 1991, six groundwater monitoring wells were installed on the Eastern and Western Parcels (GW-1, -2, and -3 on the Western Parcel and GW-4, -5, and -6 on the Eastern Parcel). In 1993, four additional wells were installed off-site on the Kaiser Permanente property (GW-7, -8, -9, and -10). Table 3-1 shows the well construction details of the monitoring wells. Groundwater monitoring for chromium was conducted in selected wells in August 1993; all samples were well below accepted action levels for chromium (Figure 3-2).

In July 1997 and February 1998, groundwater samples were collected from GW-3 and GW-4, at the RWQCB's request, for chromium at the site. The samples contained 1.4 mg/L of total chromium in GW-3 and 0.043 mg/L of total chromium in GW-4. Honeywell has collected additional samples in July 1998, July 1999 and February 2001. The data for these samples are presented in Table 3-2.

Samples were collected during the July 1998 event using various methods to determine if variations in sampling technique affected results. No consistent difference in concentrations based on the filtration method was identified; the variation between the duplicates is in some cases greater than the different filtration techniques. Samples collected directly from a submersible pump situated near the bottom of the water column were significantly lower than those collected with a bailer after purging with a submersible pump. This is possibly due to

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SECTION 4

REMEDIAL INVESTIGATION WORKPLANS

The objective of the planned remedial investigation is to determine if the residual chromium in soil poses a threat to groundwater quality and to better understand the groundwater conditions and fate and transport of chromium beneath the site. This section presents workplans for the proposed soil and groundwater investigations at the site.

4.1 SOIL INVESTIGATION WORKPLAN

The purpose of the soil investigation is to determine if chromium in soil at Plant 1 area poses a threat to groundwater. Additionally, physical and chemical data required to support fate and transport evaluations will also be collected. Historical data collected during previous investigations, and evaluations of the data presented in Section 2 were used to define the scope of the soil investigation.

4.1.1 Soil Investigation

As discussed in Section 2, further soil investigation will be focused on Plant 1 area as the chromium left in soil at the site may potentially pose a threat to groundwater. Although previous soil sampling adequately defined the lateral extent of chromium in soil, the vertical limit of chromium in soil is not fully characterized. In order to characterize the vertical extent of chromium in soil within previously defined chromium soil source area at Plant 1, four soil borings will be drilled (Figure 4-1). Two of the borings will be advanced to groundwater to collect soil and groundwater samples below the water table in addition to the soil sampling from the vadose zone. One deep boring (PBP1-01) will be drilled to groundwater (approximately 250 feet bgs) in the vicinity of SBP1-73. Another deep boring (PBP1-02) will be advanced to a total depth of approximately 310 feet to allow for installation of groundwater monitoring well GW-14. Well installation is discussed in Section 4.2.3.

The other two borings (PBP1-03 and PBP1-04 on Figure 4-1) will be drilled to at least 100-ft bgs but the total depth will depend on the concentration of chromium detected in soil samples. Either Hach® test kit for hexavalent chromium or laboratory rush analyses for total and hexavalent chromium for the samples from 80, 90, and 100 feet bgs will be performed. If the results are above background (10 mg/kg for total chromium and <0.25 mg/kg for hexavalent chromium) the boring will be continued until two consecutive samples are within fifty percent of background concentrations for total and hexavalent chromium. All borings will be drilled using the air rotary casing hammer method since formations with sandy gravel and occasional boulders must be penetrated (Section 4.3.4).

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in Section 4.3.5. Exceptions to these procedures will be noted in the field notebook or on the boring logs.

4.2 GROUNDWATER INVESTIGATION WORKPLAN

The purpose of the groundwater investigation is to understand the hydrogeological conditions of the site and determine the current vertical and horizontal extent and the fate and transport characteristics of chromium in groundwater. Historical groundwater monitoring data presented in Section 3 were used to define the scope of the groundwater investigation.

Groundwater field investigations, in addition to off-site and on-site well installation, include quarterly groundwater monitoring events and water level measurement. The following sections provide more details regarding proposed field activities.

4.2.1 Chromium Groundwater Investigation

Well Installation

Four new monitoring wells are proposed to be added to the groundwater monitoring network. Locations of proposed new wells are shown on Figure 3-3. One new well (GW-14) is proposed to be installed within the Plant 1 source zone in the deep soil boring PBP1-02. This new well will provide critical information on the groundwater conditions and chromium concentrations directly beneath the source zone.

The three proposed off-site wells are located within the Union Pacific Railroad right-of-way (ROW) as shown on Figure 3-3. Details for installation of these three wells are presented in the RWQCB-approved workplan dated 1994 (Hydrologue 1994a and 1994c). Due to inability to gain access from the Railroad, these wells have not yet been installed. Honeywell has requested RWQCB assistance in securing access from the Railroad (Honeywell, 2001). Honeywell will initiate the effort to gain access from the railroad, and respectfully reiterates its request to the RWQCB for support in securing the needed access permit from the Railroad in order to complete the well installation.

The proposed locations for the three off-site wells on Figure 3-3 differ from the locations indicated in the 1994 workplan. Based on the data collected in recent years, the new locations fit better with the overall groundwater monitoring objectives, in addition to the site constraints and the safety limitations imposed by the railroad which preclude their installation at originally proposed locations.

Groundwater Monitoring

As part of the chromium groundwater investigation for the site, four quarterly sampling events will be conducted at GW-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, and other wells as they are installed, and water levels will be measured in all wells monthly for 12 months. After one year, the frequency of the monitoring program will be re-evaluated based on the overall level and variability of seasonal fluctuations. All samples will be analyzed for total and hexavalent

chromium. Geochemical parameters will be performed during selected events in accordance with guidelines from USEPA (USEPA, 2000b). The analytical program for the groundwater samples is summarized in Table 4-2. During the two quarterly monitoring events corresponding to low and high water season, additional samples will be collected from three different depths in GW-1, -3, -7, -10, and -14 (proposed new well) to assess the vertical distribution of chromium in the aquifer. All site monitoring wells were installed with long screen intervals to accommodate significant water level fluctuations. All proposed new monitoring wells, once installed, will be included in the quarterly groundwater monitoring program.

Prior to the commencement of the groundwater sampling program, the functionality of all existing wells will be verified and the total depth of wells measured to ensure that significant siltation is not present. Excessive siltation may impact the functionality of monitoring wells and will be removed if identified.

4.2.2 Groundwater Sampling Procedures

Standard procedures will be utilized for purging and sampling groundwater monitoring wells. In addition to the samples collected for laboratory analyses, field parameters will be measured. The general groundwater-indicator parameters, pH, temperature, electrical conductivity, and turbidity will be measured during each sampling event. The groundwater geochemical parameters, dissolved oxygen (DO), oxidation-reduction potential (ORP), ferrous iron (Fe[II]), alkalinity, and CO₂, will also be measured. Some of the parameters will be measured with a direct-reading meter, while others will be measured using a Hach® portable colorimeter in accordance with specific Hach® analytical procedures.

Qualified field personnel trained in the conduct of groundwater sampling, record documentation, and COC procedures will perform all sampling activities. In addition, sampling personnel will have thoroughly reviewed this workplan prior to sample acquisition and will have a copy of these procedures available onsite for reference.

The following paragraphs and Section 4.3 present the procedures to be followed for groundwater sample collection from groundwater monitoring wells. Exceptions to these procedures will be noted in the field logbook or on the groundwater sampling record.

Groundwater Monitoring Procedures

In general, groundwater sampling will include:

- (1) water level measurements;
- (2) calculation of proper purge volume and well purging;
- (3) collection of a groundwater sample;
- (4) proper field documentation; and
- (5) proper delivery of chilled samples under chain-of-custody (COC) to the laboratory.

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All equipment to be used for sampling will be assembled, decontaminated, and calibrated (if required) prior to arriving in the field. All non-dedicated sampling and test equipment that will contact groundwater will be decontaminated before each use. This includes the water-level probe and cable, test equipment for onsite use, and other equipment that will contact the samples. The decontamination protocol will be:

- Wash with potable water and phosphate-free laboratory detergent;
- Rinse with potable water;
- Rinse with distilled or deionized water; and
- Air dry.

Procedures will be documented in the field notebook and on the groundwater sampling record forms.

Laboratory-supplied sample containers and lids will be new and sealed by the laboratory prior to receipt by Parsons. The project laboratory will add any necessary chemical preservatives to sample containers prior to shipping the containers to Parsons. The type of container provided and the method of container decontamination will be documented in the project laboratory's permanent record of the sampling event.

As required, field analytical equipment will be calibrated according to the manufacturers' specifications prior to field use. This applies to equipment used for onsite measurements of dissolved oxygen (DO), pH, conductivity, temperature, oxidation-reduction potential (ORP), Fe(II), and carbon dioxide.

Prior to removing water from the monitoring well, an electronic water-level indicator will be used to measure the static water level to the nearest 0.01 feet. Additionally, the depth to the bottom of the well will be measured by slowly lowering the water-level probe to the bottom and taking the measurement to the nearest 0.01 foot.

A portable Grundfos® Redi-Flo II® will be used for purging the monitoring wells. The volume of water contained within the well casing at the time of sampling will be calculated, and at least three times the calculated well casing volume will be removed from the well. If a well is evacuated to a dry state during purging, the well will be allowed to recharge to 80 percent of static water level, and then a sample will be collected.

After purging, with groundwater pH, temperature, and conductivity measurements stabilized to within 10 percent during three consecutive readings taken at least five minutes apart, the pump discharge will be reduced to a minimal flow rate of about 100 ml/min and samples will be collected. The water will be carefully poured down the inner walls of the laboratory-supplied sample containers to minimize aeration of the sample. Excess water collected during sampling will be disposed of in the same manner as purge water. Field quality assurance and quality control protocols are discussed in Section 4.4.

In order to provide complete documentation of the sampling event, records will be maintained by field personnel in a field logbook (Section 4.3.1). In addition, the following information will be recorded on the well sampling log:

- Sample location (facility name),

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- Sample identification,
- Date and time of sampling,
- Sampling/purge method,
- Field observations of sample appearance and color,
- Weather conditions,
- Water level prior to purging,
- Total monitoring well depth,
- Purge volume,
- Monitoring well condition,
- Sampler's identification,
- Field measurements of pH, temperature, specific conductivity, and DO; and
- Any other relevant information.

Onsite Groundwater Parameter Measurement

Some groundwater chemical parameters will be measured onsite. Some of the measurements will be made with direct-reading meters, while others will be made using a Hach® portable colorimeter in accordance with specific Hach® analytical procedures. These procedures are described in the following subsections.

All glassware or plasticware used in the Hach® analyses will have been cleaned prior to sample collection by thoroughly washing with a solution of laboratory-grade, phosphate-free detergent and water, and rinsing with isopropyl alcohol and deionized water to prevent interference or cross-contamination between measurements. If concentrations of an analyte are above the range detectable by the titrametric or colorimetric methods, the analysis will be repeated by diluting the groundwater sample with distilled water until the analyte concentration falls to a level within the range of the method. All rinseate and sample reagents accumulated during groundwater analysis will be collected, labeled, and carefully stored for proper disposal.

pH, Temperature, and Conductivity: Because the pH, temperature, and conductivity of a groundwater sample can change significantly within a short time following sample acquisition, these parameters will be measured in the field in unfiltered, unpreserved, "fresh" water collected using the same technique as the samples taken for laboratory analyses. The measurements will be made at regular intervals during purging in a flow-through cell or a clean container separate from those intended for laboratory analysis. The wells will be purged until the readings stabilize to within $\pm 10\%$ of consecutive readings. The measured values will be recorded in the groundwater sampling record.

Dissolved Oxygen Measurements: DO is the most thermodynamically favored electron acceptor used by microbes for the biodegradation of organic carbon. DO measurements will be made using a meter with an oxygen sensor in a flow-through cell at regular intervals during purging and immediately before groundwater sample acquisition. The monitoring

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wells will be purged until DO levels stabilize. DO readings will be recorded in the groundwater sampling record.

Oxidation/Reduction Potential: The ORP of groundwater is an indication of the relative tendency of a solution to accept or transfer electrons. ORP reactions in groundwater are usually biologically mediated; therefore, the ORP of a groundwater system depends on and influences rates of biodegradation.

The ORP will be measured in the field at regular intervals during purging and immediately before sample acquisition in a clean container separate from those intended for laboratory analysis or in a flow-through cell.

Iron (II) Measurements: Iron is an important trace nutrient for bacterial growth, and different states of iron can affect the ORP of the groundwater and act as an electron acceptor for biological metabolism under anaerobic conditions. Fe(II) concentrations will be measured in the field via colorimetric analysis with a Hach® DR/700 Portable Colorimeter after appropriate sample preparation. Hach® Method 8146 (or similar) for Fe(II) (0 to 3.0 mg/L) will be used to prepare and analyze the samples.

Alkalinity Measurements: Alkalinity concentrations will be measured in the field via titrametric analysis with a Hach® kit.

Carbon Dioxide Measurements: Carbon dioxide concentrations will be measured in the field using a CHEMetrics® portable titration kit. The method uses a sodium hydroxide titrant with a pH indicator.

4.2.3 Groundwater Monitoring Well Design and Installation

The three off-site wells in the railroad ROW will be constructed per the approved 1994 workplan (Hydrologue, 1994a,b). In order to prevent the possibility of metals leaching from the casing, PVC screen will be used instead of stainless steel specified in the 1994 workplan. Wells will be constructed with new, decontaminated, 4-inch outside-diameter, flush-jointed and threaded, Schedule 80 polyvinyl chloride (PVC) casing and screen. Slot size for screened intervals will be 0.020 inch, as opposed to the 0.030-inch slot specified in the 1994 workplan, to prevent potential siltation which has been observed in some existing wells with 0.030-inch slot. The well screen interval will be 145 feet in length from 160 feet bgs to 305 feet bgs and the screen will be capped at the bottom with a threaded end cap. The annular space filter pack will be composed of silica sand Lonestar #2-16 or equivalent. If differences in lithology are found during drilling, modifications to the slot size and filter pack design will be made in the field.

The on-site well will be completed as a 6-inch well to allow for future aquifer testing or remediation if needed. The well will be constructed with new, decontaminated, 6-inch outside diameter, flush-jointed and threaded, Schedule 80 PVC casing and screen. Slot size for screened intervals will be 0.020 inch. The well screen interval will be 145 feet in length from 160 feet bgs to 305 feet bgs and the screen will be capped at the bottom with a threaded

end cap. The annular space filter pack will be composed of silica sand Lonestar #2-16 or equivalent. If differences in lithology are found during drilling, modifications to the slot size and filter pack design will be made in the field. Detailed well specification for the proposed on-site well, GW-14, is shown on Figure 4-2.

4.3 STANDARD FIELD PROTOCOLS

Work on all phases of the remedial investigation will be conducted according to the following standard field protocols.

4.3.1 Field Log Book

All field activity information will be recorded in a permanently bound notebook with sequentially numbered pages. The date and initials will be recorded at the top of each page. Minimum information required for each entry includes:

- Time (recorded in the column under the date);
- Weather conditions during previous 24 hours;
- Persons performing the drilling, sampling, testing, or other activity;
- Drilling and well construction information;
- Sample location map or detailed sketch,
- Site identification;
- Photograph numbers and description;
- Equipment decontaminated and procedures utilized;
- Equipment serial numbers;
- Calibrations;
- Field measurements not recorded on other data sheets;
- Records of pertinent conversations;
- Names, titles, and organization of any visitors entering the site; and
- Comments (suitable for reconstructing incident without memory).

All entries will be made in waterproof ink. Any errors will be corrected by drawing a single line through the mistake, and all corrections will be initialed and dated. Blank spaces will be crossed out and initialed and dated.

4.3.2 Utility Clearance

All boring locations will be cleared for underground utilities and other obstacles by a geophysical survey prior to drilling. All proper state and local agencies, including DIG ALERT, will be notified in advanced of drilling operations.

4.3.3 Survey

Parsons will contract a licensed surveyor to survey all boring and well locations for future reference and comparison to previously collected data.

4.3.4 Air Rotary Casing Hammer Drilling

The air rotary casing hammer drilling method will use a tri-cone bit for drilling and compressed air to remove soil cuttings from the drill casing. In this method, air is directed through the hollow drilling rod down to the drill bit, where soil cuttings and entrained groundwater are blown up the drill casing. The drill casing will be advanced behind the tri-cone bit as the borehole is being drilled. Then the drill cuttings are brought up inside the inner drive tube into a cyclone at the surface. The cyclone slows the movement of the soil and water and drops them into a 55-gallon drum or a large roll-off type dump box. Water that accumulates in the drums and bins will be pumped off to a portable water tank for offsite disposal. In order to collect soil samples a split-spoon sampler will be inserted through the hollow center of the drill stem and hammered out beyond the end of the lead auger drill bit into undisturbed sediments. These samples will be retrieved by the driller and handed to the on-site geologist who will log the stratigraphy.

4.3.5 Sample Handling

All samples collected will be labeled in a clear and precise way for proper identification in the field and for tracking in the laboratory. The samples will have preassigned, identifiable, and unique numbers.

- Project location/name;
- Sample identification number;
- Sampling date;
- Sampling time;
- Preservatives added;
- Sample collector's initials; and
- Analyses requested.

After the samples are sealed and labeled, they will be packaged for shipment to the project laboratory. Every effort will be made to protect the samples against shipment breakage. All glass sample bottles will be wrapped in bubble pack and taped. The cooler will be filled with double-bagged ice, to maintain a maximum shipping temperature of 4°C.

After the cooler has been filled with samples and bagged ice, any remaining space will be filled with bubble pack. This will help prevent sample movement during shipment. The lid and the drain port will be taped shut. The cooler will then be taped closed by taping around the cooler at least twice on each side of the cooler. Samples will be either shipped via an overnight service to the project laboratory or picked up by courier and delivered the same day.

Chain-of-custody forms will be completed in the field and will accompany all samples during shipment. The forms will be placed in a locking plastic bag and taped to the inside lid of the shipping cooler.

The chain-of-custody form will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is either in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorized personnel. Until the samples are shipped, the custody of the samples will be the responsibility of Parsons. The site leader or designee will sign the chain-of-custody form.

4.4 FIELD QUALITY ASSURANCE/QUALITY CONTROL

As a check on field sampling, quality assurance/quality control (QA/QC) samples will be collected during each sampling event. Definitions for field QA/QC samples are presented below.

4.4.1 Field Duplicates

Field duplicate samples will be collected and analyzed to evaluate sampling and analytical precision. A field duplicate is defined as two or more samples collected independently at the same sampling location during a single act of sampling. The laboratory will be unable to distinguish which samples are field duplicates. Each of the field duplicates will be uniquely identified with a coded identifier, which will be in the same format as other sample identifiers. Duplicate sample results are used to assess the precision of the sample collection process. Field duplicates will be collected from ten percent of all samples. Field duplicate analysis is not required for geochemical parameters.

4.4.2 Equipment Rinseate Blank

Equipment rinseate blanks (field blanks) are used to measure contamination introduced to a sample set from improperly decontaminated sampling equipment. Equipment rinseate blanks consist of ASTM Type II water (or equivalent) poured into or pumped through the sampling device following decontamination. The rinseate is transferred to a sample bottle appropriate for the analysis and transported to the laboratory for analysis. One equipment rinseate sample will be collected per sampling event for each type of sampling equipment used (disposable bailers excluded). The equipment rinseate samples are analyzed for the same laboratory parameters as the site samples. Equipment rinseate blanks need not be analyzed for geochemical parameters.

4.4.3 Temperature Blank

One temperature blank will accompany each cooler containing project samples submitted to the subcontract laboratory. Temperature blanks consist of DI water poured into a glass container. Temperature measurements are essential to verify proper sample preservation for all analyses requiring sample preservation by refrigeration ($4 \pm 2^{\circ}\text{C}$). Laboratory personnel

will obtain temperature measurements from the temperature blank upon receipt of sample shipment containers and this measurement will be recorded on the COC. In the absence of a temperature blank, the laboratory must measure cooler temperature using an infrared thermometer. Temperature readings obtained must be documented on the COC.

4.5 INVESTIGATION DERIVED WASTE (IDW) MANAGEMENT PLAN

In the process of conducting subsurface investigations, well installation, and groundwater monitoring various types of potentially contaminated investigation-derived waste (IDW) will be generated. Possible IDW includes:

- Used personal protective equipment (PPE);
- Purge water;
- Disposable sampling equipment;
- Decontamination fluids; and
- Soil cuttings from soil borings.

Used PPE and disposable equipment will be double bagged and placed in a municipal refuse dumpster on site. These wastes are not considered hazardous and may be sent to a municipal landfill. Any waste PPE and disposable equipment which can still be reused will be rendered inoperable before disposal in the refuse dumpster.

Soil cuttings generated during the subsurface sampling will be stored in 55-gal drums or bins on site. Profiling of soil cuttings will be done to ensure appropriate disposal. Purge water and decontamination fluids will be stored in 55-gal drums or a polyethylene tank on-site until they can be profiled and disposed of properly.

4.6 SITE SPECIFIC HEALTH AND SAFETY PLAN

All remedial investigations will be conducted in accordance with the provisions of the site-specific health and safety plan for the North Hollywood site (Parsons, 2001). After this workplan is approved by the RWQCB, the site-specific health and safety plan will be updated to include all the elements of the planned work.

4.7 PROJECT SCHEDULE

Upon RWQCB approval of this workplan, Parsons will proceed on behalf of Honeywell to schedule and coordinate all fieldwork. Groundwater monitoring is anticipated to begin in the first quarter of 2002. Subsurface soil investigations are anticipated to begin in the first or second quarter of 2002, contingent upon site operation schedule and requirements.

A data report will be prepared after the completion of the proposed soil investigation to summarize the findings of soil investigation and the groundwater monitoring conducted.

SECTION 5

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Table 2-1
Earth Tech 1997 Soil Confirmation Sampling Results

Boring	Total Chromium (mg/kg)		Hexavalent Chromium (mg/kg)	
	Confirmation Soil Sampling	1993 Soil Investigation Sampling	Confirmation Soil Sampling	1993 Soil Investigation Sampling
SBP1-8A	16	583.0 (5')	0.34	28.6 (5')
SBP1-36A	859	1140.0 (5')	0.99	68.2 (5')
SBP1-37A	30.7	1700.0 (5')	ND	33.7 (5')
SBP1-73A	850	340.0 (10')	31	170.0 (10')
SBP1-500	2,280	NA	21.5	NA
SBP1-501	26.6	NA	3.2	NA
SBP1-502	1,650	NA	37.5	NA

Note:

ND = Below Detection Limit

NA = Not Available

Source: Earth Tech, 1997

Table 3-1
Well Construction Details

Well ID	Well Installation Date	Screen Length	Screen Interval (ft bgs)	Total Depth (ft bgs)	Well Diameter (inches)	Screen Size	Screen Type
GW-1	07/12/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-2	07/01/91	60	241-301	301	4	0.030	Sch 80 PVC
GW-3	07/09/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-4	07/03/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-5	06/27/91	60	248-308	308	4	0.030	Sch 80 PVC
GW-6	07/16/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-7	07/01/93	80	230-310	310	4	0.030	Steel
GW-8	07/19/93	80	225-305	305	4	0.030	Steel
GW-9	07/23/93	80	223-303	303	4	0.030	Steel
GW-10	07/12/93	80	230-310	310	4	0.030	Steel

Table 3-2
Summary of Historical Chromium Groundwater Data

Date	Sample type		Well Id	Analytical Result	
				Chromium (mg/L)	Hexavalent Chromium (mg/L)
	Filtration	Collection			
Aug-93	Not Filtered	NA	GW-2	<0.010	-
Aug-93	Not Filtered	NA	GW-3	0.012	-
Aug-93	Not Filtered	NA	GW-6	<0.010	-
07/30/1997	Not Filtered	Bailer	GW-3	1.4	<2.0
07/30/1997	Not Filtered	Bailer (Dup)	GW-3	0.93	1.4
02/27/1998	Not Filtered	Bailer	GW-4	0.043	0.048
02/27/1998	Filtered in Field	Bailer	GW-4	0.021	0.019
07/28/1998	Filtered at Lab	Submersible Pump	GW-3	0.17	0.17
07/28/1998	Not Filtered	Submersible Pump	GW-3	0.17	0.18
07/28/1998	Filtered in Field	Bailer	GW-3	1.1	1.4
07/28/1998	Filtered in Field	Bailer (Dup)	GW-3	1.7	1.7
07/28/1998	Not Filtered	Bailer	GW-3	0.98	0.99
07/28/1998	Not Filtered	Bailer (Dup)	GW-3	0.88	0.57
07/23/1999	Filtered in Field	Bailer	GW-3	1.9	1.8
07/23/1999	Filtered in Field	Bailer (Dup)	GW-3	2	2
02/08/2001	Not Filtered	Submersible Pump	GW-1	0.174	0.151
02/08/2001	Not Filtered	Submersible Pump	GW-2	0.0129	<0.001
02/08/2001	Not Filtered	Submersible Pump	GW-3	5.81	4.61
02/09/2001	Not Filtered	Submersible Pump	GW-6	0.0157	0.001
02/09/2001	Not Filtered	Submersible Pump	GW-7	0.36	0.311
02/09/2001	Not Filtered	Submersible Pump	GW-8	0.00614	0.001
02/09/2001	Not Filtered	Submersible Pump	GW-9	<0.005	0.001
02/09/2001	Not Filtered	Submersible Pump	GW-10	0.617	0.691

(Dup) - Duplicate sample collected

NA - Not available

- Not analyzed

Note:

All bailer samples were collected after proper purging with a submersible pump

Table 4-1
Soil Sampling and Analysis Program

Analytical Parameter	Analytical Method	Sampling Depths				Sampling Objective
		PBP1-01	PBP1-02	PBP1-03	PBP1-04	
Total Chromium	EPA 6010B	Every 10'	Every 10'	Every 10'	Every 10'	Chemical Characterization
Hexavalent Chromium	EPA 7199	Every 10'	Every 10'	Every 10'	Every 10'	Chemical Characterization
Synthetic Precipitation Leaching Procedure (SPLP)	EPA 1312	P	P	P	P	Chemical Characterization
Porosity	API RP40		Every 50'		Every 50'	Geochemical Analysis
pH	SW 9045C		Every 50'		Every 50'	Geochemical Analysis
Total Organic Carbon	SW 9060		Every 50'		Every 50'	Geochemical Analysis
Bulk Density	ASTM D2937		Every 50'		Every 50'	Geochemical Analysis
Grain Size	ASTM D42263		Every 50'		Every 50'	Geochemical Analysis
Moisture Content	ASTM D2216	Every 10'	Every 10'	Every 10'	Every 10'	Geochemical Analysis
Cation Exchange Capacity	EPA 9081		Every 50'		Every 50'	Geochemical Analysis
Total Manganese	EPA 6010B		Every 50'		Every 50'	Geochemical Analysis

Notes:

1. P = Pending analytical results.
2. Additional geochemical analyses may be requested based on field observations.

Table 4-2
Groundwater Sampling and Analysis Program

Analytical Parameter	Analytical Method	Monitoring Frequency*										Sampling Objective
		GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10	
Total Chromium	EPA 6010B	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Chemical Characterization
Hexavalent Chromium	EPA 7199	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Chemical Characterization
Title 22 Metals	EPA 6010B	A	A	A	A	A	A	A	A	A	A	Chemical Characterization
Total Organic Carbon	EPA 415.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Dissolved Organic Carbon	EPA 415.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Total Dissolved Solids	EPA 160.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Total Suspended Solids	EPA 160.2	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
pH	EPA 150.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Alkalinity	EPA 310.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Iron	EPA 7380	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Manganese	EPA 200.7	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Total Phosphate	EPA 365.2	A	-	A	A	-	-	A	-	-	A	Geochemical Analysis
Total Kjeldahl Nitrogen	EPA 351.3	A	-	A	A	-	-	A	-	-	A	Geochemical Analysis
Total Heterotrophic Microbes	SM 9215C	A	-	A	A	-	-	A	-	-	A	Geochemical Analysis
Chloride, Nitrate, and Sulfate	EPA 9056	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis

* Monitoring frequency: A = Annual, Q = Quarterly, - = Not Planned



Figure 1-1

Site Vicinity Map

Honeywell North Hollywood

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Pasadena, CA

001468

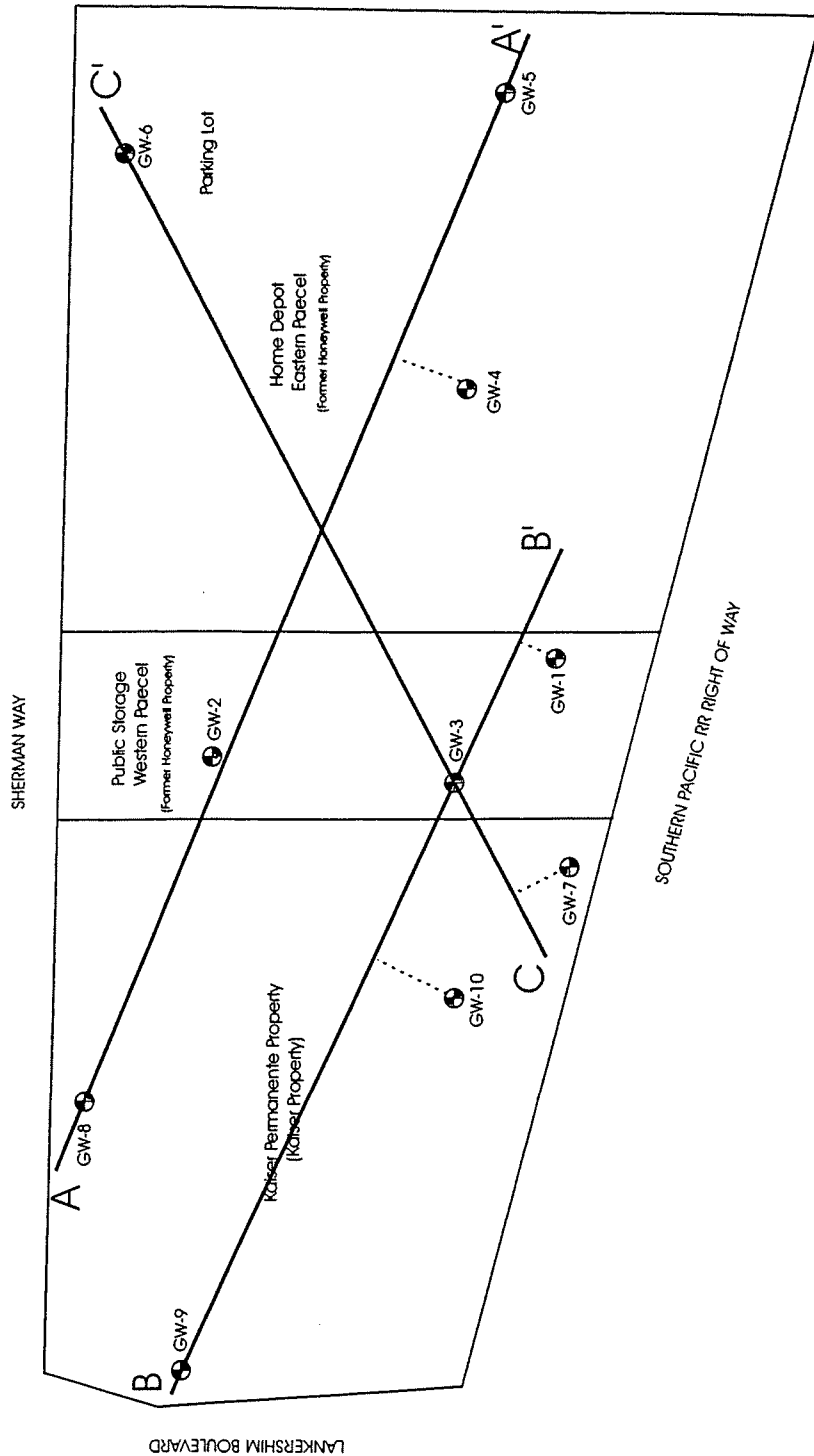


Figure 2-1

Location of Groundwater Monitoring wells and Cross Sections

Former Honeywell North Hollywood Site
11 600 Sherman Way, North Hollywood

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Pasadena, CA

North
↑

Legend

GW-1 Approximate location of groundwater monitoring well

Note: Site plan does not show buildings or current Property development

Approximate Scale
(1" = 200')

Source: GTI & TA Gleason

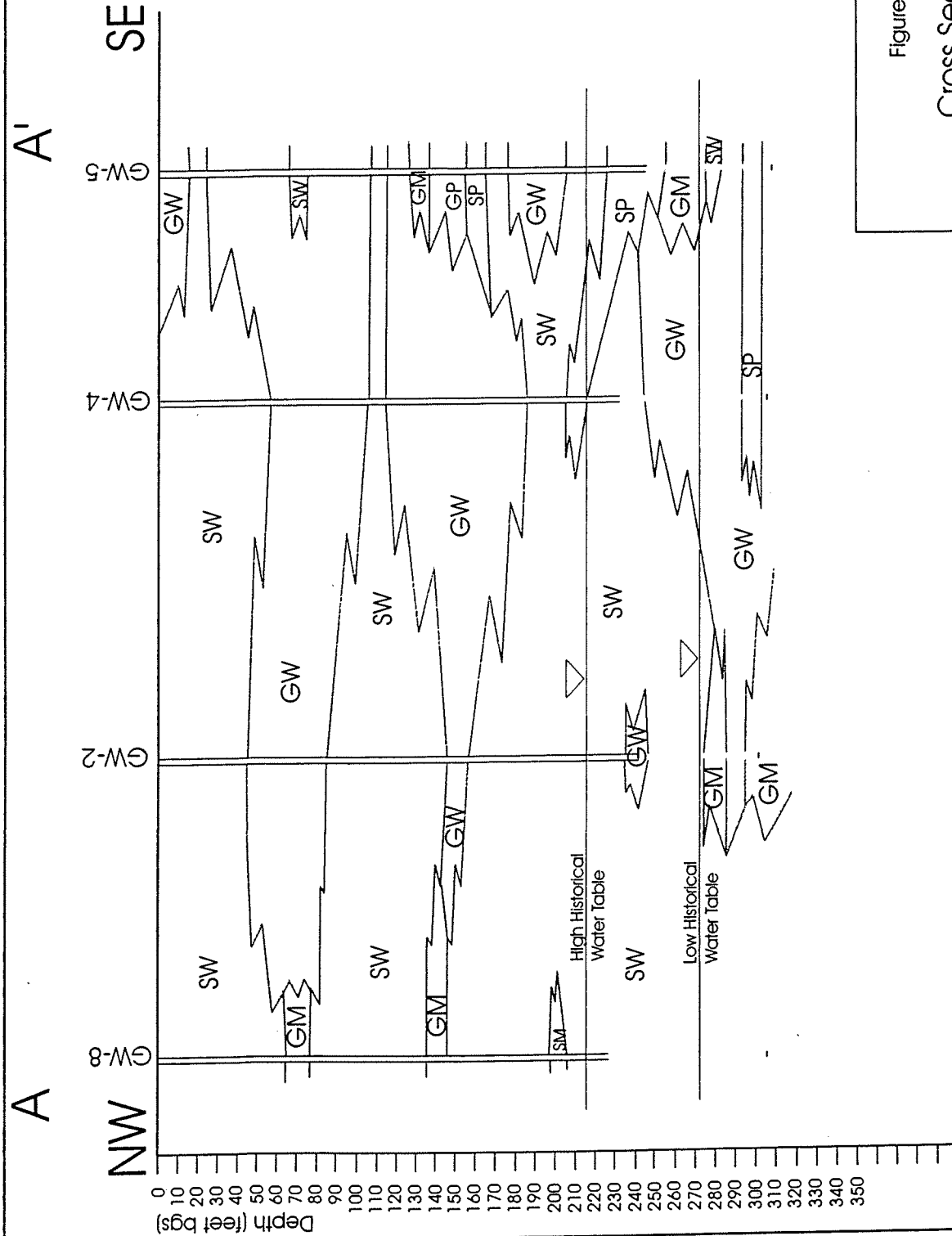


Figure 2-2

Cross Section A-A'

Former Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood

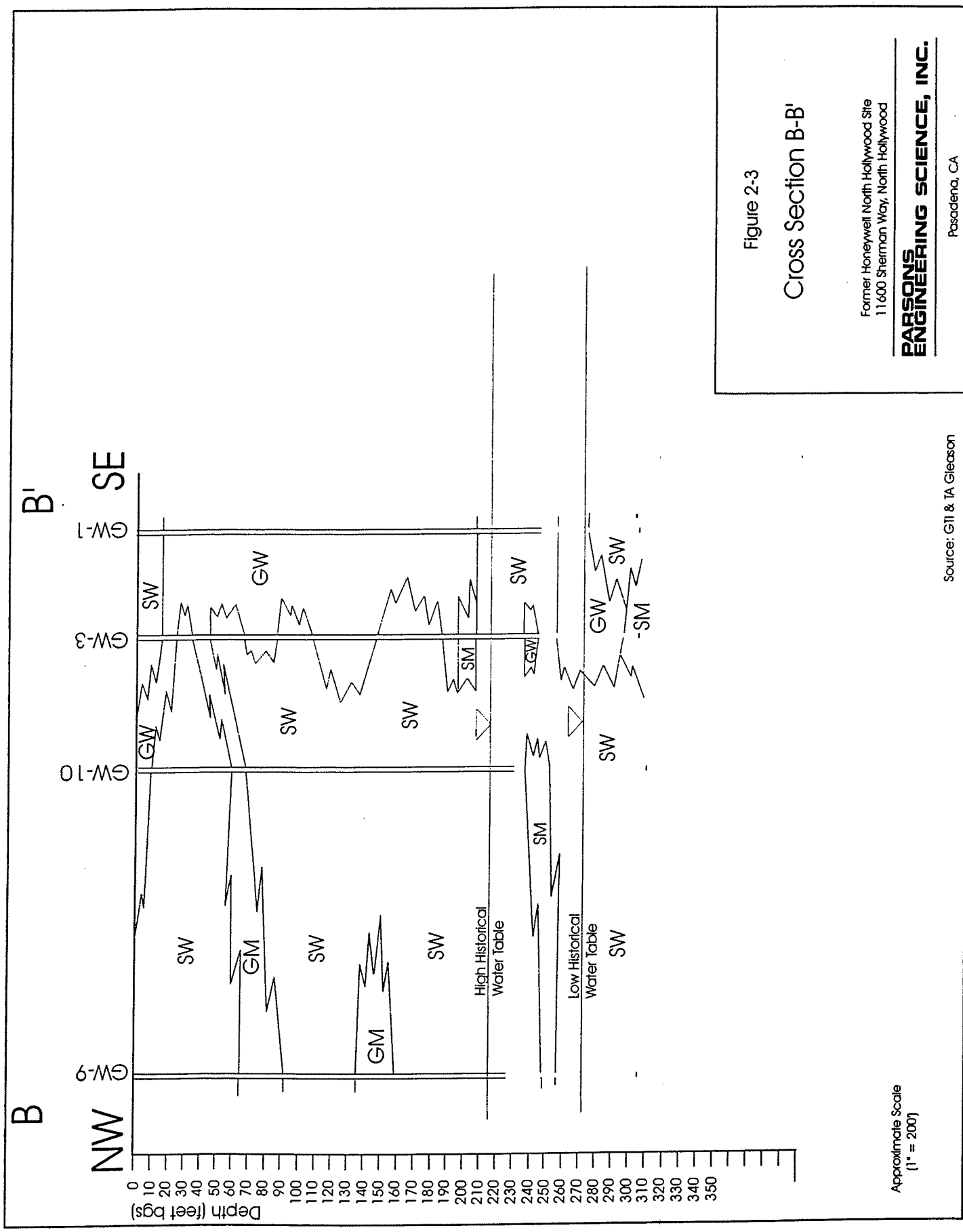
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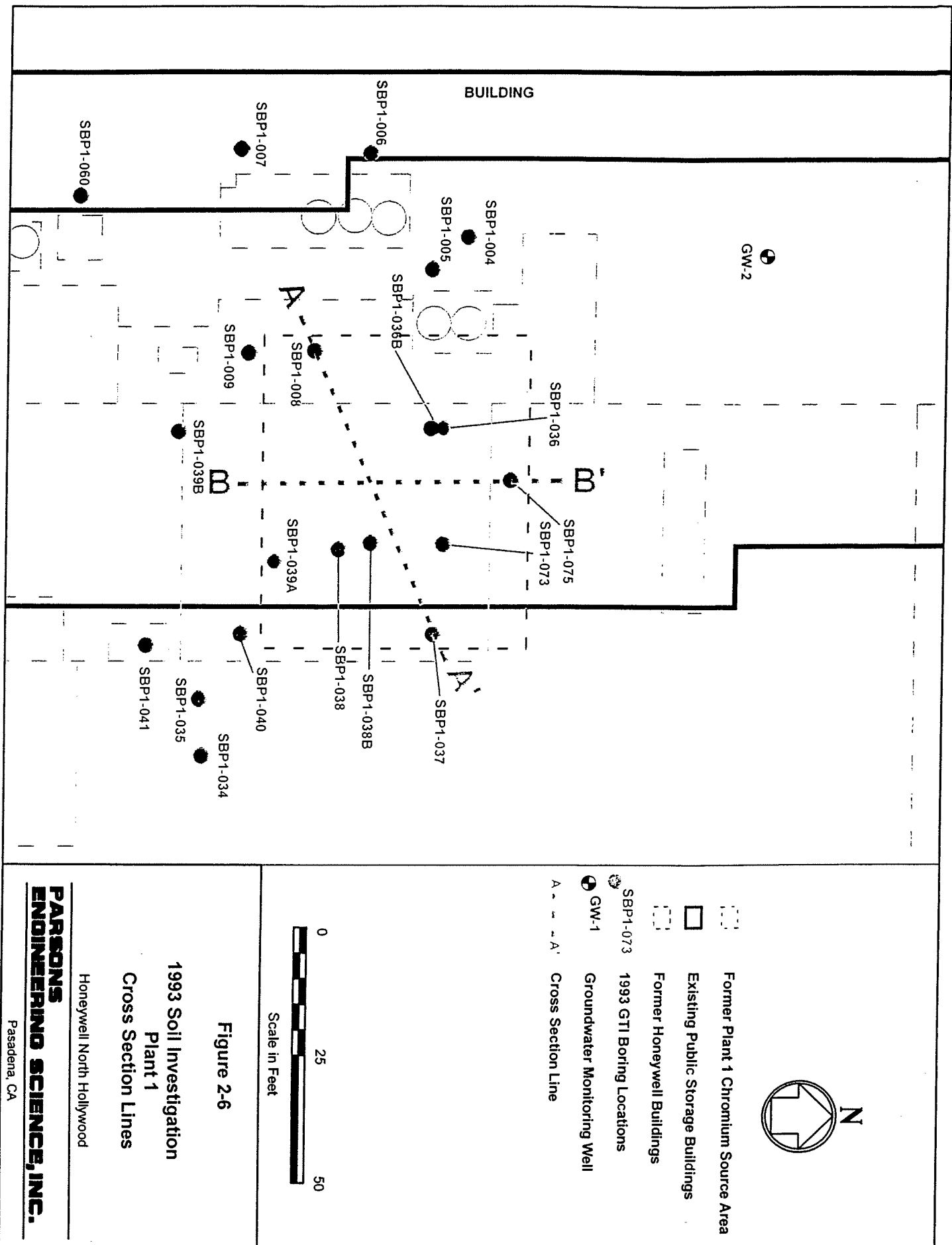
Pasadena, CA

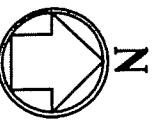
Source: GTI & TA Gleason





Approximate Scale
(1" = 200')

001470







-  Former Plant 2 Chromium Source Area
-  Former Honeywell Buildings
-  SBP1-073 1993 GTI Boring Locations
-  C - - - C' Cross Section Line

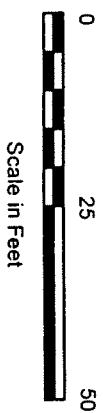


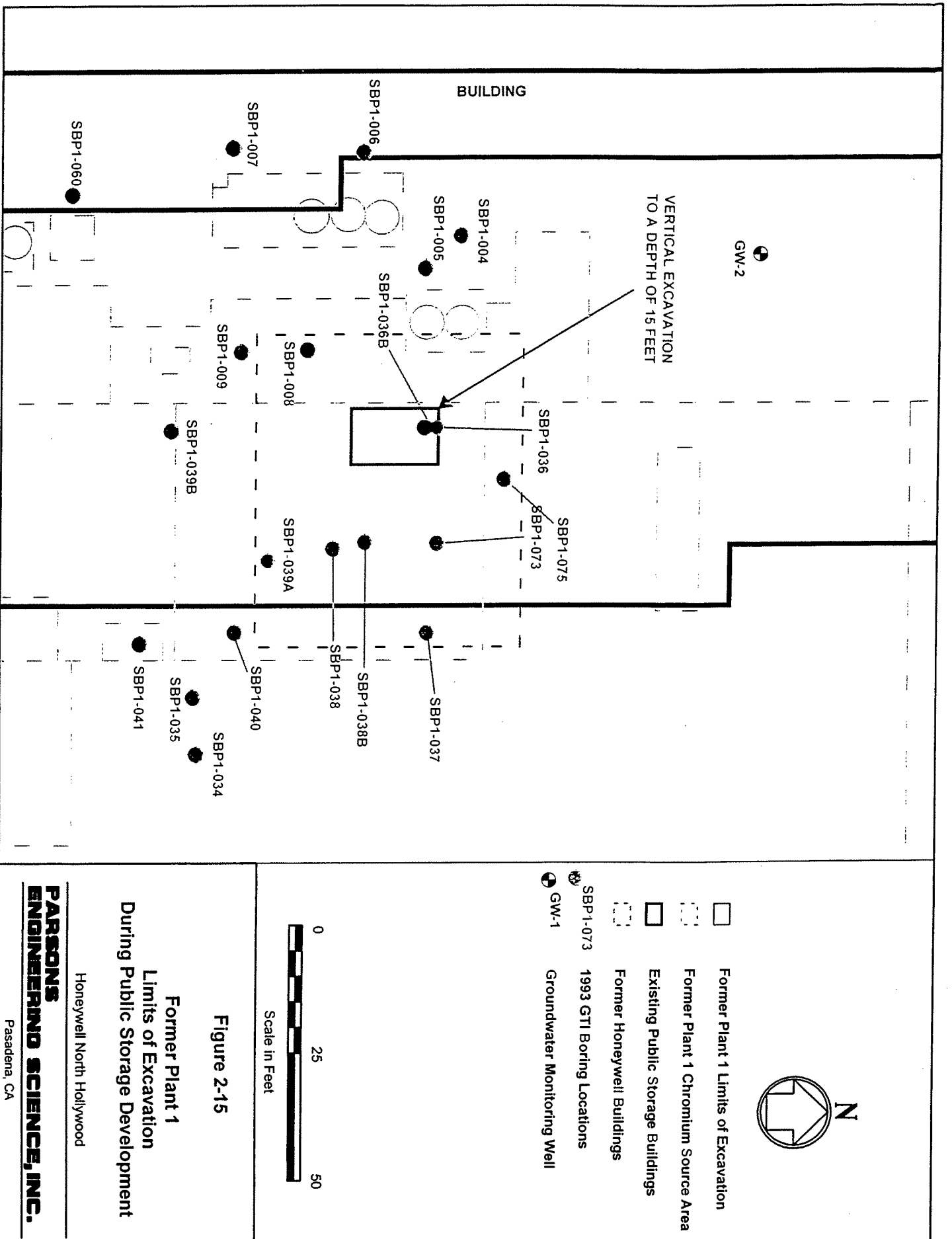
Figure 2-7

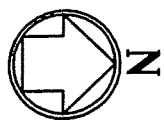
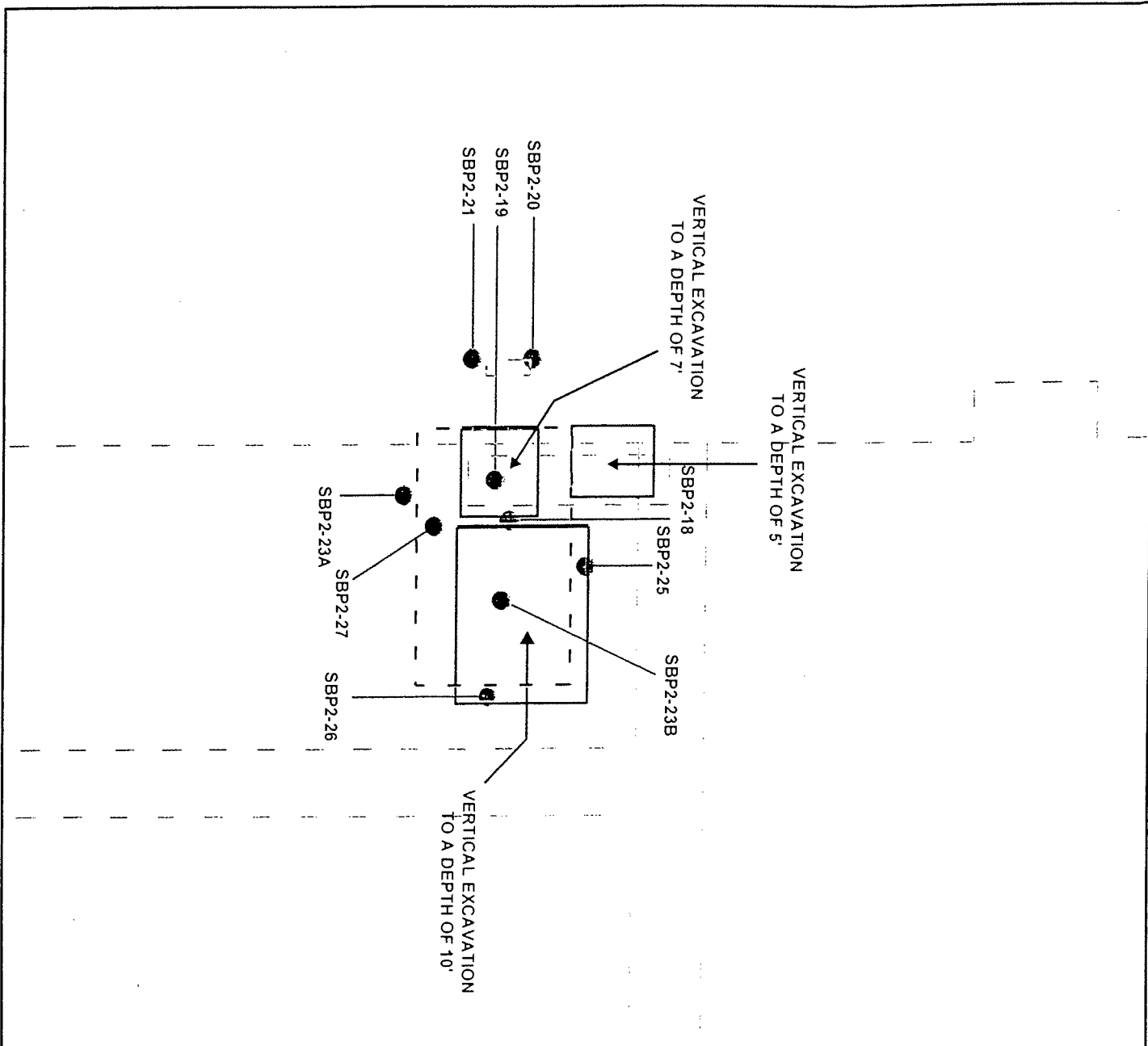
**1993 Soil Investigation
Plant 2
Cross Section Lines**

Honeywell North Hollywood

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- ☐ Former Plant 2 Limits of Excavation
- ☐ Former Plant 2 Chromium Source Area
- ☐ Former Honeywell Buildings
- ☐ 1993 GTI Boring Locations

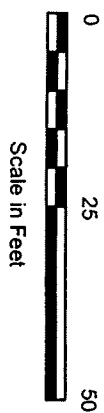


Figure 2-16

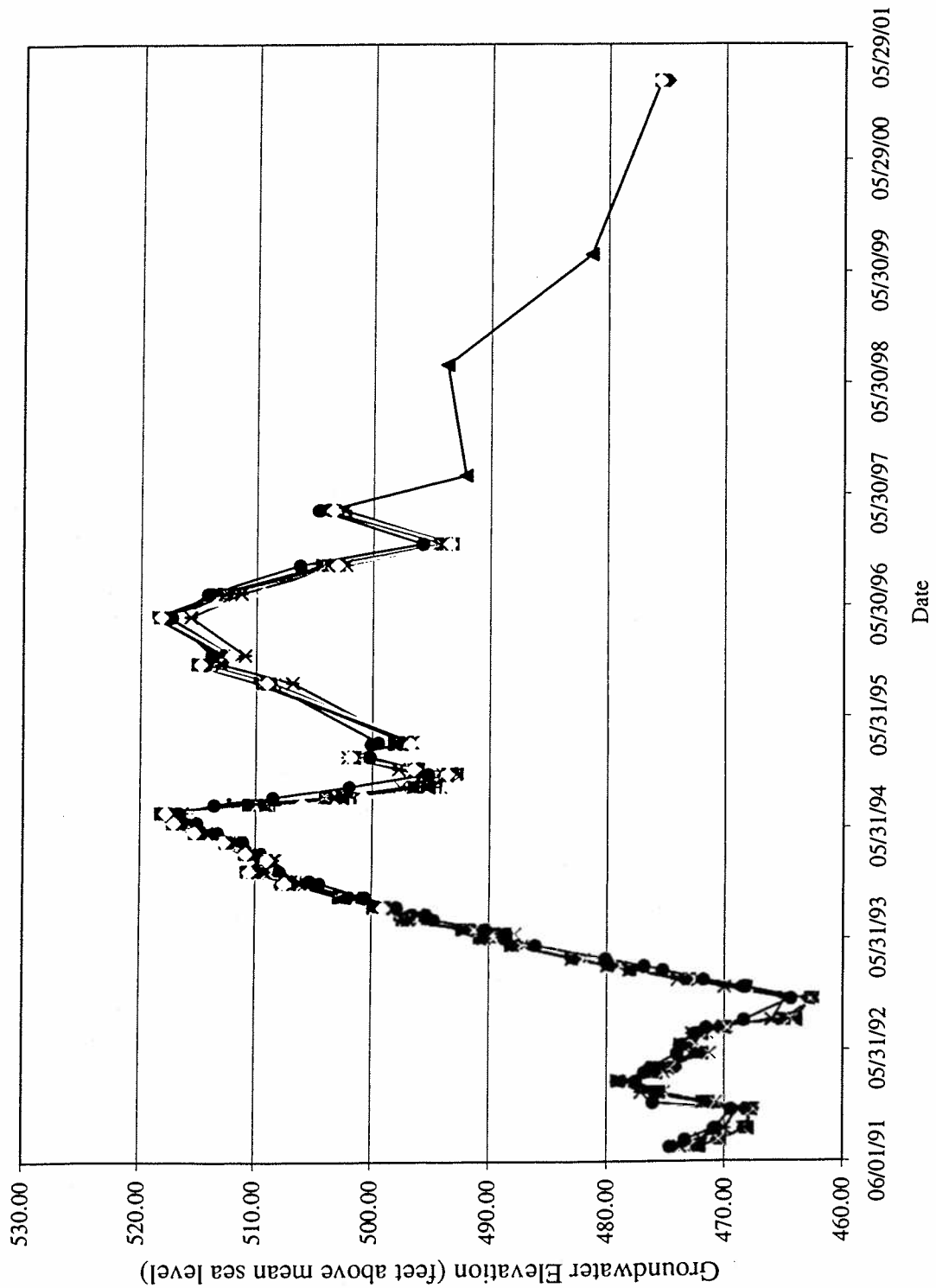
Former Plant 2
Limits of Excavation

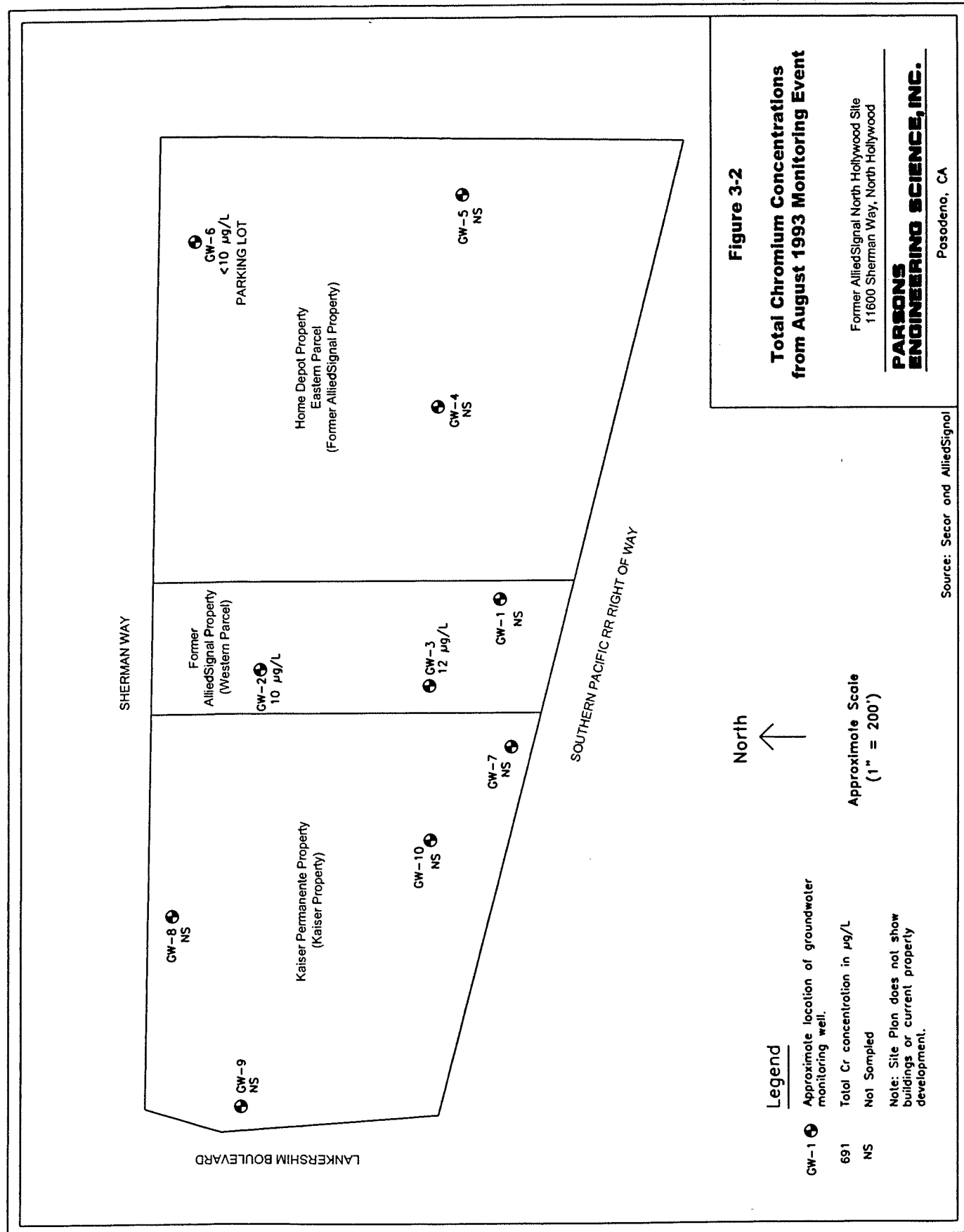
Honeywell North Hollywood

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Figure 3-1
 Historic Groundwater Elevation in North Hollywood Monitoring Wells





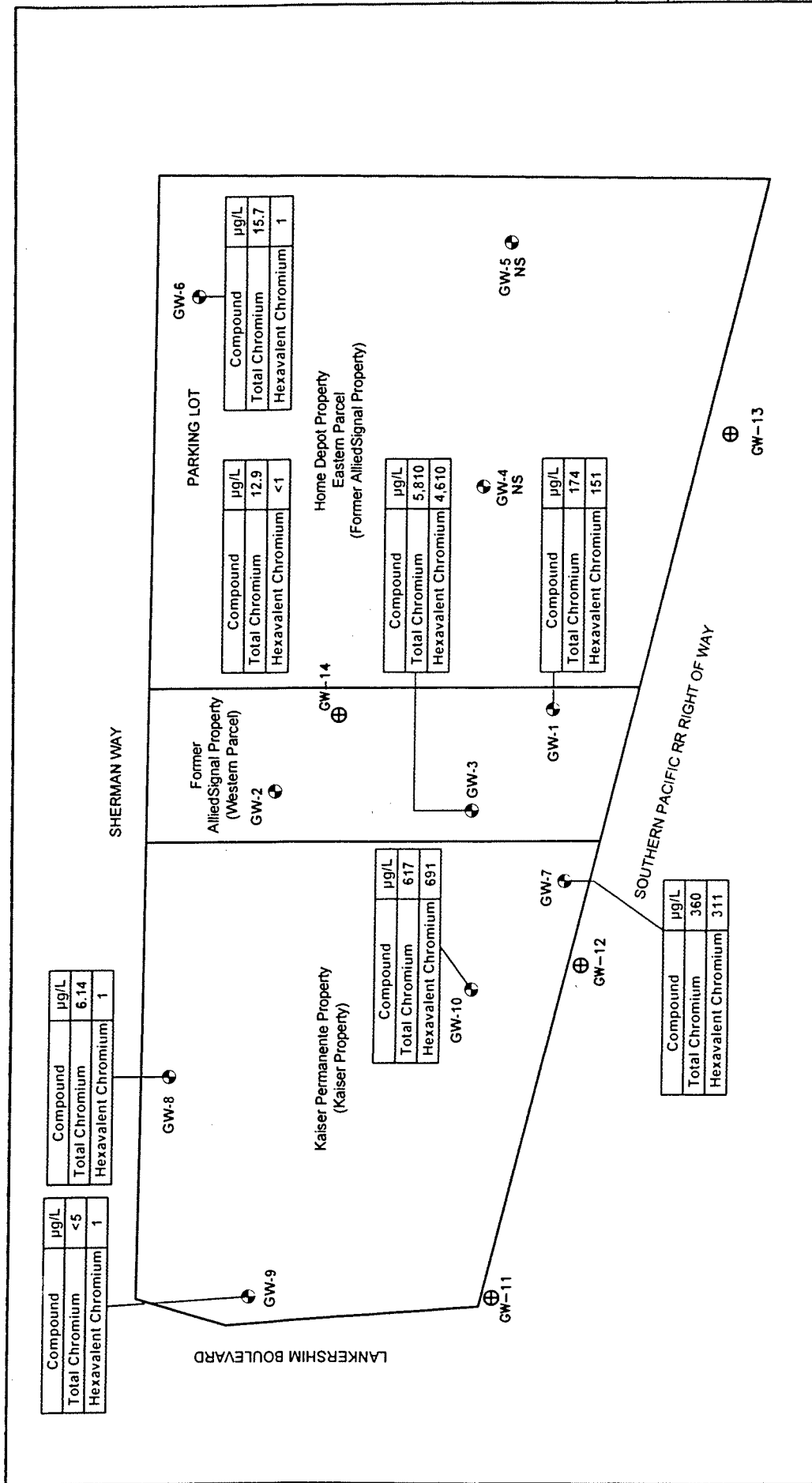
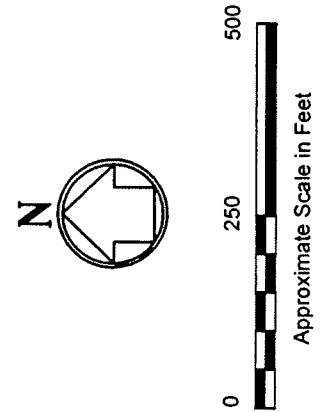
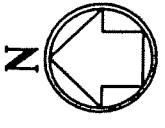


Figure 3-3
Total and Hexavalent Chromium
from February 2001 Monitoring Event



⊕ GW-11 Proposed Monitoring Well Location
 ● GW-1 Approximate Location of Groundwater Monitoring Well
 NS Not Sampled - Well Inaccessible
 Note: Site Plan does not show buildings or current property development.
 Source: Secor and AlliedSignal

Honeywell North Hollywood
PARSONS ENGINEERING SCIENCE, INC.
 Pasadena, CA



- Former Plant 1 Chromium Source Area
- Existing Public Storage Buildings
- Former Honeywell Buildings
- 1993 GTI Boring Locations
- Earth Tech 1993 Bucket Auger Boring Locations
- GW-1
- Groundwater Monitoring Well
- PBP1-01
- Proposed Deep Boring Locations
- PBP1-03
- Proposed Shallow Boring Locations

Note:
Proposed boring locations dependent upon
Public Storage Facility approval.



Scale in Feet

Figure 4-1

Plant 1
Proposed Boring Locations

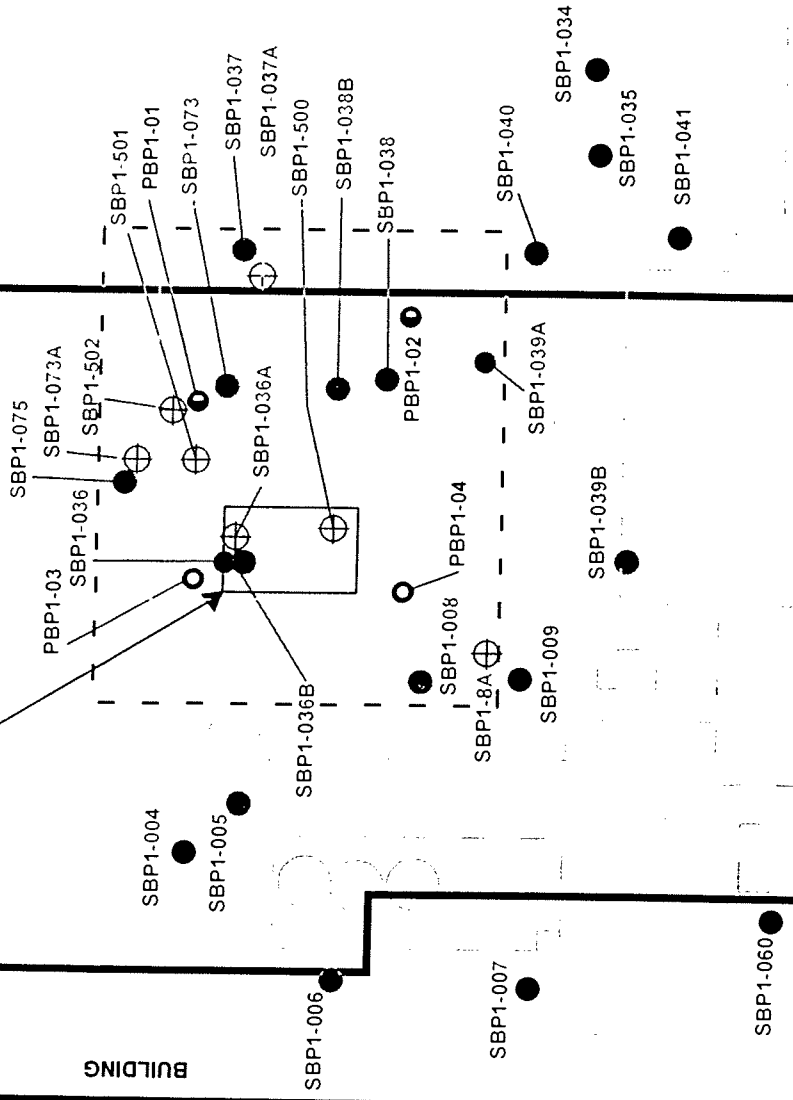
Honeywell North Hollywood

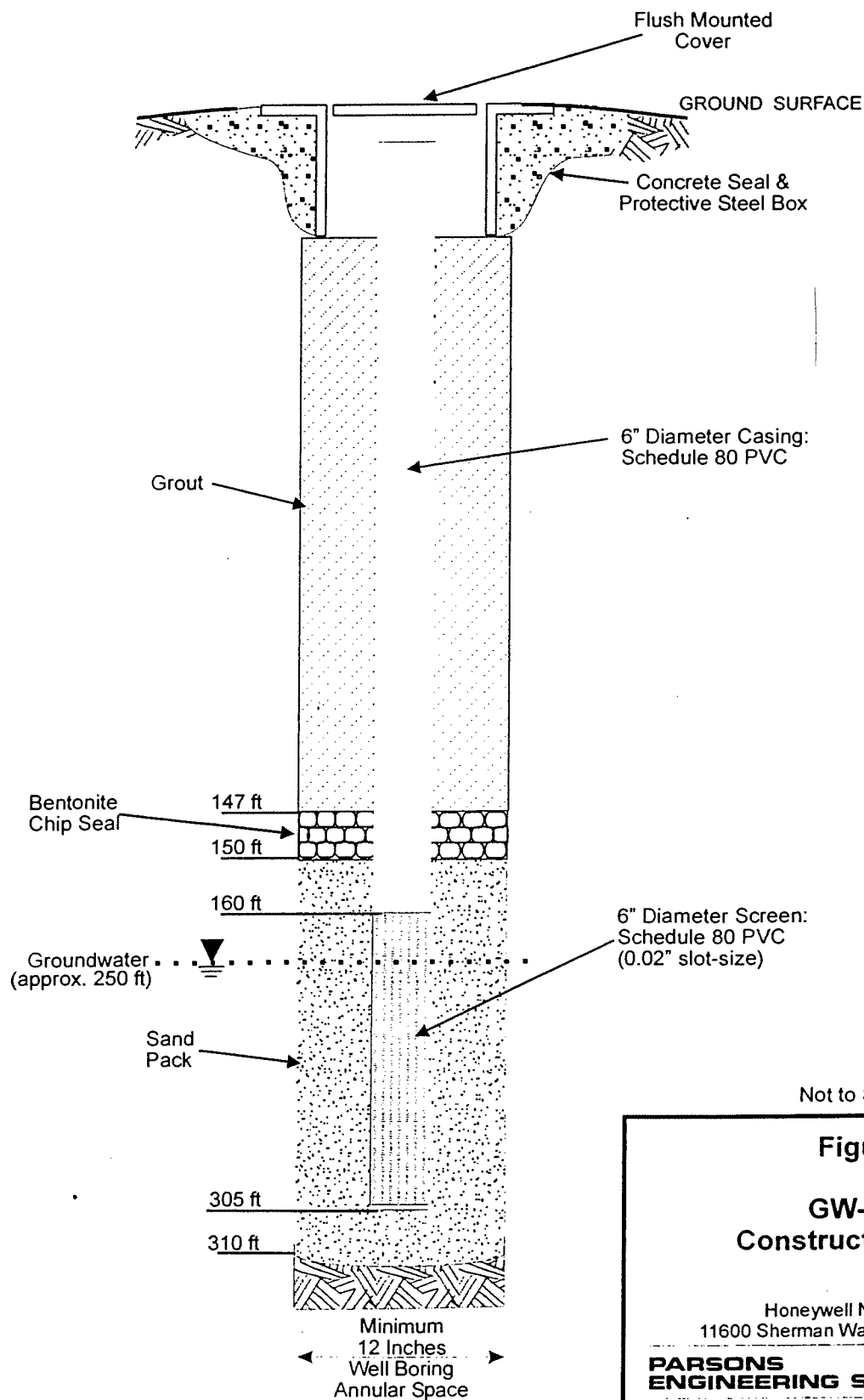
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Pasadena, CA

VERTICAL EXCAVATION
TO A DEPTH OF 15 FEET

BUILDING

GW-2





Not to Scale

Figure 4-2
GW-14 Well
Construction Diagram

Honeywell North Hollywood
11600 Sherman Way, North Hollywood, CA

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Pasadena, CA

SUMMARY OF GTI CHROMIUM DATA

APPENDIX B

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

45000066695

STLC (ca.)								
Chromium (total)		Chromium (VII)		DEPTH		DATE		SITE
mg/kg	ugl	mg/l	mg/kg					

SBNP-01	01/11/93	1.0	---	---	---	01/11/93	10.0	SBNP-01
SBNP-01	01/11/93	5.0	---	---	---	01/11/93	1.0	SBNP-02
SBNP-02	01/11/93	5.0	---	---	---	01/11/93	10.0	SBNP-02
SBNP-02	01/11/93	1.0	---	---	---	01/11/93	1.0	SBNP-03
SBNP-03	01/11/93	5.0	---	---	---	01/11/93	10.0	SBNP-03
SBNP-03	01/11/93	10.0	---	---	---	03/30/93	1.0	SBNP-001
SBNP-001	03/30/93	5.0	---	---	---	03/30/93	10.0	SBNP-002
SBNP-002	03/30/93	1.0	---	---	---	03/30/93	5.0	SBNP-002
SBNP-002	03/30/93	5.0	---	---	---	04/12/93	1.0	SBNP-003
SBNP-003	04/12/93	1.0	---	---	---	04/12/93	2.0	SBNP-004
SBNP-004	02/01/93	1.0	---	---	---	02/01/93	5.0	SBNP-004
SBNP-004	02/01/93	10.0	---	---	---	02/01/93	<1.5	SBNP-004
SBNP-004	02/01/93	6.4	---	---	---	02/01/93	9.3	SBNP-004
SBNP-004	02/01/93	7.2	---	---	---	02/01/93	6.9	SBNP-004
SBNP-004	02/01/93	5.2	---	---	---	02/01/93	2.7	SBNP-004
SBNP-004	02/01/93	14.9	---	---	---	01/25/93	17.8	SBNP-005
SBNP-005	01/25/93	5.0	---	---	---	01/25/93	15.0	SBNP-005
SBNP-005	01/25/93	10.0	---	---	---	01/25/93	6.7	SBNP-005
SBNP-005	01/25/93	20.0	---	---	---	01/25/93	7.9	SBNP-005
SBNP-006	01/27/93	1.0	---	---	---	01/27/93	3.7	SBNP-006
SBNP-006	01/27/93	5.0	---	---	---	01/27/93	2.7	SBNP-006
SBNP-006	01/27/93	10.0	---	---	---	01/27/93	4.6	SBNP-006

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= Highest of Multiple Results ??? = Duplicate Results

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

A500006696

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SITE	DATE	DEPTH	Chromium (VI) mg/kg	Chromium (VII) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
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STC (ca.)

SBP1-006	01/27/93	15.0	---	---	3.4	3400
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SBP1-006	01/27/93	20.0	---	---	3.5	3500
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SBP1-007	01/27/93	1.0	---	---	9.5	9500
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SBP1-007	01/27/93	5.0	---	---	3.0	3000
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SBP1-007	01/27/93	10.0	---	---	3.3	3300
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SBP1-007	01/27/93	15.0	---	---	2.5	2500
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SBP1-007	01/27/93	20.0	---	---	2.0	2000
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SBP1-008	03/18/93	3.0	0.226	(0.019)	10.4	10400
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SBP1-008	03/18/93	5.0	28.6	0.723	583	583000
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SBP1-008	03/18/93	10.0	0.294	(0.019)	12.5	12500
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SBP1-008	03/18/93	15.0	(0.170)	(0.009)	5.2	5200
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SBP1-008	03/18/93	20.0	1.64	0.413	23.7	23700
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SBP1-008	03/18/93	25.0	3.91	0.301	11.6	11600
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SBP1-008	03/18/93	30.0	3.54	0.280	14.1	14100
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SBP1-008	03/18/93	35.0	3.38	0.287	20.6	20600
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SBP1-008	03/18/93	40.0	3.85	0.415	14.8	14800
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SBP1-009	03/18/93	1.0	<0.2	0.046	8.4	8400
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SBP1-009	03/18/93	5.0	7.39	0.247	22.0	22000
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SBP1-009	03/18/93	10.0	<0.2	<0.02	2.6	2600
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SBP1-009	03/18/93	15.0	<0.2	<0.02	4.5	4500
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SBP1-009	03/18/93	20.0	0.463	0.038	6.2	6200
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SBP1-009	03/18/93	25.0	1.11	0.091	9.4	9400
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SBP1-009	03/18/93	30.0	<0.2	0.116	13.8	13800
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SBP1-010	03/29/93	35.0	1.41	0.100	10.8	10800
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SBP1-010	03/29/93	1.0	---	---	---	---
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SBP1-010	03/29/93	6.0	---	---	---	---
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SBP1-010	03/29/93	10.0	---	---	---	---
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SBP1-010	03/29/93	15.0	---	---	---	---
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SBP1-011	03/29/93	1.0	---	---	---	---
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SBP1-011	03/29/93	5.0	---	---	---	---
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SBP1-011	03/29/93	10.0	---	---	---	---
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SBP1-011	03/29/93	15.0	---	---	---	---
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SBP1-012	03/30/93	1.0	---	---	---	---
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SBP1-012	03/30/93	5.0	---	---	---	---
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< = Not detected at indicated reporting limit
--- = Not sampled and/or analyzed
All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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A50000000097

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-012	03/30/93	10.0	—	—	—	—
SBP1-012	03/30/93	15.0	—	—	—	—
SBP1-013	03/30/93	1.0	—	—	—	—
SBP1-013	03/30/93	5.0	—	—	—	—
SBP1-013	03/30/93	10.0	—	—	—	—
SBP1-013	03/30/93	15.0	—	—	—	—
SBP1-014	04/08/93	1.0	—	—	—	—
SBP1-014	04/08/93	5.0	—	—	—	—
SBP1-014	04/08/93	10.0	—	—	—	—
SBP1-015	04/08/93	1.0	—	—	—	—
SBP1-015	04/08/93	5.0	—	—	—	—
SBP1-015	04/08/93	10.0	—	—	—	—
SBP1-016	04/06/93	1.0	—	—	—	—
SBP1-016	04/06/93	5.0	—	—	—	—
SBP1-016	04/06/93	10.0	—	—	—	—
SBP1-016	04/06/93	15.0	—	—	—	—
SBP1-016	04/06/93	20.0	—	—	—	—
SBP1-017	04/08/93	1.0	—	—	—	—
SBP1-017	04/08/93	5.0	—	—	—	—
SBP1-017	04/08/93	10.0	—	—	—	—
SBP1-017	04/08/93	15.0	—	—	—	—
SBP1-017	04/08/93	20.0	—	—	—	—
SBP1-018	04/06/93	1.0	—	—	—	—
SBP1-018	04/06/93	5.0	—	—	—	—
SBP1-018	04/06/93	10.0	—	—	—	—
SBP1-018	04/07/93	16.0	—	—	—	—
SBP1-019	04/08/93	1.0	—	—	—	—
SBP1-019	04/08/93	5.0	—	—	—	—
SBP1-019	04/08/93	10.0	—	—	—	—
SBP1-019	04/08/93	15.0	—	—	—	—
SBP1-020	04/08/93	1.0	—	—	—	—
SBP1-020	04/08/93	5.0	—	—	—	—
SBP1-020	04/08/93	12.0	—	—	—	—
SBP1-020	04/08/93	15.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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A5000000698

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-021	01/25/93	1.0	—	—	—	—
SBP1-021	01/25/93	5.0	—	—	—	—
SBP1-021	01/25/93	10.0	—	—	—	—
SBP1-021	01/25/93	15.0	—	—	—	—
SBP1-021	01/25/93	20.0	—	—	—	—
SBP1-021	01/25/93	25.0	—	—	—	—
SBP1-021	01/25/93	30.0	—	—	—	—
SBP1-021	01/25/93	35.0	—	—	—	—
SBP1-021	01/25/93	40.0	—	—	—	—
SBP1-022	04/08/93	3.5	—	—	—	—
SBP1-022	04/08/93	5.0	—	—	—	—
SBP1-022	04/08/93	10.0	—	—	—	—
SBP1-022	04/08/93	15.0	—	—	—	—
SBP1-022	04/08/93	20.0	—	—	—	—
SBP1-023	04/09/93	3.0	—	—	—	—
SBP1-023	04/09/93	5.0	—	—	—	—
SBP1-023	04/09/93	10.0	—	—	—	—
SBP1-023	04/09/93	15.0	—	—	—	—
SBP1-023	04/09/93	20.0	—	—	—	—
SBP1-024	01/20/93	10.0	—	—	—	—
SBP1-024	01/20/93	20.0	—	—	—	—
SBP1-024	01/20/93	30.0	—	—	—	—
SBP1-024	01/20/93	35.0	—	—	—	—
SBP1-024	01/20/93	40.0	—	—	—	—
SBP1-025	01/20/93	10.0	—	—	—	—
SBP1-025	01/20/93	20.0	—	—	—	—
SBP1-025	01/20/93	30.0	—	—	—	—
SBP1-025	01/20/93	35.0	—	—	—	—
SBP1-025	01/20/93	40.0	—	—	—	—
SBP1-026	01/14/93	1.0	—	—	—	—
SBP1-026	01/14/93	5.0	—	—	—	—
SBP1-026	01/14/93	10.0	—	—	—	—
SBP1-026	01/14/93	15.0	—	—	—	—
SBP1-026	01/14/93	20.0	—	—	—	—

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= Highest of Multiple Results 777 = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000000639

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-027	01/14/93	1.0	—	—	—	—
SBP1-027	01/14/93	5.0	—	—	—	—
SBP1-027	01/14/93	10.0	—	—	—	—
SBP1-027	01/14/93	15.0	—	—	—	—
SBP1-027	01/14/93	20.0	—	—	—	—
SBP1-028	01/14/93	1.0	—	—	—	—
SBP1-028	01/14/93	5.0	—	—	—	—
SBP1-028	01/14/93	10.0	—	—	—	—
SBP1-028	01/14/93	15.0	—	—	—	—
SBP1-028	01/14/93	20.0	—	—	—	—
SBP1-029	01/14/93	1.0	—	—	—	—
SBP1-029	01/14/93	5.0	—	—	—	—
SBP1-029	01/14/93	10.0	—	—	—	—
SBP1-029	01/14/93	15.0	—	—	—	—
SBP1-029	01/14/93	20.0	—	—	—	—
SBP1-030	01/12/93	1.0	—	—	—	—
SBP1-030	01/12/93	5.0	—	—	—	—
SBP1-030	01/12/93	10.0	—	—	—	—
SBP1-030	01/12/93	15.0	—	—	—	—
SBP1-030	01/12/93	20.0	—	—	—	—
SBP1-030	01/12/93	25.0	—	—	—	—
SBP1-030	01/12/93	30.0	—	—	—	—
SBP1-030	01/12/93	35.0	—	—	—	—
SBP1-030	01/12/93	40.0	—	—	—	—
SBP1-031	01/12/93	1.0	—	—	—	—
SBP1-031	01/12/93	5.0	—	—	—	—
SBP1-031	01/12/93	10.0	—	—	—	—
SBP1-031	01/12/93	15.0	—	—	—	—
SBP1-031	01/12/93	20.0	—	—	—	—
SBP1-032	01/12/93	1.0	—	—	—	—
SBP1-032	01/12/93	5.0	—	—	—	—
SBP1-032	01/12/93	10.0	—	—	—	—
SBP1-032	01/12/93	15.0	—	—	—	—
SBP1-032	01/12/93	20.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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A53309667111

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-033	01/11/93	1.0	—	—	—	—
SBP1-033	01/11/93	5.0	—	—	—	—
SBP1-033	01/11/93	10.0	—	—	—	—
SBP1-033	01/11/93	15.0	—	—	—	—
SBP1-033	01/11/93	20.0	—	—	—	—
SBP1-033	01/11/93	25.0	—	—	—	—
SBP1-033	01/11/93	30.0	—	—	—	—
SBP1-033	01/11/93	35.0	—	—	—	—
SBP1-033	01/11/93	40.0	—	—	—	—
SBP1-033	01/11/93	45.0	—	—	—	—
SBP1-034	03/19/93	1.0	<0.2	<0.02	<1.5	<1500
SBP1-034	03/19/93	5.0	<0.2	<0.02	<1.5	<1500
SBP1-034	03/19/93	10.0	<0.2	<0.02	5.8	5800
SBP1-034	03/19/93	15.0	<0.2	<0.02	2.4	2400
SBP1-034	03/23/93	22.0	—	—	8.4	8400
SBP1-034	03/23/93	25.0	—	—	8.6	8600
SBP1-034	03/23/93	30.0	—	—	9.2	9200
SBP1-034	03/23/93	35.0	—	—	7.9	7900
SBP1-034	03/23/93	40.0	—	—	23.3	23300
SBP1-034	03/23/93	45.0	—	—	18.0	18000
SBP1-035	03/19/93	1.0	<0.2	<0.02	2.6	2600
SBP1-035	03/19/93	5.0	<0.2	<0.02	<1.5	<1500
SBP1-035	03/19/93	10.0	<0.2	<0.02	7.5	7500
SBP1-035	03/19/93	15.0	<0.2	<0.02	22.8	22800
SBP1-035	03/19/93	20.0	—	—	5.5	5500
SBP1-035	03/19/93	25.0	<0.2	0.307	17.8	17800
SBP1-035	03/19/93	30.0	2.60	0.243	7.0	7000
SBP1-035	03/19/93	35.0	2.11	0.187	15.7	15700
SBP1-035	03/19/93	40.0	4.36	0.316	3.3	3300
SBP1-036	03/19/93	5.0	62.8	0.342	1140	1140000
SBP1-036	03/19/93	10.0	51.3	0.039	572	572000
SBP1-036	03/19/93	15.0	0.904	0.082	642	642000
SBP1-036	03/19/93	20.0	44.7	0.932	887	887000
SBP1-036	03/19/93	25.0	17.9	0.440	332	332000

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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A5000008901

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP1-036	03/19/93	30.0	20.3	0.850	477	477000
SBP1-036	03/19/93	35.0	23.1	0.783	671	671000
SBP1-036	03/19/93	40.0	82.0	0.905	233	233000
SBP1-036B	07/13/93	40.0	14	0.46	370	370000
SBP1-036B	07/13/93	45.0	8.7	0.78	180	180000
SBP1-036B	07/13/93	50.0	9.6	0.49	110	110000
SBP1-037	03/19/93	1.0	<0.2	0.032	21.8	21800
SBP1-037	03/19/93	5.0	33.7	3.40	1700	1700000
SBP1-037	03/19/93	10.0	6.23	0.571	212	212000
SBP1-037	03/19/93	15.0	<0.2	0.528	420	420000
SBP1-037	03/19/93	20.0	0.429	0.044	13.9	13900
SBP1-037	03/19/93	25.0	<0.2	<0.02	6.7	6700
SBP1-037	03/19/93	30.0	3.16	0.352	9.1	9100
SBP1-037	03/19/93	35.0	1.88	0.191	<1.5	<1500
SBP1-037	03/19/93	40.0	3.88	0.374	4.0	4000
SBP1-038	03/19/93	1.0	<0.2	<0.02	19.6	19600
SBP1-038	03/19/93	5.0	<0.2	<0.02	7.5	7500
SBP1-038	03/19/93	10.0	53.1	6.08	92.5	92500
SBP1-038	03/19/93	15.0	10.1	1.69	23.3	23300
SBP1-038	03/19/93	20.0	3.50	0.327	42.9	42900
SBP1-038	03/19/93	25.0	32.8	4.36	53.8	53800
SBP1-038	03/19/93	30.0	50.2	5.23	78.2	78200
SBP1-038	03/19/93	35.0	45.0	6.41	77.9	77900
SBP1-038	03/19/93	40.0	79.1	8.79	169	169000
SBP1-038B	07/13/93	40.0	120	5.3	390	390000
SBP1-038B	07/13/93	45.0	77	11	180	180000
SBP1-038B	07/13/93	50.0	43	3.1	96	96000
SBP1-038B	07/13/93	55.0	51	4.7	220	220000
SBP1-039A	03/19/93	1.0	<0.2	3.91	4.8	4800
SBP1-039A	03/19/93	5.0	23.2	2.82	47.8	47800
S8P1-039A	03/19/93	10.0	27.5	3.39	59.4	59400
SBP1-039A	03/19/93	15.0	16.8	2.14	30.6	30600
SBP1-039A	03/19/93	20.0	12.5	1.94	20.2	20200
SBP1-039A	03/19/93	25.0	26.3	2.91	40.3	40300

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000066702

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-039A	03/19/93	30.0	23.2	2.45	43.0	43000
SBP1-039A	03/19/93	35.0	8.95	0.888	12.1	12100
SBP1-039A	03/19/93	40.0	9.45	1.04	18.7	18700
SBP1-039B	03/18/93	1.0	<0.2	<0.02	10.8	10800
SBP1-039B	03/18/93	5.0	0.554	0.043	14.3	14300
SBP1-039B	03/18/93	10.0	(0.113)	(0.010)	10.4	10400
SBP1-039B	03/18/93	15.0	(0.034)	(0.006)	1.7	1700
SBP1-039B	03/18/93	20.0	3.84	0.372	6.9	6900
SBP1-039B	03/18/93	25.0	<0.2	0.219	9.5	9500
SBP1-039B	03/18/93	30.0	<0.2	0.456	12.9	12900
SBP1-039B	03/18/93	35.0	<0.2	0.225	11.6	11600
SBP1-039B	03/18/93	40.0	1.18	0.228	4.7	4700
SBP1-040	03/19/93	1.0	<0.2	0.026	5.7	5700
SBP1-040	03/19/93	5.0	0.339	0.029	6.2	6200
SBP1-040	03/19/93	10.0	<0.2	0.874	6.1	6100
SBP1-040	03/19/93	15.0	4.45	0.606	4.8	4800
SBP1-040	03/19/93	20.0	8.50	1.23	10.0	10000
SBP1-040	03/19/93	25.0	5.94	0.798	8.9	8900
SBP1-040	03/19/93	30.0	3.24	0.440	3.6	3600
SBP1-040	03/19/93	35.0	4.21	0.405	7.2	7200
SBP1-040	03/19/93	40.0	4.41	0.695	13.3	13300
SBP1-041	03/18/93	1.0	<0.2	<0.02	9.2	9200
SBP1-041	03/18/93	6.0	<0.2	0.035	16.7	16700
SBP1-041	03/18/93	10.0	0.508	0.034	13.0	13000
SBP1-041	03/18/93	15.0	0.881	0.103	6.6	6600
SBP1-041	03/18/93	20.0	<0.2	0.109	6.0	6000
SBP1-041	03/18/93	25.0	2.20	0.209	9.6	9600
SBP1-041	03/18/93	30.0	2.11	0.152	7.2	7200
SBP1-041	03/18/93	35.0	3.91	0.286	7.6	7600
SBP1-041	03/18/93	40.0	5.33	0.522	8.0	8000
SBP1-042	04/05/93	1.0	—	—	—	—
SBP1-042	04/05/93	5.0	—	—	—	—
SBP1-042	04/05/93	10.0	—	—	—	—
SBP1-043	04/05/93	1.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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STLC (Ca.)

AS0000060703

SITE	DATE	DEPTH	Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-043	04/05/93	5.0	—	—	—	—
SBP1-043	04/05/93	10.0	—	—	—	—
SBP1-044	04/05/93	1.0	—	—	—	—
SBP1-044	04/05/93	5.0	—	—	—	—
SBP1-044	04/05/93	10.0	—	—	—	—
SBP1-045	04/08/93	1.0	—	—	—	—
SBP1-045	04/08/93	5.0	—	—	—	—
SBP1-045	04/08/93	10.0	—	—	—	—
SBP1-046	01/21/93	1.0	—	—	—	—
SBP1-046	01/21/93	3.0	—	—	—	—
SBP1-046	01/21/93	8.0	—	—	—	—
SBP1-046	01/21/93	14.0	—	—	—	—
SBP1-047	01/20/93	1.0	—	—	—	—
SBP1-047	01/20/93	3.0	—	—	—	—
SBP1-047	01/20/93	8.0	—	—	—	—
SBP1-047	01/20/93	13.0	—	—	—	—
SBP1-047	01/20/93	18.0	—	—	—	—
SBP1-047	01/20/93	23.0	—	—	—	—
SBP1-047	01/20/93	28.0	—	—	—	—
SBP1-048	04/05/93	1.0	—	—	—	—
SBP1-048	04/05/93	5.0	—	—	—	—
SBP1-048	04/05/93	10.0	—	—	—	—
SBP1-048	04/05/93	15.0	—	—	—	—
SBP1-048	04/05/93	20.0	—	—	—	—
SBP1-049	04/05/93	1.0	—	—	—	—
SBP1-049	04/05/93	10.0	—	—	—	—
SBP1-049	04/05/93	15.0	—	—	—	—
SBP1-049	04/05/93	20.0	—	—	—	—
SBP1-050	03/23/93	2.0	—	—	—	—
SBP1-050	03/23/93	5.0	—	—	—	—
SBP1-050	03/23/93	10.0	—	—	—	—
SBP1-051	03/23/93	2.5	—	—	—	—
SBP1-051	03/23/93	5.0	—	—	—	—
SBP1-051	03/23/93	10.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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A5000600704

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-052	04/08/93	1.0	—	—	10.5	10500
SBP1-052	04/08/93	5.0	—	—	11.5	11500
SBP1-052	04/08/93	10.0	—	—	10.5	10500
SBP1-053	04/07/93	1.0	—	—	—	—
SBP1-053	04/07/93	5.0	—	—	—	—
SBP1-053	04/07/93	10.0	—	—	—	—
SBP1-054	01/29/93	1.0	—	—	—	—
SBP1-054	01/29/93	5.0	—	—	—	—
SBP1-054	01/29/93	10.0	—	—	—	—
SBP1-054	01/29/93	15.0	—	—	—	—
SBP1-054	01/29/93	20.0	—	—	—	—
SBP1-054	01/29/93	25.0	—	—	—	—
SBP1-055	03/22/93	1.0	—	—	12.1	12100
SBP1-055	03/22/93	5.0	—	—	10.7	10700
SBP1-055	03/22/93	10.0	—	—	13.5	13500
SBP1-056	03/29/93	1.0	—	—	6.0	6000
SBP1-056	03/29/93	5.0	—	—	6.4	6400
SBP1-056	03/29/93	10.0	—	—	7.7	7700
SBP1-056	03/29/93	15.0	—	—	7.8	7800
SBP1-056	03/29/93	20.0	—	—	4.3	4300
SBP1-056	03/29/93	26.0	—	—	4.5	4500
SBP1-056	03/29/93	30.0	—	—	5.3	5300
SBP1-056	03/29/93	35.0	—	—	3.0	3000
SBP1-056	03/29/93	40.0	—	—	7.2	7200
SBP1-057A	04/12/93	1.0	—	—	7.9	7900
SBP1-057A	04/12/93	5.0	—	—	7.3	7300
SBP1-058	04/12/93	1.5	—	—	5.5	5500
SBP1-059	03/24/93	1.0	—	—	7.4	7400
SBP1-059	03/24/93	5.0	—	—	10.1	10100
SBP1-059	03/24/93	10.0	—	—	5.4	5400
SBP1-060	01/27/93	1.0	—	—	7.4	7400
SBP1-060	01/28/93	5.0	—	—	3.8	3800
SBP1-060	01/28/93	10.0	—	—	3.3	3300
SBP1-060	01/28/93	15.0	—	—	2.9	2900

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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A5000000705

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total)	Chromium (total)
			Chromium (VI) mg/kg	Chromium (VI) mg/l	mg/kg	ug/l
SBP1-060	01/28/93	20.0	—	—	4.0	4000
SBP1-061	01/25/93	1.0	—	—	13.8	13800
SBP1-061	01/25/93	5.0	—	—	6.1	6100
SBP1-061	01/25/93	10.0	—	—	4.3	4300
SBP1-061	01/25/93	15.0	—	—	5.1	5100
SBP1-061	01/25/93	20.0	—	—	6.3	6300
SBP1-062	01/28/93	1.0	—	—	11.5	11500
SBP1-062	01/28/93	5.0	—	—	3.0	3000
SBP1-062	01/28/93	10.0	—	—	3.2	3200
SBP1-062	01/28/93	15.0	—	—	4.5	4500
SBP1-062	01/28/93	20.0	—	—	3.3	3300
SBP1-063	01/28/93	1.0	—	—	17.5	17500
SBP1-063	01/28/93	5.0	—	—	4.1	4100
SBP1-063	01/28/93	10.0	—	—	4.9	4900
SBP1-063	01/28/93	15.0	—	—	5.7	5700
SBP1-063	01/28/93	20.0	—	—	5.7	5700
SBP1-064	04/06/93	1.0	—	—	—	—
SBP1-064	04/06/93	5.0	—	—	—	—
SBP1-064	04/06/93	17.0	—	—	—	—
SBP1-064	04/06/93	21.5	—	—	—	—
SBP1-064	04/06/93	26.0	—	—	—	—
SBP1-064	04/06/93	30.0	—	—	—	—
SBP1-064	04/06/93	35.0	—	—	—	—
SBP1-064	04/06/93	40.0	—	—	—	—
SBP1-065	01/29/93	1.0	—	—	—	—
SBP1-065	01/29/93	5.0	—	—	—	—
SBP1-065	01/29/93	10.0	—	—	—	—
SBP1-065	01/29/93	15.0	—	—	—	—
SBP1-065	01/29/93	20.0	—	—	—	—
SBP1-065	01/29/93	25.0	—	—	—	—
SBP1-066	06/30/93	20.0	—	—	—	—
SBP1-066	06/30/93	25.0	—	—	—	—
SBP1-066	06/30/93	30.0	—	—	—	—
SBP1-066	06/30/93	35.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/97

AS0000000706

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-066	06/30/93	40.0	—	—	—	—
SBP1-066	06/30/93	45.0	—	—	—	—
SBP1-066	06/30/93	50.0	—	—	—	—
SBP1-066	06/30/93	55.0	—	—	—	—
SBP1-067	07/08/93	1.0	—	—	—	—
SBP1-067	07/08/93	5.0	—	—	—	—
SBP1-067	07/08/93	10.0	—	—	—	—
SBP1-067	07/08/93	15.0	—	—	—	—
SBP1-067	07/08/93	20.0	—	—	—	—
SBP1-067	07/08/93	25.0	—	—	—	—
SBP1-067	07/08/93	30.0	—	—	—	—
SBP1-067	07/08/93	35.0	—	—	—	—
SBP1-067	07/08/93	40.0	—	—	—	—
SBP1-068	07/09/93	1.0	—	—	—	—
SBP1-068	07/09/93	5.0	—	—	—	—
SBP1-068	07/09/93	10.0	—	—	—	—
SBP1-068	07/09/93	15.0	—	—	—	—
SBP1-068	07/09/93	20.0	—	—	—	—
SBP1-068	07/09/93	25.0	—	—	—	—
SBP1-068	07/09/93	30.0	—	—	—	—
SBP1-068	07/09/93	35.0	—	—	—	—
SBP1-068	07/09/93	40.0	—	—	—	—
SBP1-069	06/30/93	1.0	—	—	—	—
SBP1-069	06/30/93	5.0	—	—	—	—
SBP1-069	06/30/93	10.0	—	—	—	—
SBP1-069	06/30/93	15.0	—	—	—	—
SBP1-069	06/30/93	20.0	—	—	—	—
SBP1-069	06/30/93	25.0	—	—	—	—
SBP1-069	06/30/93	30.0	—	—	—	—
SBP1-069	06/30/93	35.0	—	—	—	—
SBP1-069	06/30/93	40.0	—	—	—	—
SBP1-070	07/12/93	1.0	—	—	—	—
SBP1-070	07/12/93	5.0	—	—	—	—
SBP1-070	07/12/93	10.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

AS0000068707

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP1-070	07/12/93	15.0	—	—	—	—
SBP1-070	07/12/93	20.0	—	—	—	—
SBP1-071	07/12/93	1.0	—	—	—	—
SBP1-071	07/12/93	5.0	—	—	—	—
SBP1-071	07/12/93	10.0	—	—	—	—
SBP1-071	07/12/93	15.0	—	—	—	—
SBP1-071	07/12/93	20.0	—	—	—	—
SBP1-072	07/12/93	1.0	—	—	—	—
SBP1-072	07/12/93	5.0	—	—	—	—
SBP1-072	07/12/93	10.0	—	—	—	—
SBP1-072	07/12/93	15.0	—	—	—	—
SBP1-072	07/12/93	20.0	—	—	—	—
SBP1-073	07/13/93	5.0	120	16	250	250000
SBP1-073	07/13/93	10.0	170	16	340	340000
SBP1-073	07/13/93	15.0	100	13	140	140000
SBP1-073	07/13/93	20.0	370	21	1000	1000000
SBP1-073	07/13/93	25.0	220	19	380	380000
SBP1-073	07/13/93	30.0	220	21	220	220000
SBP1-073	07/13/93	35.0	170	4.3	790	790000
SBP1-073	07/13/93	40.0	220	18	240	240000
SBP1-073	07/13/93	45.0	82	6.5	130	130000
SBP1-073	07/13/93	50.0	49	0.40	60	60000
SBP1-075	07/13/93	5.0	36	4.0	87	87000
SBP1-075	07/13/93	10.0	17	2.4	47	47000
SBP1-075	07/13/93	15.0	21	2.3	35	35000
SBP1-075	07/13/93	20.0	6.1	0.41	16	16000
SBP1-075	07/13/93	25.0	6.6	1.1	22	22000
SBP1-075	07/13/93	30.0	7.7	1.2	20	20000
SBP1-075	07/13/93	35.0	2.5	0.090	12	12000
SBP1-075	07/13/93	40.0	9.1	0.80	16	16000
SBP1-075	07/13/93	45.0	4.7	0.80	21	21000
SBP1-075	07/13/93	50.0	20	2.0	27	27000
SBP1-076	07/06/93	1.0	—	—	—	—
SBP1-076	07/06/93	5.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000066708

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-076	07/06/93	10.0	—	—	—	—
SBP1-076	07/06/93	15.0	—	—	—	—
SBP1-076	07/06/93	20.0	—	—	—	—
SBP1-076	07/06/93	25.0	—	—	—	—
SBP1-076	07/06/93	30.0	—	—	—	—
SBP1-076	07/06/93	35.0	—	—	—	—
SBP1-076	07/06/93	40.0	—	—	—	—
SBP1-076	07/06/93	45.0	—	—	—	—
SBP1-077	07/06/93	1.0	—	—	—	—
SBP1-077	07/06/93	5.0	—	—	—	—
SBP1-077	07/06/93	10.0	—	—	—	—
SBP1-077	07/06/93	15.0	—	—	—	—
SBP1-077	07/06/93	20.0	—	—	—	—
SBP1-077	07/06/93	25.0	—	—	—	—
SBP1-077	07/06/93	30.0	—	—	—	—
SBP1-077	07/06/93	35.0	—	—	—	—
SBP1-077	07/06/93	40.0	—	—	—	—
SBP1-078	07/06/93	1.0	—	—	—	—
SBP1-078	07/06/93	5.0	—	—	—	—
SBP1-078	07/06/93	10.0	—	—	—	—
SBP1-078	07/06/93	15.0	—	—	—	—
SBP1-078	07/06/93	20.0	—	—	—	—
SBP1-078	07/06/93	25.0	—	—	—	—
SBP1-078	07/06/93	30.0	—	—	—	—
SBP1-078	07/06/93	35.0	—	—	—	—
SBP1-078	07/06/93	40.0	—	—	—	—
SBP1-079	07/07/93	1.0	—	—	—	—
SBP1-079	07/07/93	5.0	—	—	—	—
SBP1-079	07/07/93	12.0	—	—	—	—
SBP1-079	07/07/93	15.0	—	—	—	—
SBP1-079	07/07/93	20.0	—	—	—	—
SBP1-079	07/07/93	25.0	—	—	—	—
SBP1-079	07/07/93	30.0	—	—	—	—
SBP1-079	07/07/93	35.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000063709

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-079	07/07/93	40.0	—	—	—	—
SBP1-080	07/01/93	1.0	—	—	—	—
SBP1-080	07/01/93	5.0	—	—	—	—
SBP1-080	07/01/93	10.0	—	—	—	—
SBP1-081	07/01/93	1.0	—	—	—	—
SBP1-081	07/01/93	5.0	—	—	—	—
SBP1-081	07/01/93	10.0	—	—	—	—
SBP1-082	07/01/93	1.0	—	—	—	—
SBP1-082	07/01/93	5.0	—	—	—	—
SBP1-082	07/01/93	10.0	—	—	—	—
SBP1-083	07/01/93	1.0	—	—	—	—
SBP1-083	07/01/93	5.0	—	—	—	—
SBP1-083	07/01/93	10.0	—	—	—	—
SBP1-084	07/01/93	1.0	—	—	—	—
SBP1-084	07/01/93	5.0	—	—	—	—
SBP1-084	07/01/93	10.0	—	—	—	—
SBP1-085	07/01/93	1.0	—	—	—	—
SBP1-085	07/01/93	5.0	—	—	—	—
SBP1-085	07/01/93	10.0	—	—	—	—
SBP1-085	07/01/93	15.0	—	—	—	—
SBP1-086	07/01/93	1.0	—	—	—	—
SBP1-086	07/01/93	5.0	—	—	—	—
SBP1-086	07/01/93	10.0	—	—	—	—
SBP1-087	07/07/93	1.0	—	—	—	—
SBP1-087	07/07/93	5.0	—	—	—	—
SBP1-087	07/07/93	10.0	—	—	—	—
SBP1-088	07/02/93	1.0	—	—	—	—
SBP1-088	07/02/93	5.0	—	—	—	—
SBP1-088	07/02/93	10.0	—	—	—	—
SBP1-089	07/07/93	1.0	—	—	—	—
SBP1-089	07/07/93	5.0	—	—	—	—
SBP1-089	07/07/93	10.0	—	—	—	—
SBP1-090	07/07/93	1.0	—	—	—	—
SBP1-090	07/07/93	5.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

A5000066710

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-090	07/07/93	10.0	—	—	—	—
SBP1-090	07/07/93	15.0	—	—	—	—
SBP1-090	07/07/93	20.0	—	—	—	—
SBP1-090	07/07/93	25.0	—	—	—	—
SBP1-090	07/07/93	30.0	—	—	—	—
SBP1-091	07/02/93	1.0	—	—	—	—
SBP1-091	07/02/93	5.0	—	—	—	—
SBP1-091	07/02/93	10.0	—	—	—	—
SBP1-091	07/02/93	15.0	—	—	—	—
SBP1-091	07/02/93	20.0	—	—	—	—
SBP1-091	07/02/93	25.0	—	—	—	—
SBP1-091	07/02/93	30.0	—	—	—	—
SBP1-092	07/02/93	1.0	—	—	—	—
SBP1-092	07/02/93	5.0	—	—	—	—
SBP1-092	07/02/93	10.0	—	—	—	—
SBP1-092	07/02/93	15.0	—	—	—	—
SBP1-092	07/02/93	20.0	—	—	—	—
SBP1-092	07/02/93	25.0	—	—	—	—
SBP1-092	07/02/93	30.0	—	—	—	—
SBP1-093	07/02/93	1.0	—	—	—	—
SBP1-093	07/02/93	5.0	—	—	—	—
SBP1-093	07/02/93	10.0	—	—	—	—
SBP1-093	07/02/93	15.0	—	—	—	—
SBP1-094	07/02/93	10.0	—	—	—	—
SBP1-094	07/02/93	15.0	—	—	—	—
SBP1-094	07/02/93	20.0	—	—	—	—
SBP1-094	07/02/93	25.0	—	—	—	—
SBP1-094	07/02/93	30.0	—	—	—	—
SBP1-095	07/02/93	1.0	—	—	—	—
SBP1-095	07/02/93	5.0	—	—	—	—
SBP1-095	07/02/93	10.0	—	—	—	—
SBP1-095	07/02/93	15.0	—	—	—	—
SBP1-095	07/02/93	20.0	—	—	—	—
SBP1-095	07/02/93	25.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000066711

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP1-095	07/02/93	30.0	—	—	—	—
SBP1-096	07/02/93	1.0	—	—	—	—
SBP1-096	07/02/93	5.0	—	—	—	—
SBP1-096	07/02/93	10.0	—	—	—	—
SBP1-096	07/02/93	15.0	—	—	—	—
SBP1-096	07/02/93	20.0	—	—	—	—
SBP1-096	07/02/93	25.0	—	—	—	—
SBP1-096	07/02/93	30.0	—	—	—	—
SBP1-097	07/02/93	1.0	—	—	—	—
SBP1-097	07/02/93	5.0	—	—	—	—
SBP1-097	07/02/93	10.0	—	—	—	—
SBP1-097	07/02/93	15.0	—	—	—	—
SBP1-097	07/02/93	20.0	—	—	—	—
SBP1-097	07/02/93	25.0	—	—	—	—
SBP1-097	07/02/93	30.0	—	—	—	—
SBP1-098	07/08/93	20.0	—	—	—	—
SBP1-098	07/08/93	25.0	—	—	—	—
SBP1-098	07/08/93	30.0	—	—	—	—
SBP1-099	07/08/93	20.0	—	—	—	—
SBP1-099	07/08/93	25.0	—	—	—	—
SBP1-099	07/08/93	30.0	—	—	—	—
SBP1-100	07/12/93	15.0	—	—	—	—
SBP1-100	07/12/93	20.0	—	—	—	—
SBP1-100	07/12/93	25.0	—	—	—	—
SBP1-100	07/12/93	30.0	—	—	—	—
SBP1-101	07/12/93	15.0	—	—	—	—
SBP1-101	07/12/93	20.0	—	—	—	—
SBP1-101	07/12/93	25.0	—	—	—	—
SBP1-101	07/12/93	30.0	—	—	—	—
SBP1-102	07/12/93	15.0	—	—	—	—
SBP1-102	07/12/93	20.0	—	—	—	—
SBP1-102	07/12/93	25.0	—	—	—	—
SBP1-102	07/12/93	31.0	—	—	—	—
SBP2-01	01/21/93	1.0	—	—	2.4	2400

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless noted
= Highest of Multiple Results 777 = Duplicate Results

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

AS0000066712

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP2-01	01/21/93	5.0	—	—	3.4	3400
SBP2-01	01/21/93	10.0	—	—	3.8	3800
SBP2-02	01/21/93	1.0	—	—	3.0	3000
SBP2-02	01/21/93	5.0	—	—	1.9	1900
SBP2-02	01/21/93	10.0	—	—	1.9	1900
SBP2-03	03/17/93	1.0	—	—	—	—
SBP2-03	03/17/93	5.0	—	—	—	—
SBP2-03	03/17/93	10.0	—	—	—	—
SBP2-04	03/17/93	1.0	—	—	—	—
SBP2-04	03/17/93	5.0	—	—	—	—
SBP2-04	03/17/93	10.0	—	—	—	—
SBP2-05	01/22/93	1.0	—	—	—	—
SBP2-05	01/22/93	5.0	—	—	—	—
SBP2-05	01/22/93	10.0	—	—	—	—
SBP2-06	03/15/93	1.0	—	—	1.8	1800
SBP2-06	03/15/93	5.0	—	—	2.3	2300
SBP2-06	03/15/93	10.0	—	—	2.0	2000
SBP2-07	03/15/93	1.0	—	—	3.4	3400
SBP2-07	03/15/93	5.0	—	—	5.7	5700
SBP2-07	03/15/93	10.0	—	—	2.2	2200
SBP2-08	03/15/93	1.0	—	—	—	—
SBP2-08	03/15/93	5.0	—	—	—	—
SBP2-08	03/15/93	10.0	—	—	—	—
SBP2-09	03/15/93	1.0	—	—	—	—
SBP2-09	03/15/93	5.0	—	—	—	—
SBP2-09	03/15/93	10.0	—	—	—	—
SBP2-12	03/22/93	1.0	—	—	—	—
SBP2-12	03/22/93	5.0	—	—	—	—
SBP2-12	03/22/93	10.0	—	—	—	—
SBP2-12	03/22/93	15.0	—	—	—	—
SBP2-12	03/22/93	20.0	—	—	—	—
SBP2-12	03/22/93	25.0	—	—	—	—
SBP2-12	03/22/93	30.0	—	—	—	—
SBP2-12	03/22/93	35.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

001506

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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45000066713

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP2-12	03/22/93	40.0	—	—	—	—
SBP2-12	03/22/93	45.0	—	—	—	—
SBP2-12	03/22/93	50.0	—	—	—	—
SBP2-12	03/22/93	55.0	—	—	—	—
SBP2-13	02/02/93	1.0	—	—	—	—
SBP2-13	02/02/93	5.0	—	—	—	—
SBP2-13	02/02/93	10.0	—	—	—	—
SBP2-13	02/02/93	15.0	—	—	—	—
SBP2-13	02/02/93	20.0	—	—	—	—
SBP2-13	02/02/93	27.0	—	—	—	—
SBP2-13	02/02/93	30.0	—	—	—	—
SBP2-13	02/02/93	35.0	—	—	—	—
SBP2-13	02/02/93	40.0	—	—	—	—
SBP2-13	02/02/93	45.0	—	—	—	—
SBP2-13	02/02/93	52.5	—	—	—	—
SBP2-13	02/02/93	55.0	—	—	—	—
SBP2-14	01/22/93	1.0	—	—	3.4	3400
SBP2-14	01/22/93	5.0	—	—	1.5	1500
SBP2-14	01/22/93	10.0	—	—	<1.5	<1500
SBP2-14	01/22/93	15.0	—	—	2.0	2000
SBP2-14	01/22/93	20.0	—	—	<1.5	<1500
SBP2-14	01/22/93	25.0	—	—	25.5	25500
SBP2-14	01/22/93	30.0	—	—	<1.5	<1500
SBP2-14	01/22/93	35.0	—	—	<1.5	<1500
SBP2-14	01/22/93	40.0	—	—	<1.5	<1500
SBP2-14	01/22/93	45.0	—	—	<1.5	<1500
SBP2-14	01/22/93	50.0	—	—	<1.5	<1500
SBP2-14	01/22/93	55.0	—	—	6.6	6600
SBP2-15	03/15/93	1.0	—	—	6.9	6900
SBP2-15	03/15/93	5.0	—	—	<1.5	<1500
SBP2-15	03/15/93	10.0	—	—	3.4	3400
SBP2-16	03/16/93	1.0	—	—	7.5	7500
SBP2-16	03/16/93	5.0	—	—	2.0	2000
SBP2-16	03/16/93	10.0	—	—	12.0	12000

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001501

AS000006714

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VII) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP2-16	03/16/93	15.0	—	—	1.8	1800
SBP2-16	03/16/93	20.0	—	—	1.8	1800
SBP2-16	03/16/93	25.0	—	—	2.8	2800
SBP2-16	03/16/93	32.0	—	—	6.4	6400
SBP2-16	03/16/93	35.0	—	—	7.4	7400
SBP2-16	03/16/93	40.0	—	—	(1.4)	(1400)
SBP2-16	03/16/93	45.0	—	—	2.5	2500
SBP2-16	03/16/93	50.0	—	—	11.9	11900
SBP2-16	03/16/93	55.0	—	—	14.5	14500
SBP2-17	01/28/93	1.0	—	—	45.3	45300
SBP2-17	01/28/93	5.0	—	—	7.6	7600
SBP2-17	01/28/93	10.0	—	—	4.3	4300
SBP2-18	03/17/93	1.0	—	—	95.2	95200
SBP2-18	03/17/93	5.0	—	—	59.4	59400
SBP2-18	03/17/93	10.0	—	—	59.7	59700
SBP2-18	03/17/93	15.0	—	—	15.6	15600
SBP2-18	03/17/93	20.0	—	—	12.1	12100
SBP2-19	03/17/93	1.0	—	—	37.5	37500
SBP2-19	03/17/93	5.0	—	—	121	121000
SBP2-19	03/17/93	10.0	—	—	7.7	7700
SBP2-19	03/17/93	15.0	—	—	14.2	14200
SBP2-19	03/17/93	20.0	—	—	7.2	7200
SBP2-20	01/22/93	3.5	—	—	12.0	12000
SBP2-20	01/22/93	7.0	—	—	<1.5	<1500
SBP2-20	01/22/93	12.0	—	—	<1.5	<1500
SBP2-20	01/22/93	17.0	—	—	7.6	7600
SBP2-20	01/22/93	22.0	—	—	1.6	1600
SBP2-21	02/01/93	3.0	—	—	16.0	16000
SBP2-21	02/01/93	7.0	—	—	<1.5	<1500
SBP2-21	02/01/93	12.0	—	—	5.6	5600
SBP2-21	02/01/93	17.0	—	—	20.5	20500
SBP2-21	02/01/93	22.0	—	—	6.0	6000
SBP2-23A	03/17/93	1.0	—	—	12.9	12900
SBP2-23A	03/17/93	5.0	—	—	22.2	22200

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001502

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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A5000000715

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VII) mg/l		
SBP2-23A	03/17/93	10.0	—	—	7.0	7000
SBP2-23A	03/17/93	15.0	—	—	<9.9	<9900
SBP2-23A	03/17/93	20.0	—	—	5.8	5800
SBP2-23B	03/17/93	1.0	—	—	23.5	23500
SBP2-23B	03/17/93	5.0	—	—	202	202000
SBP2-23B	03/17/93	10.0	—	—	16.0	16000
SBP2-23B	03/17/93	15.0	—	—	37.4	37400
SBP2-23B	03/17/93	20.0	—	—	6.4	6400
SBP2-24	03/18/93	1.0	—	—	—	—
SBP2-24	03/18/93	5.0	—	—	—	—
SBP2-24	03/18/93	10.0	—	—	—	—
SBP2-25	07/07/93	1.0	<0.25	—	16	16000
SBP2-25	07/07/93	5.0	<0.25	—	2.8	2800
SBP2-25	07/07/93	10.0	<0.25	—	4.4	4400
SBP2-25	07/07/93	15.0	<0.25	—	5.8	5800
SBP2-25	07/07/93	20.0	<0.25	—	9.0	9000
SBP2-26	07/07/93	1.0	<0.25	—	20	20000
SBP2-26	07/07/93	5.0	<0.25	—	5.4	5400
SBP2-26	07/07/93	10.0	<0.25	—	4.9	4900
SBP2-26	07/07/93	15.0	<0.25	—	5.0	5000
SBP2-26	07/07/93	20.0	<0.25	—	2.3	2300
SBP2-27	07/07/93	1.0	<0.25	—	63	63000
SBP2-27	07/07/93	5.0	0.70	—	3.7	3700
SBP2-27	07/07/93	10.0	0.34	—	5.8	5800
SBP2-27	07/07/93	15.0	0.89	—	17	17000
SBP2-27	07/07/93	20.0	0.90	—	11	11000
SBP2-28	07/08/93	1.0	—	—	—	—
SBP2-28	07/08/93	5.0	—	—	—	—
SBP2-28	07/08/93	10.0	—	—	—	—
SBP2-28	07/08/93	15.0	—	—	—	—
SBP2-29	07/08/93	1.0	—	—	—	—
SBP2-29	07/08/93	5.0	—	—	—	—
SBP2-29	07/08/93	10.0	—	—	—	—
SBP2-29	07/08/93	15.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000068716

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP2-30	07/08/93	1.0	—	—	—	—
SBP2-30	07/08/93	5.0	—	—	—	—
SBP2-30	07/08/93	10.0	—	—	—	—
SBP2-30	07/08/93	15.0	—	—	—	—
SBSP-01	01/11/93	1.0	—	—	—	—
SBSP-01	01/11/93	5.0	—	—	—	—
SBSP-01	01/11/93	10.0	—	—	—	—
SBSP-02	01/11/93	1.0	—	—	—	—
SBSP-02	01/11/93	5.0	—	—	—	—
SBSP-02	01/11/93	10.0	—	—	—	—
SBSP-03	01/11/93	1.0	—	—	—	—
SBSP-03	01/11/93	5.0	—	—	—	—
SBSP-03	01/11/93	10.0	—	—	—	—
SBSW-01	01/26/93	1.0	—	—	—	—
SBSW-01	01/26/93	5.0	—	—	—	—
SBSW-01	01/26/93	10.0	—	—	—	—
SBSW-02	01/21/93	1.0	—	—	—	—
SBSW-02	01/21/93	5.0	—	—	—	—
SBSW-02	01/21/93	10.0	—	—	—	—
SBSW-03	01/21/93	0.0	—	—	—	—
SBSW-03	01/21/93	1.0	—	—	—	—
SBSW-03	01/21/93	5.0	—	—	—	—
SBSW-03	01/21/93	10.0	—	—	—	—
SBSW-04	01/26/93	1.0	—	—	—	—
SBSW-04	01/26/93	5.0	—	—	—	—
SBSW-04	01/26/93	10.0	—	—	—	—
SBSW-06	03/24/93	1.0	—	—	—	—
SBSW-06	03/24/93	5.0	—	—	—	—
SBSW-06	03/24/93	10.0	—	—	—	—
SBSW-07	03/24/93	1.0	—	—	—	—
SBSW-07	03/24/93	5.0	—	—	—	—
SBSW-07	03/24/93	10.0	—	—	—	—
SBSW-08	01/26/93	1.0	—	—	—	—
SBSW-08	01/26/93	5.0	—	—	—	—

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001504

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS0000000717

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
BSW-08	01/26/93	10.0	—	—	—	—
SBSW-09	03/24/93	1.0	—	—	—	—
BSW-09	03/24/93	5.0	—	—	—	—
BSW-09	03/24/93	10.0	—	—	—	—
SBSW-10	03/24/93	1.0	—	—	—	—
BSW-10	03/24/93	5.0	—	—	—	—
SBSW-10	03/24/93	10.0	—	—	—	—
SBSW-11	02/01/93	1.0	—	—	—	—
BSW-11	02/01/93	5.0	—	—	—	—
SBSW-11	02/01/93	10.0	—	—	—	—
BSW-11	02/01/93	15.0	—	—	—	—
BSW-11	02/01/93	20.0	—	—	—	—
SBSW-12	01/26/93	1.0	—	—	—	—
BSW-12	01/26/93	5.0	—	—	—	—
BSW-12	01/26/93	10.0	—	—	—	—
SBSW-12	01/26/93	15.0	—	—	—	—
BSW-12	01/26/93	20.0	—	—	—	—
SBSW-13	01/26/93	1.0	—	—	—	—
BSW-13	01/26/93	5.0	—	—	—	—
BSW-13	01/26/93	10.0	—	—	—	—
SBSW-13	01/26/93	20.0	—	—	—	—
BSW-14	03/17/93	1.0	—	—	—	—
SBSW-14	03/17/93	5.0	—	—	—	—
SBSW-14	03/17/93	10.0	—	—	—	—
BSW-15	03/17/93	6.0	—	—	—	—
SBSW-15	03/17/93	11.0	—	—	—	—
BSW-15	03/17/93	16.0	—	—	—	—
BSW-15B	06/29/93	20.0	—	—	—	—
SBSW-15B	06/29/93	25.0	—	—	—	—
BSW-15B	06/29/93	30.0	—	—	—	—
SBSW-15B	06/29/93	35.0	—	—	—	—
SBSW-15B	06/29/93	40.0	—	—	—	—
BSW-16	03/17/93	1.0	—	—	—	—
SBSW-16	03/17/93	5.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000000718

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-16	03/17/93	10.0	—	—	—	—
SBSW-17	03/17/93	1.0	—	—	—	—
SBSW-17	03/17/93	5.0	—	—	—	—
SBSW-17	03/17/93	10.0	—	—	—	—
SBSW-18	03/17/93	1.0	—	—	—	—
SBSW-18	03/17/93	5.0	—	—	—	—
SBSW-18	03/17/93	10.0	—	—	—	—
SBSW-19	01/19/93	1.0	—	—	—	—
SBSW-19	01/19/93	5.0	—	—	—	—
SBSW-19	01/19/93	10.0	—	—	—	—
SBSW-19	01/19/93	15.0	—	—	—	—
SBSW-20	01/19/93	1.0	—	—	—	—
SBSW-20	01/19/93	5.0	—	—	—	—
SBSW-20	01/19/93	10.0	—	—	—	—
SBSW-20	01/19/93	15.0	—	—	—	—
SBSW-21	01/19/93	1.0	—	—	—	—
SBSW-21	01/19/93	5.0	—	—	—	—
SBSW-21	01/19/93	10.0	—	—	—	—
SBSW-21	01/19/93	15.0	—	—	—	—
SBSW-22	01/20/93	1.0	—	—	—	—
SBSW-22	01/20/93	5.0	—	—	—	—
SBSW-22	01/20/93	10.0	—	—	—	—
SBSW-22	01/20/93	15.0	—	—	—	—
SBSW-23	03/24/93	1.0	—	—	—	—
SBSW-23	03/24/93	5.0	—	—	—	—
SBSW-23	03/24/93	10.0	—	—	—	—
SBSW-24	03/23/93	1.0	—	—	9.5	9500
SBSW-24	03/23/93	5.0	—	—	7.5	7500
SBSW-24	03/23/93	10.0	—	—	6.9	6900
SBSW-25	01/14/93	1.0	—	—	5.4	5400
SBSW-25	01/14/93	5.0	—	—	<1.5	<1500
SBSW-25	01/14/93	10.0	—	—	13.5	13500
SBSW-26	03/23/93	1.0	—	—	13.5	13500
SBSW-26	03/23/93	5.0	—	—	21.8	21800

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

001506

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 25A of 28A
Date: 09/13/93

A50000006719

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-26	03/23/93	10.0	—	—	8.4	8400
SBSW-27	01/14/93	1.0	—	—	2.8	2800
SBSW-27	01/14/93	5.0	—	—	2.2	2200
SBSW-27	01/14/93	10.0	—	—	<1.5	<1500
SBSW-28	03/22/93	1.0	—	—	11.2	11200
SBSW-28	03/22/93	5.0	—	—	10.8	10800
SBSW-28	03/22/93	10.0	—	—	8.5	8500
SBSW-29	03/22/93	1.0	—	—	4.4	4400
SBSW-29	03/22/93	5.0	—	—	12.1	12100
SBSW-29	03/22/93	10.0	—	—	18.5	18500
SBSW-30	01/21/93	1.0	—	—	—	—
SBSW-30	01/21/93	5.0	—	—	—	—
SBSW-30	01/21/93	10.0	—	—	—	—
SBSW-30	01/21/93	15.0	—	—	—	—
SBSW-30	01/21/93	20.0	—	—	—	—
SBSW-30	01/21/93	25.0	—	—	—	—
SBSW-31	01/19/93	1.0	—	—	—	—
SBSW-31	01/19/93	5.0	—	—	—	—
SBSW-31	01/19/93	10.0	—	—	—	—
SBSW-32	03/24/93	1.0	—	—	—	—
SBSW-32	03/24/93	5.0	—	—	—	—
SBSW-32	03/24/93	10.0	—	—	—	—
SBSW-33	01/19/93	1.0	—	—	—	—
SBSW-33	01/19/93	5.0	—	—	—	—
SBSW-33	01/19/93	10.0	—	—	—	—
SBSW-33	01/19/93	15.0	—	—	—	—
SBSW-33	01/19/93	20.0	—	—	—	—
SBSW-33	01/19/93	25.0	—	—	—	—
SBSW-33	01/19/93	30.0	—	—	—	—
SBSW-33	01/19/93	35.0	—	—	—	—
SBSW-33	01/19/93	40.0	—	—	—	—
SBSW-33	01/19/93	45.0	—	—	—	—
SBSW-33	01/19/93	50.0	—	—	—	—
SBSW-33	01/19/93	55.0	—	—	—	—

< = Not detected at indicated reporting limit — = Not sampled and/or analyzed All values represent total concentrations unless noted

= Highest of Multiple Results ??? = Duplicate Results

001507

A5003068720

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190Page: 26A of 2
Date: 09/13/93

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBSW-33	01/19/93	60.0	—	—	—	—
SBSW-34	01/14/93	1.0	—	—	—	—
SBSW-34	01/14/93	5.0	—	—	—	—
SBSW-34	01/14/93	10.0	—	—	—	—
SBSW-34	01/14/93	15.0	—	—	—	—
SBSW-34	01/14/93	20.0	—	—	—	—
SBSW-34	01/14/93	25.0	—	—	—	—
SBSW-34	01/14/93	30.0	—	—	—	—
SBSW-35	01/21/93	1.0	—	—	—	—
SBSW-35	01/21/93	5.0	—	—	—	—
SBSW-35	01/21/93	10.0	—	—	—	—
SBSW-35	01/21/93	15.0	—	—	—	—
SBSW-35	01/21/93	20.0	—	—	—	—
SBSW-35	01/21/93	25.0	—	—	—	—
SBSW-36	06/29/93	1.0	—	—	—	—
SBSW-36	06/29/93	5.0	—	—	—	—
SBSW-36	06/29/93	10.0	—	—	—	—
SBSW-36	06/29/93	15.0	—	—	—	—
SBSW-36	06/29/93	20.0	—	—	—	—
SBSW-36	06/29/93	25.0	—	—	—	—
SBSW-36	06/29/93	30.0	—	—	—	—
SBSW-36	06/29/93	35.0	—	—	—	—
SBSW-36	06/29/93	40.0	—	—	—	—
SBSW-37	06/29/93	1.0	—	—	—	—
SBSW-37	06/29/93	5.0	—	—	—	—
SBSW-37	06/29/93	10.0	—	—	—	—
SBSW-37	06/29/93	15.0	—	—	—	—
SBSW-37	06/29/93	20.0	—	—	—	—
SBSW-37	06/29/93	25.0	—	—	—	—
SBSW-37	06/29/93	30.0	—	—	—	—
SBSW-37	06/29/93	35.0	—	—	—	—
SBSW-37	06/29/93	40.0	—	—	—	—
SBSW-38	06/29/93	1.0	—	—	—	—
SBSW-38	06/29/93	5.0	—	—	—	—

< = Not detected at indicated reporting limit -- = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

001508

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 27A of 28A
Date: 09/13/93

AS000008721

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-38	06/29/93	10.0	--	--	--	--
SBSW-38	06/29/93	15.0	--	--	--	--
SBSW-38	06/29/93	20.0	--	--	--	--
SBSW-38	06/29/93	25.0	--	--	--	--
SBSW-38	06/29/93	30.0	--	--	--	--
SBSW-38	06/29/93	35.0	--	--	--	--
SBSW-38	06/29/93	40.0	--	--	--	--
SBSW-39	06/29/93	1.0	--	--	--	--
SBSW-39	06/29/93	5.0	--	--	--	--
SBSW-39	06/29/93	10.0	--	--	--	--
SBSW-40	06/29/93	1.0	--	--	--	--
SBSW-40	06/29/93	5.0	--	--	--	--
SBSW-40	06/29/93	10.0	--	--	--	--
SBSW-41	06/29/93	1.0	--	--	--	--
SBSW-41	06/29/93	5.0	--	--	--	--
SBSW-41	06/29/93	10.0	--	--	--	--
SBSW-42	06/30/93	1.0	--	--	--	--
SBSW-42	06/30/93	5.0	--	--	--	--
SBSW-42	06/30/93	10.0	--	--	--	--
SBSW-43	06/30/93	1.0	--	--	--	--
SBSW-43	06/30/93	5.0	--	--	--	--
SBSW-43	06/30/93	10.0	--	--	--	--
SBSW-44	06/30/93	1.0	--	--	--	--
SBSW-44	06/30/93	5.0	--	--	--	--
SBSW-44	06/30/93	10.0	--	--	--	--
SBSW-45	06/30/93	1.0	--	--	--	--
SBSW-45	06/30/93	5.0	--	--	--	--
SBSW-45	06/30/93	10.0	--	--	--	--
SBSW-46	07/14/93	5.0	--	--	--	--
SBSW-46	07/14/93	10.0	--	--	--	--
SBSW-46	07/14/93	15.0	--	--	--	--
SBSW-46	07/14/93	20.0	--	--	--	--
SBSW-46	07/14/93	25.0	--	--	--	--
SBSW-46	07/14/93	30.0	--	--	--	--

< = Not detected at indicated reporting limit -- = Not sampled and/or analyzed All values represent total concentrations unless noted

= Highest of Multiple Results ??? = Duplicate Results

001503

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 28A of 29
Date: 09/13/93

1000000-222

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-46	07/14/93	35.0	—	—	—	—
SBSW-46	07/14/93	40.0	—	—	—	—
SBSW-46	07/14/93	45.0	—	—	—	—
SBSW-46	07/14/93	50.0	—	—	—	—
SBSW-46	07/14/93	55.0	—	—	—	—
SBSW-46	07/14/93	60.0	—	—	—	—
SBT-01	03/17/93	1.0	—	—	—	—
SBT-01	03/17/93	5.0	—	—	—	—
SBT-02	03/17/93	1.0	—	—	—	—
SBT-02	03/17/93	5.0	—	—	—	—
SBT-03	03/18/93	1.0	—	—	—	—
SBT-03	03/18/93	5.0	—	—	—	—
SBT-04	03/18/93	1.0	—	—	—	—
SBT-04	03/18/93	5.0	—	—	—	—
SBT-05	03/17/93	1.0	—	—	—	—
SBT-05	03/17/93	5.0	—	—	—	—
SBT-06	04/09/93	1.0	—	—	—	—
SBT-06	04/09/93	5.0	—	—	—	—
SBT-07	04/09/93	1.0	—	—	—	—
SBT-07	04/09/93	5.0	—	—	—	—
SBT-08	04/09/93	1.0	—	—	—	—
SBT-08	04/09/93	5.0	—	—	—	—
SBT-09	04/09/93	1.0	—	—	—	—
SBT-09	04/09/93	5.0	—	—	—	—
SBT-10	04/09/93	1.0	—	—	—	—
SBT-10	04/09/93	5.0	—	—	—	—
SBT-11	04/09/93	1.0	—	—	—	—
SBT-12	04/09/93	1.0	—	—	—	—
SBT-12	04/09/93	5.0	—	—	—	—
SBT-13	04/09/93	1.0	—	—	—	—
SBT-13	04/09/93	5.0	—	—	—	—
SBT-13	04/09/93	10.0	—	—	—	—
SBT-13	04/09/93	15.0	—	—	—	—

< = Not detected at indicated reporting limit — = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

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PARSONS

Parsons Engineering Science, Inc. • A Unit of Parsons Infrastructure & Technology Group Inc.
100 West Walnut Street • Pasadena, California 91124 • (626) 440-4000 • Fax: (626) 440-6200

December 7, 2001

Mr. Dixon Oriola, Unit Chief
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013

**Re: Technical Report and RI Workplan for Chromium
At the Former AlliedSignal Facility
11600 Sherman Way, North Hollywood, California
CRWQCB File No. 111.0180**

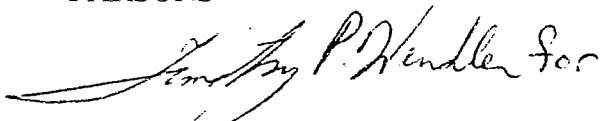
Dear Mr. Oriola:

Please find the attached subject document Parsons prepared on behalf of Honeywell International Inc. (formerly AlliedSignal, Inc.) in response to the Regional Water Quality Control Board's request in its letters dated October 5, 2001 and October 18, 2001 regarding the former Honeywell facility located at 11600 Sherman Way, North Hollywood. We trust this submittal satisfies the requirements.

If you have any questions, please contact the undersigned at (510) 273-3619 or Mr. Benny DeHghi of Honeywell at (310) 512-2296.

Sincerely,

PARSONS



Terry H. Feng, Ph.D., C.HG., P.E.
Principal Hydrogeologist / Project Manager

cc: Mohammad Zaidi, RWQCB (2 copies)
A.J. Blanco, Assistant Manager, Home Depot
Barry Dunzer, Project Manager, Public Storage, Inc.
Ron Newquist, Chief Engineer, Kaiser Permanente ✓
Benny DeHghi, Honeywell International Inc.

TECHNICAL REPORT AND REMEDIAL INVESTIGATION WORKPLAN FOR CHROMIUM

**Honeywell International Inc.
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

Prepared for

Honeywell

**Honeywell International Inc.
2525 West 190th Street
Torrance, CA 90504**

DECEMBER 7, 2001

Prepared by

**PARSONS ENGINEERING SCIENCE, INC.
100 West Walnut Street
Pasadena, California 91124**

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TECHNICAL REPORT AND REMEDIAL INVESTIGATION WORKPLAN FOR CHROMIUM

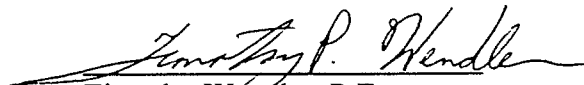
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA

Prepared for

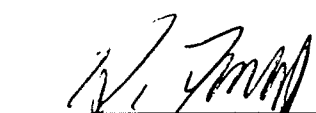
Honeywell International Inc.
Torrance, California

December 7, 2001

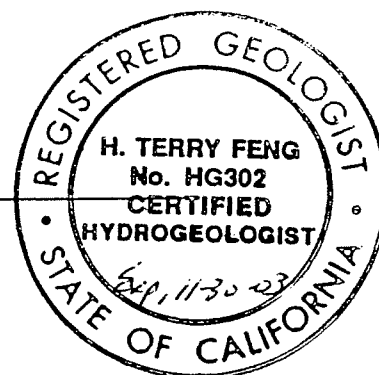
Approved by:

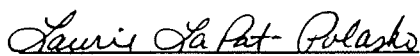

Timothy Wendler, P.E.
Task Manager

12-7-01
Date


Terry Feng, Ph.D. P.E., C.H.G.
Principal Hydrogeologist/Project Manager

12/6/01
Date




Laurie LaPat-Polasko, Ph.D.
Technical Director

12/4/2001
Date

PARSONS ENGINEERING SCIENCE, INC.
100 West Walnut Street
Pasadena, California 91124

001514

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SECTION 1

INTRODUCTION

This report is to address chromium in soil and groundwater at the former AlliedSignal facility located at 11600 Sherman Way in North Hollywood, California (site) (Figure 1-1). The report has been prepared on behalf of Honeywell International, Inc. (Honeywell) in response to the Regional Water Quality Control Board (RWQCB) letter of October 5, 2001 (RWQCB, 2001b). The letter requires Honeywell (formerly AlliedSignal) to demonstrate that the residual chromium concentrations in soil do not pose a threat to groundwater quality and to determine the extent of chromium-impacted groundwater.

This report consists of five sections. Section 1 describes site history and regulatory status. Site stratigraphy, previous chromium soil investigations, and remediation activities are described in Section 2. Section 3 presents a summary of site hydrogeology and previous groundwater monitoring for chromium. Workplans for proposed soil and groundwater investigations are presented in Section 4. Section 5 lists references used.

1.1 SITE DESCRIPTION AND HISTORY

Figure 1-1 illustrates the location and immediate vicinity of the site. The Honeywell North Hollywood site is located in the eastern portion of the San Fernando Valley, and is situated approximately 735 to 740 feet above mean sea level.

The site is bordered by Sherman Way to the north, and by the Southern Pacific Railroad Right of Way to the south. Reynolds & Reynolds lies to the east and a Kaiser Permanente Facility is located west of the site.

The site was used by Bendix Corporation and later AlliedSignal/Bendix Electrodynamics (Bendix was purchased by AlliedSignal) for manufacturing hydraulic and pneumatic valves from 1941 to 1992. Process activities included equipment testing, painting, and plating.

Prior to 1993, the Honeywell facility contained two main structures. Plant 1, constructed in 1941, was the larger building and was located on the west and central portions of the site. Plant 2, constructed in 1949, occupied the eastern portion of the site. Both plants involved chrome-plating operations. Figure 1-2 shows the approximate location and boundaries of the former chrome plating facilities at Plants 1 and 2.

Operation at the site ceased on February 29, 1992. In 1993, the existing buildings were demolished and the site was left vacant until the Eastern Parcel was sold to Home Depot in

1995 (Figure 1-2) and was developed into an asphalt-covered parking lot and a Home Depot store. In 1999, the Western Parcel was sold to Public Storage and developed into a storage facility with asphalt-covered service roads, concrete-covered storage bays, and a warehouse.

1.2 SITE REGULATORY HISTORY

In close coordination with the Regional Water Quality Control Board (RWQCB), Honeywell has conducted site investigation and remedial actions to mitigate chromium-impacted soil, as described in Section 2.2. As a result of these activities, the RWQCB granted soil closure for both the Eastern and Western Parcels in August 1997 (RWQCB, 1997a and 1997b). Groundwater monitoring for chromium was conducted at the request of the RWQCB after the soil closure was approved. In March 2001, at the request of the RWQCB, information regarding previous chromium use at the site was submitted (RWQCB, 2001a). In October 2001 the RWQCB requested that a technical report be prepared and submitted by November 9, 2001 (RWQCB, 2001b) and was subsequently extended to December 9, 2001 (RWQCB, 2001c) to demonstrate that the residual chromium in the soil does not pose a threat to groundwater quality and to determine the extent of chromium in the groundwater beneath the site. This report was prepared in response to the RWQCB's request.

SECTION 2

CHROMIUM IN SOIL

In order to determine whether chromium in soil poses a continued threat to groundwater quality, available site stratigraphy and previous chromium investigations were evaluated. This section describes total chromium and hexavalent chromium identified in soil beneath Plant 1 and Plant 2 during previous site investigation activities and remedial actions conducted to date for chromium in the site soil. Additional data needs to address chromium in soil are also identified through this evaluation.

2.1 GEOLOGY AND SOIL

The site is located in the San Fernando Valley Basin (Basin). The Basin is bounded on the north and northwest by the Santa Susanna Mountains; on the north and northeast by the San Gabriel Mountains; on the east by the San Rafael Hills, which separates it from the San Gabriel Basin; on the south by the Santa Monica Mountains, which separates it from Los Angeles Coastal Plains; and on the west by the Simi Hills.

The Basin is comprised of a large Holocene age alluvial basin of approximately 122,800 acres. The maximum depth of alluvium is about 1000 feet and the volume of stored groundwater is about three million acre-feet. The western part of the valley alluvium consists of mainly clayey sediments derived from the surrounding hills of Tertiary sedimentary rocks. The site is located in the eastern part of the valley, where sand and gravel aquifers were deposited by large streams originating from the basement rocks of the San Gabriel Mountains (GSA, 1986).

Soil encountered during various drilling activities at the site indicates that the lithology varies rapidly throughout the site. Generally the alluvial deposits within the northern portion of the western parcel (Public Storage) consist of sand and gravelly sand to a depth of approximately 50 feet below ground surface (bgs), gravel and sandy gravel to approximately 80 feet bgs, sand and gravelly sand to approximately 140 feet bgs, gravel to approximately 150 feet bgs, sand and gravelly sand to approximately 275 feet bgs (with a 10-foot gravel layer from 135 to 145 feet bgs), and gravel and sandy gravel to approximately 305 feet bgs. Within the southern portion of the western parcel (Public Storage), the alluvial deposits consist of sand and gravelly sand to a depth of approximately 10 feet bgs, gravel and sandy gravel to approximately 205 feet bgs, sand and gravelly sand to approximately 260 feet bgs, gravel, sand, and gravelly sand to approximately 305 feet bgs.

Generally the alluvial deposits within the northern portion of the eastern parcel (Home Depot) consist of sand and gravelly sand to a depth of approximately 65 feet bgs, gravel and sandy gravel to approximately 200 feet bgs, sand and gravelly sand to approximately 140 feet bgs, gravel to approximately 150 feet bgs (with a 5-foot gravelly sand layer from 140 to 145 feet bgs), followed by sand and gravelly sand to approximately 305 feet bgs. Within the southern portion of the eastern parcel (Home Depot), the alluvial deposits consist of sand and gravelly sand to a depth of approximately 50 feet bgs, gravel and sandy gravel to approximately 180 feet bgs (with a 5-foot gravelly sand layer from 105 to 110 feet bgs), sand and gravelly sand to approximately 240 feet bgs, gravel, gravelly sand and sand to approximately 305 feet bgs.

The alluvial deposits within the Kaiser property generally consist of sand and gravelly sand to a depth of approximately 305 feet bgs, with occasional thin layers of gravel and sandy gravel 70 and 140 feet bgs in the northern portion of the property.

Cross sections of the lithology of the site, based on boring logs from groundwater well installations, are presented in Figures 2-1 through 2-4. Boring logs from well installations and explanations of soil type symbols used in the cross-sections are included in Appendix A.

2.2 PREVIOUS INVESTIGATIONS/REMEDIAL ACTIONS

The site has been the subject of extensive subsurface investigations since the 1980s. A brief summary of investigations and remedial actions related to chromium in soil is presented below.

2.2.1 1993 GTI Soil Investigation

In July 1993, Groundwater Technology, Inc. (GTI) drilled fifty-two borings ranging in depth from 1 to 55 ft bgs, as part of a chromium investigation. Soil samples were analyzed for total chromium and selected samples were analyzed for hexavalent chromium (GTI, 1993). A table summarizing the analytical results from the GTI Investigation is presented in Appendix B. Figure 2-5 depicts the locations of the GTI borings that were analyzed for chromium. Based on the results of the investigation, GTI identified and characterized two areas as having chromium-impacted soil. Figure 2-6 shows a close-up of the Plant 1 area, located near the western edge of the site, with cross-sections. Figure 2-7 shows a close-up of the Plant 2 area, located near the eastern edge of the site, with cross-sections.

Total chromium was detected at concentrations ranging from less than 1.5 mg/kg to 1,700 mg/kg. The highest concentration was detected in SBP1-037 at 5-ft bgs, located in the Plant 1 area. Total chromium concentrations decreased with depth in the impacted area of Plant 1, and no soil samples were obtained beyond 55 feet bgs. Cross-sections within the Plant 1 area are presented in Figures 2-8 and 2-9. Cross-sections within the Plant 2 area show concentrations decreasing to below 10 mg/kg at a depth of 20-ft bgs (Figure 2-10 and 2-11).

Hexavalent chromium was detected at concentrations ranging from less than 0.2 mg/kg to 370 mg/kg. The highest concentration was detected in SBP1-073 at 20-ft bgs, located in the plating area of Plant 1. Hexavalent chromium concentrations decreased with depth in the Plant 1 area, but remained above 50 mg/kg at depths of 40 to 55 ft bgs (Figures 2-12 and 2-13). In Plant 2, the highest concentration of hexavalent chromium detected was 0.9 mg/kg at a depth of 20 ft bgs (GTI, 1993).

Based on concentrations detected in SBP2-26 and SBP2-25, located outside the chromium-impacted area of Plant 2, the background concentration of total chromium was determined to be less than 10 mg/kg, hexavalent chromium was not found above the detection limit of 0.25 mg/kg in the same area (GTI, 1993).

2.2.2 Chromium Related Remedial Activities Since 1993

Plant 1 Area

As part of soil closure, in July 1997, chromium impacted soil was removed, using a 36-inch diameter bucket auger, to a depth of 10 ft bgs at the locations of SBP1-8, SBP1-36, SBP1-37, and SBP1-73 (Figure 2-14). A total of seven borings were drilled. Drilling activities produced approximately 20 cubic yards of soil, which was transported offsite for disposal. Confirmation soil samples were collected at the bottom of each borehole (Earth Tech, 1997). The results of confirmation sampling are presented in Table 2-1.

From December 1999 through March 2000, in support of Public Storage site redevelopment related construction work, chromium-impacted soil was excavated. These efforts were conducted to an approximate depth of 15-ft bgs within the previously defined chromium-impacted area (Figure 2-15). Approximately 230 tons of soil was removed and transported to an offsite disposal facility. The highest hexavalent chromium concentration identified during composite stockpile sampling was 540 mg/kg. The highest hexavalent chromium concentration identified during confirmation sampling at the bottom of the excavation was 22 mg/kg.

Plant 2 Area

In October 1994, soil with elevated levels of total chromium near SBP2-19 and SBP2-23B was excavated to a depth of approximately 7 ft bgs for off-site disposal (Figure 2-16). Soil excavated to approximately 3 ft bgs, presumed to be clean, was stockpiled for profiling. Soil excavated between 3-ft and 7-ft bgs was stored in roll-off bins. Analytical results of two soil samples collected in the excavation area indicated total chromium was still present at concentrations exceeding 50 mg/kg total chromium (ten times the STLC of 5 mg/L). Consequently, additional soil was excavated from the excavation. Soil sampling from the bottom of the excavation indicated the presence of total chromium at concentrations less than 50 mg/kg. The highest result for total chromium was 48.8 mg/kg at approximately 10 feet bgs. Approximately 120 cubic yards of excavated soils were transported offsite for disposal (Hydrologue, 1995).

2.3 SUMMARY

In Plant 2, soil characterized as having total chromium and hexavalent chromium above the industrial PRGs, were excavated to a depth of 7 ft bgs across the excavation area and to a depth of 12 ft bgs on the northern and eastern ends of the excavation. Soil in Plant 2, left in place, contained chromium concentrations ranging from ND to 24 mg/kg for total chromium (Hydrologue, 1995). The USEPA dilution-attenuation factor 20 (DAF 20), which corresponds to concentrations for groundwater protection (38 mg/kg), is a soil screening level derived using default values in standardized equations and accounts for natural processes that reduce contaminant concentrations in the subsurface (USEPA, 2000c). Chromium concentrations left in place in Plant 2 were below 38 mg/kg, which corresponds to the DAF 20. As a result, residual chromium in soil at Plant 2 does not pose a threat to groundwater. Consequently, no further action is recommended for soil at the Plant 2 area other than proposed groundwater monitoring as discussed in Sections 3 and 4.

In Plant 1, soil characterized as having total chromium and hexavalent chromium above the industrial preliminary remediation goals (PRGs) of 450 mg/kg and 64 mg/kg, respectively, was excavated to a depth of 10 ft bgs. Confirmation sampling in Plant 1 (at or below 10 ft bgs) indicated the presence of total chromium at concentrations ranging from 16 to 2,280 mg/kg and the presence of hexavalent chromium at concentrations ranging from ND to 37.5 mg/kg (Earth Tech, 1997). Chromium may be present below 50-ft bgs in the vicinity of Plant 1. The EPA dilution-attenuation factor 20 (DAF 20), which corresponds to concentrations for groundwater protection (38 mg/kg), is a soil screening level derived using default values in standardized equations and accounts for natural processes that reduce contaminant concentrations in the subsurface (USEPA, 2000c). The values are conservative, but provide a preliminary check for potential threat to groundwater. It is likely that chromium left in soils beneath Plant 1 area may still exceed the USEPA screening levels for groundwater protection. Additional soil characterization is recommended to determine whether chromium concentrations in soil beneath Plant 1 pose a threat to groundwater quality.

To the extent the existing site improvements allow, soil samples will be collected below 50 feet bgs to further characterize the vertical extent of chromium concentrations in soil beneath Plant 1. Details of the proposed soil investigation at Plant 1 area are included in Section 4.1

SECTION 3

CHROMIUM IN GROUNDWATER

In order to determine the potential impact of chromium at the site on beneficial uses of the groundwater, available hydrogeology and previous groundwater monitoring data were evaluated. As part of this discussion, additional groundwater data needs are also described.

3.1 HYDROGEOLOGY

The site is located in the San Fernando Groundwater Basin (SFB) of the Upper Los Angeles River Area. The City of Los Angeles has an exclusive right to extract and utilize all the native safe yield water (43,660 acre-feet per year) from this basin. The groundwater in the SFB is replenished by deep percolation from rainfall, surface runoff, and from recharge utilizing imported water to the basin. However, considerable volumes of groundwater are extracted from the SFB through dewatering and groundwater extraction projects. The dewatering projects are either due to: 1) close proximity of the groundwater table to the ground surface, which necessitates continuous dewatering to maintain subsurface structures; 2) groundwater extraction from Extraction Well Fields by the City of Los Angeles; 3) or groundwater remediation projects to clean up the volatile organic compounds, nitrate, and chromium impacted groundwater throughout the SFB. The upper portion of the Los Angeles River passes through the basin and interacts with the SFB groundwater.

The general direction of the groundwater flow in the SFB is toward east-southeast. However, the dewatering and groundwater extraction activities within the SFB have a local influence on the direction of groundwater flow.

Based on the regional groundwater contour map prepared by the Upper Los Angeles River Area (ULARA) Watermaster, the water table in the vicinity of the site was approximately 470 feet above mean sea level when measured in September 2000. The water table in the vicinity of the site was approximately 463 feet above mean sea level when measured in April 2000 showing a seasonal fluctuation of approximately 7 feet. However, the observed historical groundwater table fluctuation beneath the site is up to 60 feet with a typical variation of 30 feet per year. Figure 3-1 depicts hydrographs for the existing ten (10) monitoring wells GW-1 through GW-10, based on the available data from July 1991 through February 2001.

Groundwater flow patterns at the site are controlled completely by regional pumping which are operating on demand and highly unpredictable. The North Hollywood Well Field,

spreading in an east-west band immediately south of the site, contains 29 extraction wells with an extraction capacity of 129 cubic feet per second (cfs), which amounts to approximately 20,000 acre-feet per year. Rinaldi-Toluca well field located northwest of the site has an extraction capacity of 30,000 acre-feet per year. The BOU extracts approximately 11,450 acre-feet per year (1999-2000 water year) to be used by the City of Burbank after remediation of VOCs (ULARA, 2001). Several extraction well fields also located in the east and southeast direction of the site. The significant fluctuation in the groundwater table beneath the site is mainly due to the variable rate of extraction in the aforementioned well fields.

Data generated in February 2001 indicate that the average elevation of the water table is approximately 475 feet above mean sea level (approximately 259 feet bgs to 267 feet bgs). A simulated groundwater contour map for the Fall 2005, prepared by the ULARA Watermaster, predicts an approximate water elevation of 465 feet above mean sea level for the site (an approximately 5 foot draw down compared with Fall 2000).

The aquifer beneath the site is fairly productive. Based on aquifer pumping tests conducted by ULARA Watermaster in several extraction wells located in the immediate vicinity of the site, the transmissivity of the upper aquifer in the vicinity ranges from 4,950 to 8,560 ft²/day and the hydraulic conductivity ranges from 30 to 140 ft/day. The pumping test from the closest extraction well #3810U yielded a transmissivity of 7,220 ft²/day and hydraulic conductivity of 100 ft/day assuming an aquifer thickness of 72 ft (Montgomery, 1992).

3.2 HISTORICAL CHROMIUM GROUNDWATER SAMPLING ACTIVITIES

In 1991, six groundwater monitoring wells were installed on the Eastern and Western Parcels (GW-1, -2, and -3 on the Western Parcel and GW-4, -5, and -6 on the Eastern Parcel). In 1993, four additional wells were installed off-site on the Kaiser Permanente property (GW-7, -8, -9, and -10). Table 3-1 shows the well construction details of the monitoring wells. Groundwater monitoring for chromium was conducted in selected wells in August 1993; all samples were well below accepted action levels for chromium (Figure 3-2).

In July 1997 and February 1998, groundwater samples were collected from GW-3 and GW-4, at the RWQCB's request, for chromium at the site. The samples contained 1.4 mg/L of total chromium in GW-3 and 0.043 mg/L of total chromium in GW-4. Honeywell has collected additional samples in July 1998, July 1999 and February 2001. The data for these samples are presented in Table 3-2.

Samples were collected during the July 1998 event using various methods to determine if variations in sampling technique affected results. No consistent difference in concentrations based on the filtration method was identified; the variation between the duplicates is in some cases greater than the different filtration techniques. Samples collected directly from a submersible pump situated near the bottom of the water column were significantly lower than those collected with a bailer after purging with a submersible pump. This is possibly due to

vertical variations in the chromium concentration, since bailer samples are likely to be collected from near the top of the water column.

In the February 2001 sampling event, samples were collected from GW-1, -2, -3, -6, -7, -8, -9, and -10. Wells GW-4 and GW-5 were not accessible during this event.

3.3 SUMMARY

Ten groundwater monitoring wells have been installed and several rounds of sampling have been conducted at the site. Due to the dynamic nature of the aquifer system due to impact from the regional extraction well fields, available groundwater data is not sufficient to determine the lateral and vertical extent of chromium in groundwater and to allow for a better understanding of the chromium sources on-site and off-site. It is recommended to conduct monthly water level measurement and four consecutive quarterly groundwater sampling from all of the existing wells to assess the seasonal groundwater level fluctuation and chromium concentration variation trend. In addition, one of the deep soil borings proposed in the Plant 1 source area will be completed into a groundwater monitoring well and locations of previously planned three off-site wells within the Union Pacific Railroad right-of-way will be adjusted to augment the existing monitoring well network. Detailed discussion on the proposed groundwater investigation activities is presented in Section 4.

SECTION 4

REMEDIAL INVESTIGATION WORKPLANS

The objective of the planned remedial investigation is to determine if the residual chromium in soil poses a threat to groundwater quality and to better understand the groundwater conditions and fate and transport of chromium beneath the site. This section presents workplans for the proposed soil and groundwater investigations at the site.

4.1 SOIL INVESTIGATION WORKPLAN

The purpose of the soil investigation is to determine if chromium in soil at Plant 1 area poses a threat to groundwater. Additionally, physical and chemical data required to support fate and transport evaluations will also be collected. Historical data collected during previous investigations, and evaluations of the data presented in Section 2 were used to define the scope of the soil investigation.

4.1.1 Soil Investigation

As discussed in Section 2, further soil investigation will be focused on Plant 1 area as the chromium left in soil at the site may potentially pose a threat to groundwater. Although previous soil sampling adequately defined the lateral extent of chromium in soil, the vertical limit of chromium in soil is not fully characterized. In order to characterize the vertical extent of chromium in soil within previously defined chromium soil source area at Plant 1, four soil borings will be drilled (Figure 4-1). Two of the borings will be advanced to groundwater to collect soil and groundwater samples below the water table in addition to the soil sampling from the vadose zone. One deep boring (PBP1-01) will be drilled to groundwater (approximately 250 feet bgs) in the vicinity of SBP1-73. Another deep boring (PBP1-02) will be advanced to a total depth of approximately 310 feet to allow for installation of groundwater monitoring well GW-14. Well installation is discussed in Section 4.2.3.

The other two borings (PBP1-03 and PBP1-04 on Figure 4-1) will be drilled to at least 100-ft bgs but the total depth will depend on the concentration of chromium detected in soil samples. Either Hach® test kit for hexavalent chromium or laboratory rush analyses for total and hexavalent chromium for the samples from 80, 90, and 100 feet bgs will be performed. If the results are above background (10 mg/kg for total chromium and <0.25 mg/kg for hexavalent chromium) the boring will be continued until two consecutive samples are within fifty percent of background concentrations for total and hexavalent chromium. All borings will be drilled using the air rotary casing hammer method since formations with sandy gravel and occasional boulders must be penetrated (Section 4.3.4).

Soil samples will be collected every ten feet for total and hexavalent chromium analyses using EPA Methods 6010B and 7199, respectively in a California certified laboratory. Moisture content will be requested for all analytical samples. In boring PBP1-02 samples will be collected every 10 feet until the water table is reached.

After Honeywell conducts a preliminary review of the laboratory data, selected soil samples from the vadose zone will be submitted for synthetic precipitation leaching procedure (SPLP) analysis using EPA Method 1312. SPLP results will provide information regarding the mobility of chromium in the soil and aid in the preparation of fate and transport assessment. SPLP was chosen over soluble threshold limit concentration (STLC) or toxicity characteristic leaching procedure (TCLP) for leachate testing, since SPLP's less acidic extraction is more representative of site conditions. In addition, to facilitate fate and transport assessment, selected samples will be analyzed for pH, total organic carbon (TOC), bulk density, grain size, porosity, moisture content, cation exchange capacity (CEC), and total manganese (USEPA, 2000b).

Additionally paired soil and groundwater samples will be collected from PBP1-02 just below the water table and every 20 feet thereafter to determine the site-specific partitioning characteristics of chromium between soil and groundwater. The analytical program for the soil samples is summarized in Table 4-1.

4.1.2 Soil Sampling Procedures/Methodology

Standard procedures will be utilized for soil borings and sampling. Qualified personnel trained in the conduct of subsurface investigation, record documentation, and chain-of-custody (COC) procedures will perform all sampling activities. In addition, sampling personnel will thoroughly review this workplan prior to sample acquisition and will have a copy of these procedures available onsite for reference. All field work will be conducted under the supervision of a registered geologist.

Standard field procedures are discussed in Section 4.3. The following serves as additional protocols specific to subsurface soil sampling at the site. The boring logs prepared by the field geologist during drilling activities will record the following sampling information:

- Boring number and location;
- Sample identification numbers;
- Date and time;
- Sample depth;
- Lithologic description in accordance with the Unified Soils Classification System (USCS); and
- Description of any visible evidence of soil contamination.

Subsurface soil samples will be collected using a split-spoon sampler containing brass tube liners. Soil at the ends of each liner will be immediately trimmed, and the ends sealed with Teflon® fabric held in place by plastic end caps. Sample handling procedures are discussed

in Section 4.3.5. Exceptions to these procedures will be noted in the field notebook or on the boring logs.

4.2 GROUNDWATER INVESTIGATION WORKPLAN

The purpose of the groundwater investigation is to understand the hydrogeological conditions of the site and determine the current vertical and horizontal extent and the fate and transport characteristics of chromium in groundwater. Historical groundwater monitoring data presented in Section 3 were used to define the scope of the groundwater investigation.

Groundwater field investigations, in addition to off-site and on-site well installation, include quarterly groundwater monitoring events and water level measurement. The following sections provide more details regarding proposed field activities.

4.2.1 Chromium Groundwater Investigation

Well Installation

Four new monitoring wells are proposed to be added to the groundwater monitoring network. Locations of proposed new wells are shown on Figure 3-3. One new well (GW-14) is proposed to be installed within the Plant 1 source zone in the deep soil boring BBP1-02. This new well will provide critical information on the groundwater conditions and chromium concentrations directly beneath the source zone.

The three proposed off-site wells are located within the Union Pacific Railroad right-of-way (ROW) as shown on Figure 3-3. Details for installation of these three wells are presented in the RWQCB-approved workplan dated 1994 (Hydrologue 1994a and 1994c). Due to inability to gain access from the Railroad, these wells have not yet been installed. Honeywell has requested RWQCB assistance in securing access from the Railroad (Honeywell, 2001). Honeywell will initiate the effort to gain access from the railroad, and respectfully reiterates its request to the RWQCB for support in securing the needed access permit from the Railroad in order to complete the well installation.

The proposed locations for the three off-site wells on Figure 3-3 differ from the locations indicated in the 1994 workplan. Based on the data collected in recent years, the new locations fit better with the overall groundwater monitoring objectives, in addition to the site constraints and the safety limitations imposed by the railroad which preclude their installation at originally proposed locations.

Groundwater Monitoring

As part of the chromium groundwater investigation for the site, four quarterly sampling events will be conducted at GW-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, and other wells as they are installed, and water levels will be measured in all wells monthly for 12 months. After one year, the frequency of the monitoring program will be re-evaluated based on the overall level and variability of seasonal fluctuations. All samples will be analyzed for total and hexavalent

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chromium. Geochemical parameters will be performed during selected events in accordance with guidelines from USEPA (USEPA, 2000b). The analytical program for the groundwater samples is summarized in Table 4-2. During the two quarterly monitoring events corresponding to low and high water season, additional samples will be collected from three different depths in GW-1, -3, -7, -10, and -14 (proposed new well) to assess the vertical distribution of chromium in the aquifer. All site monitoring wells were installed with long screen intervals to accommodate significant water level fluctuations. All proposed new monitoring wells, once installed, will be included in the quarterly groundwater monitoring program.

Prior to the commencement of the groundwater sampling program, the functionality of all existing wells will be verified and the total depth of wells measured to ensure that significant siltation is not present. Excessive siltation may impact the functionality of monitoring wells and will be removed if identified.

4.2.2 Groundwater Sampling Procedures

Standard procedures will be utilized for purging and sampling groundwater monitoring wells. In addition to the samples collected for laboratory analyses, field parameters will be measured. The general groundwater-indicator parameters, pH, temperature, electrical conductivity, and turbidity will be measured during each sampling event. The groundwater geochemical parameters, dissolved oxygen (DO), oxidation-reduction potential (ORP), ferrous iron (Fe[II]), alkalinity, and CO₂, will also be measured. Some of the parameters will be measured with a direct-reading meter, while others will be measured using a Hach® portable colorimeter in accordance with specific Hach® analytical procedures.

Qualified field personnel trained in the conduct of groundwater sampling, record documentation, and COC procedures will perform all sampling activities. In addition, sampling personnel will have thoroughly reviewed this workplan prior to sample acquisition and will have a copy of these procedures available onsite for reference.

The following paragraphs and Section 4.3 present the procedures to be followed for groundwater sample collection from groundwater monitoring wells. Exceptions to these procedures will be noted in the field logbook or on the groundwater sampling record.

Groundwater Monitoring Procedures

In general, groundwater sampling will include:

- (1) water level measurements;
- (2) calculation of proper purge volume and well purging;
- (3) collection of a groundwater sample;
- (4) proper field documentation; and
- (5) proper delivery of chilled samples under chain-of-custody (COC) to the laboratory.

All equipment to be used for sampling will be assembled, decontaminated, and calibrated (if required) prior to arriving in the field. All non-dedicated sampling and test equipment that will contact groundwater will be decontaminated before each use. This includes the water-level probe and cable, test equipment for onsite use, and other equipment that will contact the samples. The decontamination protocol will be:

- Wash with potable water and phosphate-free laboratory detergent;
- Rinse with potable water;
- Rinse with distilled or deionized water; and
- Air dry.

Procedures will be documented in the field notebook and on the groundwater sampling record forms.

Laboratory-supplied sample containers and lids will be new and sealed by the laboratory prior to receipt by Parsons. The project laboratory will add any necessary chemical preservatives to sample containers prior to shipping the containers to Parsons. The type of container provided and the method of container decontamination will be documented in the project laboratory's permanent record of the sampling event.

As required, field analytical equipment will be calibrated according to the manufacturers' specifications prior to field use. This applies to equipment used for onsite measurements of dissolved oxygen (DO), pH, conductivity, temperature, oxidation-reduction potential (ORP), Fe(II), and carbon dioxide.

Prior to removing water from the monitoring well, an electronic water-level indicator will be used to measure the static water level to the nearest 0.01 feet. Additionally, the depth to the bottom of the well will be measured by slowly lowering the water-level probe to the bottom and taking the measurement to the nearest 0.01 foot.

A portable Grundfos® Redi-Flo II® will be used for purging the monitoring wells. The volume of water contained within the well casing at the time of sampling will be calculated, and at least three times the calculated well casing volume will be removed from the well. If a well is evacuated to a dry state during purging, the well will be allowed to recharge to 80 percent of static water level, and then a sample will be collected.

After purging, with groundwater pH, temperature, and conductivity measurements stabilized to within 10 percent during three consecutive readings taken at least five minutes apart, the pump discharge will be reduced to a minimal flow rate of about 100 ml/min and samples will be collected. The water will be carefully poured down the inner walls of the laboratory-supplied sample containers to minimize aeration of the sample. Excess water collected during sampling will be disposed of in the same manner as purge water. Field quality assurance and quality control protocols are discussed in Section 4.4.

In order to provide complete documentation of the sampling event, records will be maintained by field personnel in a field logbook (Section 4.3.1). In addition, the following information will be recorded on the well sampling log:

- Sample location (facility name),

- Sample identification,
- Date and time of sampling,
- Sampling/purge method,
- Field observations of sample appearance and color,
- Weather conditions,
- Water level prior to purging,
- Total monitoring well depth,
- Purge volume,
- Monitoring well condition,
- Sampler's identification,
- Field measurements of pH, temperature, specific conductivity, and DO; and
- Any other relevant information.

Onsite Groundwater Parameter Measurement

Some groundwater chemical parameters will be measured onsite. Some of the measurements will be made with direct-reading meters, while others will be made using a Hach® portable colorimeter in accordance with specific Hach® analytical procedures. These procedures are described in the following subsections.

All glassware or plasticware used in the Hach® analyses will have been cleaned prior to sample collection by thoroughly washing with a solution of laboratory-grade, phosphate-free detergent and water, and rinsing with isopropyl alcohol and deionized water to prevent interference or cross-contamination between measurements. If concentrations of an analyte are above the range detectable by the titrametric or colorimetric methods, the analysis will be repeated by diluting the groundwater sample with distilled water until the analyte concentration falls to a level within the range of the method. All rinseate and sample reagents accumulated during groundwater analysis will be collected, labeled, and carefully stored for proper disposal.

pH, Temperature, and Conductivity: Because the pH, temperature, and conductivity of a groundwater sample can change significantly within a short time following sample acquisition, these parameters will be measured in the field in unfiltered, unpreserved, "fresh" water collected using the same technique as the samples taken for laboratory analyses. The measurements will be made at regular intervals during purging in a flow-through cell or a clean container separate from those intended for laboratory analysis. The wells will be purged until the readings stabilize to within $\pm 10\%$ of consecutive readings. The measured values will be recorded in the groundwater sampling record.

Dissolved Oxygen Measurements: DO is the most thermodynamically favored electron acceptor used by microbes for the biodegradation of organic carbon. DO measurements will be made using a meter with an oxygen sensor in a flow-through cell at regular intervals during purging and immediately before groundwater sample acquisition. The monitoring

wells will be purged until DO levels stabilize. DO readings will be recorded in the groundwater sampling record.

Oxidation/Reduction Potential: The ORP of groundwater is an indication of the relative tendency of a solution to accept or transfer electrons. ORP reactions in groundwater are usually biologically mediated; therefore, the ORP of a groundwater system depends on and influences rates of biodegradation.

The ORP will be measured in the field at regular intervals during purging and immediately before sample acquisition in a clean container separate from those intended for laboratory analysis or in a flow-through cell.

Iron (II) Measurements: Iron is an important trace nutrient for bacterial growth, and different states of iron can affect the ORP of the groundwater and act as an electron acceptor for biological metabolism under anaerobic conditions. Fe(II) concentrations will be measured in the field via colorimetric analysis with a Hach® DR/700 Portable Colorimeter after appropriate sample preparation. Hach® Method 8146 (or similar) for Fe(II) (0 to 3.0 mg/L) will be used to prepare and analyze the samples.

Alkalinity Measurements: Alkalinity concentrations will be measured in the field via titrametric analysis with a Hach® kit.

Carbon Dioxide Measurements: Carbon dioxide concentrations will be measured in the field using a CHEMetrics® portable titration kit. The method uses a sodium hydroxide titrant with a pH indicator.

4.2.3 Groundwater Monitoring Well Design and Installation

The three off-site wells in the railroad ROW will be constructed per the approved 1994 workplan (Hydrologue, 1994a,b). In order to prevent the possibility of metals leaching from the casing, PVC screen will be used instead of stainless steel specified in the 1994 workplan. Wells will be constructed with new, decontaminated, 4-inch outside-diameter, flush-jointed and threaded, Schedule 80 polyvinyl chloride (PVC) casing and screen. Slot size for screened intervals will be 0.020 inch, as opposed to the 0.030-inch slot specified in the 1994 workplan, to prevent potential siltation which has been observed in some existing wells with 0.030-inch slot. The well screen interval will be 145 feet in length from 160 feet bgs to 305 feet bgs and the screen will be capped at the bottom with a threaded end cap. The annular space filter pack will be composed of silica sand Lonestar #2-16 or equivalent. If differences in lithology are found during drilling, modifications to the slot size and filter pack design will be made in the field.

The on-site well will be completed as a 6-inch well to allow for future aquifer testing or remediation if needed. The well will be constructed with new, decontaminated, 6-inch outside diameter, flush-jointed and threaded, Schedule 80 PVC casing and screen. Slot size for screened intervals will be 0.020 inch. The well screen interval will be 145 feet in length from 160 feet bgs to 305 feet bgs and the screen will be capped at the bottom with a threaded

end cap. The annular space filter pack will be composed of silica sand Lonestar #2-16 or equivalent. If differences in lithology are found during drilling, modifications to the slot size and filter pack design will be made in the field. Detailed well specification for the proposed on-site well, GW-14, is shown on Figure 4-2.

4.3 STANDARD FIELD PROTOCOLS

Work on all phases of the remedial investigation will be conducted according to the following standard field protocols.

4.3.1 Field Log Book

All field activity information will be recorded in a permanently bound notebook with sequentially numbered pages. The date and initials will be recorded at the top of each page. Minimum information required for each entry includes:

- Time (recorded in the column under the date);
- Weather conditions during previous 24 hours;
- Persons performing the drilling, sampling, testing, or other activity;
- Drilling and well construction information;
- Sample location map or detailed sketch,
- Site identification;
- Photograph numbers and description;
- Equipment decontaminated and procedures utilized;
- Equipment serial numbers;
- Calibrations;
- Field measurements not recorded on other data sheets;
- Records of pertinent conversations;
- Names, titles, and organization of any visitors entering the site; and
- Comments (suitable for reconstructing incident without memory).

All entries will be made in waterproof ink. Any errors will be corrected by drawing a single line through the mistake, and all corrections will be initialed and dated. Blank spaces will be crossed out and initialed and dated.

4.3.2 Utility Clearance

All boring locations will be cleared for underground utilities and other obstacles by a geophysical survey prior to drilling. All proper state and local agencies, including DIG ALERT, will be notified in advanced of drilling operations.

4.3.3 Survey

Parsons will contract a licensed surveyor to survey all boring and well locations for future reference and comparison to previously collected data.

4.3.4 Air Rotary Casing Hammer Drilling

The air rotary casing hammer drilling method will use a tri-cone bit for drilling and compressed air to remove soil cuttings from the drill casing. In this method, air is directed through the hollow drilling rod down to the drill bit, where soil cuttings and entrained groundwater are blown up the drill casing. The drill casing will be advanced behind the tri-cone bit as the borehole is being drilled. Then the drill cuttings are brought up inside the inner drive tube into a cyclone at the surface. The cyclone slows the movement of the soil and water and drops them into a 55-gallon drum or a large roll-off type dump box. Water that accumulates in the drums and bins will be pumped off to a portable water tank for offsite disposal. In order to collect soil samples a split-spoon sampler will be inserted through the hollow center of the drill stem and hammered out beyond the end of the lead auger drill bit into undisturbed sediments. These samples will be retrieved by the driller and handed to the on-site geologist who will log the stratigraphy.

4.3.5 Sample Handling

All samples collected will be labeled in a clear and precise way for proper identification in the field and for tracking in the laboratory. The samples will have preassigned, identifiable, and unique numbers.

- Project location/name;
- Sample identification number;
- Sampling date;
- Sampling time;
- Preservatives added;
- Sample collector's initials; and
- Analyses requested.

After the samples are sealed and labeled, they will be packaged for shipment to the project laboratory. Every effort will be made to protect the samples against shipment breakage. All glass sample bottles will be wrapped in bubble pack and taped. The cooler will be filled with double-bagged ice, to maintain a maximum shipping temperature of 4°C.

After the cooler has been filled with samples and bagged ice, any remaining space will be filled with bubble pack. This will help prevent sample movement during shipment. The lid and the drain port will be taped shut. The cooler will then be taped closed by taping around the cooler at least twice on each side of the cooler. Samples will be either shipped via an overnight service to the project laboratory or picked up by courier and delivered the same day.

Chain-of-custody forms will be completed in the field and will accompany all samples during shipment. The forms will be placed in a locking plastic bag and taped to the inside lid of the shipping cooler.

The chain-of-custody form will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is either in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorized personnel. Until the samples are shipped, the custody of the samples will be the responsibility of Parsons. The site leader or designee will sign the chain-of-custody form.

4.4 FIELD QUALITY ASSURANCE/QUALITY CONTROL

As a check on field sampling, quality assurance/quality control (QA/QC) samples will be collected during each sampling event. Definitions for field QA/QC samples are presented below.

4.4.1 Field Duplicates

Field duplicate samples will be collected and analyzed to evaluate sampling and analytical precision. A field duplicate is defined as two or more samples collected independently at the same sampling location during a single act of sampling. The laboratory will be unable to distinguish which samples are field duplicates. Each of the field duplicates will be uniquely identified with a coded identifier, which will be in the same format as other sample identifiers. Duplicate sample results are used to assess the precision of the sample collection process. Field duplicates will be collected from ten percent of all samples. Field duplicate analysis is not required for geochemical parameters.

4.4.2 Equipment Rinseate Blank

Equipment rinseate blanks (field blanks) are used to measure contamination introduced to a sample set from improperly decontaminated sampling equipment. Equipment rinseate blanks consist of ASTM Type II water (or equivalent) poured into or pumped through the sampling device following decontamination. The rinseate is transferred to a sample bottle appropriate for the analysis and transported to the laboratory for analysis. One equipment rinseate sample will be collected per sampling event for each type of sampling equipment used (disposable bailers excluded). The equipment rinseate samples are analyzed for the same laboratory parameters as the site samples. Equipment rinseate blanks need not be analyzed for geochemical parameters.

4.4.3 Temperature Blank

One temperature blank will accompany each cooler containing project samples submitted to the subcontract laboratory. Temperature blanks consist of DI water poured into a glass container. Temperature measurements are essential to verify proper sample preservation for all analyses requiring sample preservation by refrigeration ($4 \pm 2^{\circ}\text{C}$). Laboratory personnel

will obtain temperature measurements from the temperature blank upon receipt of sample shipment containers and this measurement will be recorded on the COC. In the absence of a temperature blank, the laboratory must measure cooler temperature using an infrared thermometer. Temperature readings obtained must be documented on the COC.

4.5 INVESTIGATION DERIVED WASTE (IDW) MANAGEMENT PLAN

In the process of conducting subsurface investigations, well installation, and groundwater monitoring various types of potentially contaminated investigation-derived waste (IDW) will be generated. Possible IDW includes:

- Used personal protective equipment (PPE);
- Purge water;
- Disposable sampling equipment;
- Decontamination fluids; and
- Soil cuttings from soil borings.

Used PPE and disposable equipment will be double bagged and placed in a municipal refuse dumpster on site. These wastes are not considered hazardous and may be sent to a municipal landfill. Any waste PPE and disposable equipment which can still be reused will be rendered inoperable before disposal in the refuse dumpster.

Soil cuttings generated during the subsurface sampling will be stored in 55-gal drums or bins on site. Profiling of soil cuttings will be done to ensure appropriate disposal. Purge water and decontamination fluids will be stored in 55-gal drums or a polyethylene tank on-site until they can be profiled and disposed of properly.

4.6 SITE SPECIFIC HEALTH AND SAFETY PLAN

All remedial investigations will be conducted in accordance with the provisions of the site-specific health and safety plan for the North Hollywood site (Parsons, 2001). After this workplan is approved by the RWQCB, the site-specific health and safety plan will be updated to include all the elements of the planned work.

4.7 PROJECT SCHEDULE

Upon RWQCB approval of this workplan, Parsons will proceed on behalf of Honeywell to schedule and coordinate all fieldwork. Groundwater monitoring is anticipated to begin in the first quarter of 2002. Subsurface soil investigations are anticipated to begin in the first or second quarter of 2002, contingent upon site operation schedule and requirements.

A data report will be prepared after the completion of the proposed soil investigation to summarize the findings of soil investigation and the groundwater monitoring conducted.

SECTION 5

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- RWQCB, 2001c. *Approval of a 30-Day Extension to Submit a Workplan for Additional Chromium Source Removal and Groundwater Remediation at the Former Allied Signal Facility at 11600 Sherman Way, North Hollywood, California (File No. 111.0180)*, October 18.
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Table 2-1
Earth Tech 1997 Soil Confirmation Sampling Results

Boring	Total Chromium (mg/kg)		Hexavalent Chromium (mg/kg)	
	Confirmation Soil Sampling	1993 Soil Investigation Sampling	Confirmation Soil Sampling	1993 Soil Investigation Sampling
SBP1-8A	16	583.0 (5')	0.34	28.6 (5')
SBP1-36A	859	1140.0 (5')	0.99	68.2 (5')
SBP1-37A	30.7	1700.0 (5')	ND	33.7 (5')
SBP1-73A	850	340.0 (10')	31	170.0 (10')
SBP1-500	2,280	NA	21.5	NA
SBP1-501	26.6	NA	3.2	NA
SBP1-502	1,650	NA	37.5	NA

Note:

ND = Below Detection Limit

NA = Not Available

Source: Earth Tech, 1997

Table 3-1
Well Construction Details

Well ID	Well Installation Date	Screen Length	Screen Interval (ft bgs)	Total Depth (ft bgs)	Well Diameter (inches)	Screen Size	Screen Type
GW-1	07/12/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-2	07/01/91	60	241-301	301	4	0.030	Sch 80 PVC
GW-3	07/09/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-4	07/03/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-5	06/27/91	60	248-308	308	4	0.030	Sch 80 PVC
GW-6	07/16/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-7	07/01/93	80	230-310	310	4	0.030	Steel
GW-8	07/19/93	80	225-305	305	4	0.030	Steel
GW-9	07/23/93	80	223-303	303	4	0.030	Steel
GW-10	07/12/93	80	230-310	310	4	0.030	Steel

Table 3-2
Summary of Historical Chromium Groundwater Data

Date	Sample type		Well Id	Analytical Result	
				Chromium (mg/L)	Hexavalent Chromium (mg/L)
	Filtration	Collection			
Aug-93	Not Filtered	NA	GW-2	<0.010	-
Aug-93	Not Filtered	NA	GW-3	0.012	-
Aug-93	Not Filtered	NA	GW-6	<0.010	-
07/30/1997	Not Filtered	Bailer	GW-3	1.4	<2.0
07/30/1997	Not Filtered	Bailer (Dup)	GW-3	0.93	1.4
02/27/1998	Not Filtered	Bailer	GW-4	0.043	0.048
02/27/1998	Filtered in Field	Bailer	GW-4	0.021	0.019
07/28/1998	Filtered at Lab	Submersible Pump	GW-3	0.17	0.17
07/28/1998	Not Filtered	Submersible Pump	GW-3	0.17	0.18
07/28/1998	Filtered in Field	Bailer	GW-3	1.1	1.4
07/28/1998	Filtered in Field	Bailer (Dup)	GW-3	1.7	1.7
07/28/1998	Not Filtered	Bailer	GW-3	0.98	0.99
07/28/1998	Not Filtered	Bailer (Dup)	GW-3	0.88	0.57
07/23/1999	Filtered in Field	Bailer	GW-3	1.9	1.8
07/23/1999	Filtered in Field	Bailer (Dup)	GW-3	2	2
02/08/2001	Not Filtered	Submersible Pump	GW-1	0.174	0.151
02/08/2001	Not Filtered	Submersible Pump	GW-2	0.0129	<0.001
02/08/2001	Not Filtered	Submersible Pump	GW-3	5.81	4.61
02/09/2001	Not Filtered	Submersible Pump	GW-6	0.0157	0.001
02/09/2001	Not Filtered	Submersible Pump	GW-7	0.36	0.311
02/09/2001	Not Filtered	Submersible Pump	GW-8	0.00614	0.001
02/09/2001	Not Filtered	Submersible Pump	GW-9	<0.005	0.001
02/09/2001	Not Filtered	Submersible Pump	GW-10	0.617	0.691

(Dup) - Duplicate sample collected

NA - Not available

- Not analyzed

Note:

All bailer samples were collected after proper purging with a submersible pump

Table 4-1
Soil Sampling and Analysis Program

Analytical Parameter	Analytical Method	Sampling Depths				Sampling Objective
		PBP1-01	PBP1-02	PBP1-03	PBP1-04	
Total Chromium	EPA 6010B	Every 10'	Every 10'	Every 10'	Every 10'	Chemical Characterization
Hexavalent Chromium	EPA 7199	Every 10'	Every 10'	Every 10'	Every 10'	Chemical Characterization
Synthetic Precipitation Leaching Procedure (SPLP)	EPA 1312	P	P	P	P	Chemical Characterization
Porosity	API RP40		Every 50'		Every 50'	Geochemical Analysis
pH	SW 9045C		Every 50'		Every 50'	Geochemical Analysis
Total Organic Carbon	SW 9060		Every 50'		Every 50'	Geochemical Analysis
Bulk Density	ASTM D2937		Every 50'		Every 50'	Geochemical Analysis
Grain Size	ASTM D42263		Every 50'		Every 50'	Geochemical Analysis
Moisture Content	ASTM D2216	Every 10'	Every 10'	Every 10'	Every 10'	Geochemical Analysis
Cation Exchange Capacity	EPA 9081		Every 50'		Every 50'	Geochemical Analysis
Total Manganese	EPA 6010B		Every 50'		Every 50'	Geochemical Analysis

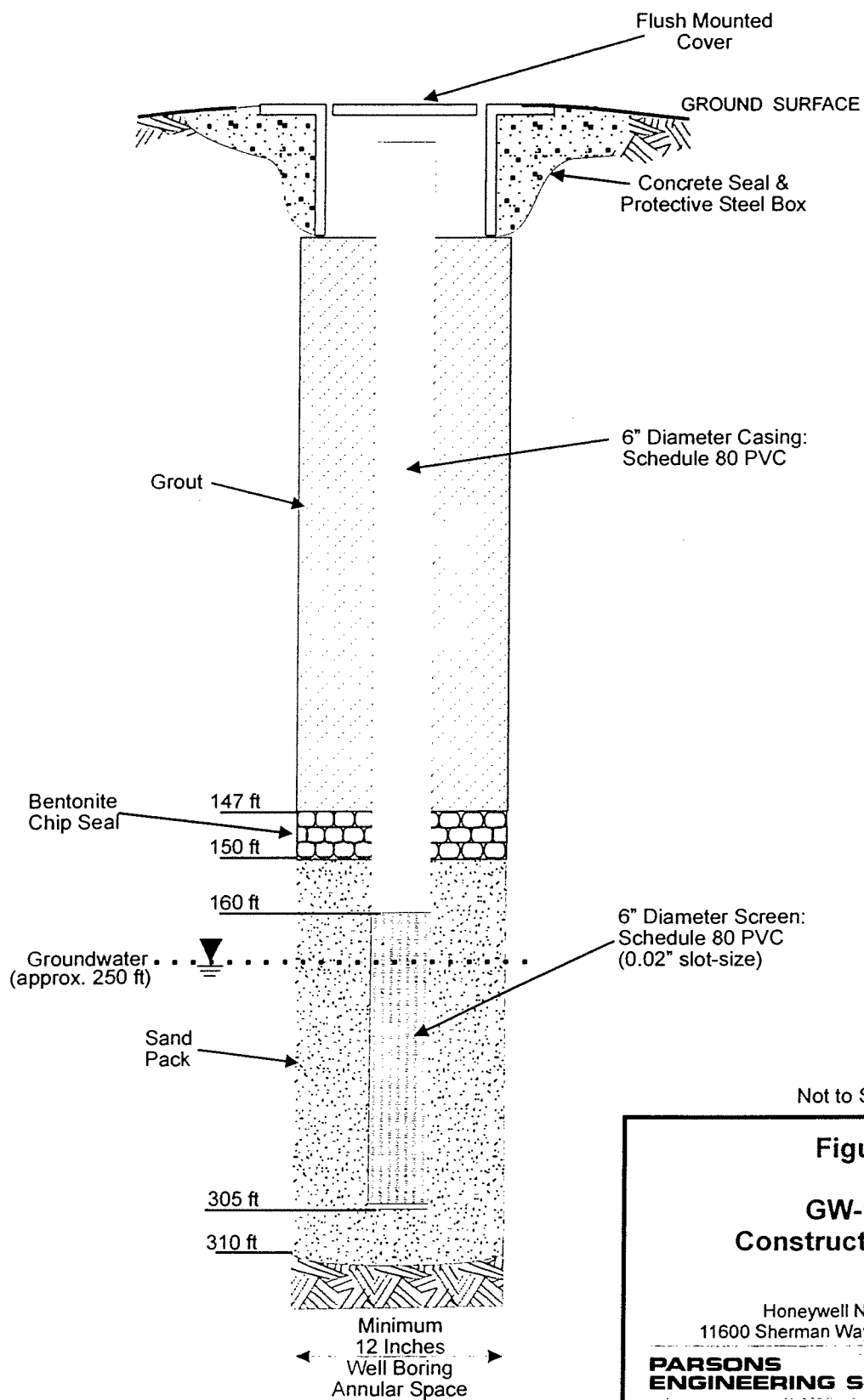
Notes:

1. P = Pending analytical results.
2. Additional geochemical analyses may be requested based on field observations.

Table 4-2
Groundwater Sampling and Analysis Program

Analytical Parameter	Analytical Method	Monitoring Frequency*										Sampling Objective
		GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10	
Total Chromium	EPA 6010B	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Chemical Characterization
Hexavalent Chromium	EPA 7199	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Chemical Characterization
Title 22 Metals	EPA 6010B	A	A	A	A	A	A	A	A	A	A	Chemical Characterization
Total Organic Carbon	EPA 415.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Dissolved Organic Carbon	EPA 415.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Total Dissolved Solids	EPA 160.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Total Suspended Solids	EPA 160.2	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
pH	EPA 150.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Alkalinity	EPA 310.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Iron	EPA 7380	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Manganese	EPA 200.7	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Total Phosphate	EPA 365.2	A	-	A	A	-	-	A	-	-	A	Geochemical Analysis
Total Kjeldahl Nitrogen	EPA 351.3	A	-	A	A	-	-	A	-	-	A	Geochemical Analysis
Total Heterotrophic Microbes	SM 9215C	A	-	A	A	-	-	A	-	-	A	Geochemical Analysis
Chloride, Nitrate, and Sulfate	EPA 9056	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis

* Monitoring frequency: A = Annual, Q = Quarterly, - = Not Planned



Not to Scale

Figure 4-2
GW-14 Well
Construction Diagram

Honeywell North Hollywood
11600 Sherman Way, North Hollywood, CA

PARSONS
ENGINEERING SCIENCE, INC.

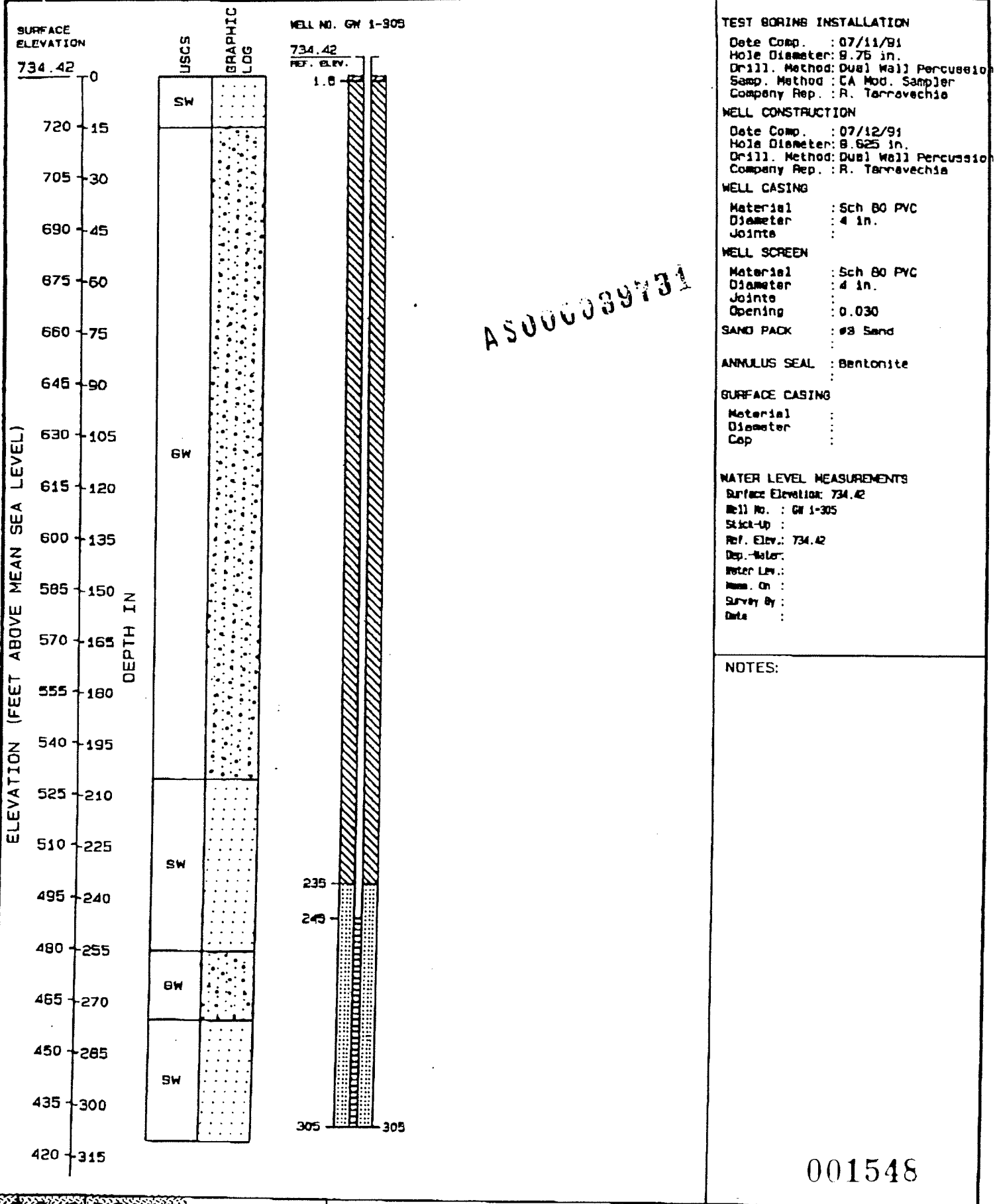
Pasadena, CA

APPENDIX A

**BORING LOGS AND WELL CONSTRUCTION DIAGRAMS FOR
GROUNDWATER MONITORING WELLS**

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		LTR	Description		Major Divisions		LTR	Description	
Coarse Grained Soils	Gravel and Gravelly Soils	GW	Well-graded gravels or gravel-sand mixtures, little or no fines		Fine Grained Soils	Silts and Clays LL<50		Inorganic silts and very fine-grained sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines				ML	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
		GM	Silty gravels, gravel-sand-silt mixtures				CL	Organic silts and organic silt-clays of low plasticity	
		GC	Clayey gravels, gravel-sand-clay mixtures				OL		
	Sand and Sandy Soils	SW	Well-graded sands or gravelly sands, little or no fines			Silts and Clays LL>50		Inorganic silts, micaceous or diatomaceous fine-grained sandy or silty soils, elastic silts	
		SP	Poorly graded sands or gravelly sands, little or no fines				MH	Inorganic clays of high plasticity, fat clays	
		SM	Silty sands, sand-silt mixtures				CH	Organic clays of medium to high plasticity	
		SC	Clayey sands, sand-clay mixtures		OH				
				Highly Organic Soils	Pt	Peat and other highly organic soils			



SURFACE
ELEVATION

737.87

WELL NO. GW 2-301

737.87
REF. ELEV.

TEST BORING INSTALLATION

Date Comp. : 06/28/81
Hole Diameter: 9.75 in.
Drill. Method: Dual Wall Percussion
Samp. Method: CA Mod. Sampler
Company Rep.: R. Terravecchia

WELL CONSTRUCTION

Date Comp. : 07/01/81
Hole Diameter: 8.625 in.
Drill. Method: Dual Wall Percussion
Company Rep.: R. Terravecchia

WELL CASING

Material : Sch 80 PVC
Diameter : 4 in.
Joints :

WELL SCREEN

Material : Sch 80 PVC
Diameter : 4 in.
Joints :
Opening : 0.030

SAND PACK : #3 Sand

ANNULUS SEAL : Bentonite

SURFACE CASING

Material :
Diameter :
Cap :

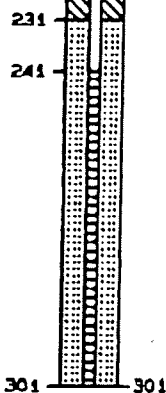
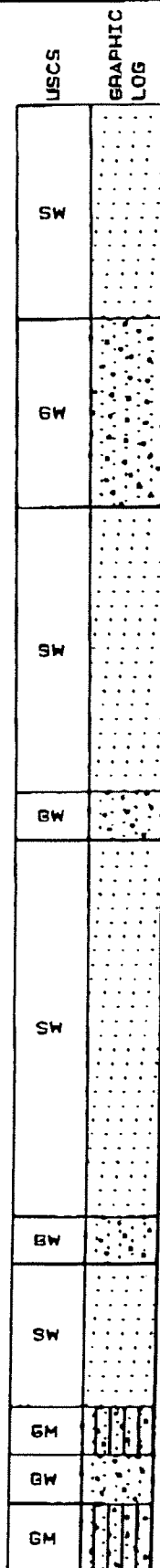
WATER LEVEL MEASUREMENTS

Surface Elevation: 737.87
Well No. : GW 2-301
Stick-Up :
Ref. Elev.: 737.87
Dep. Water:
Water Lev.:
Mm. On :
Survey By :
Date :

NOTES:

ELEVATION (FEET ABOVE MEAN SEA LEVEL)

DEPTH IN



AS000039735

001548

a gleason
associates

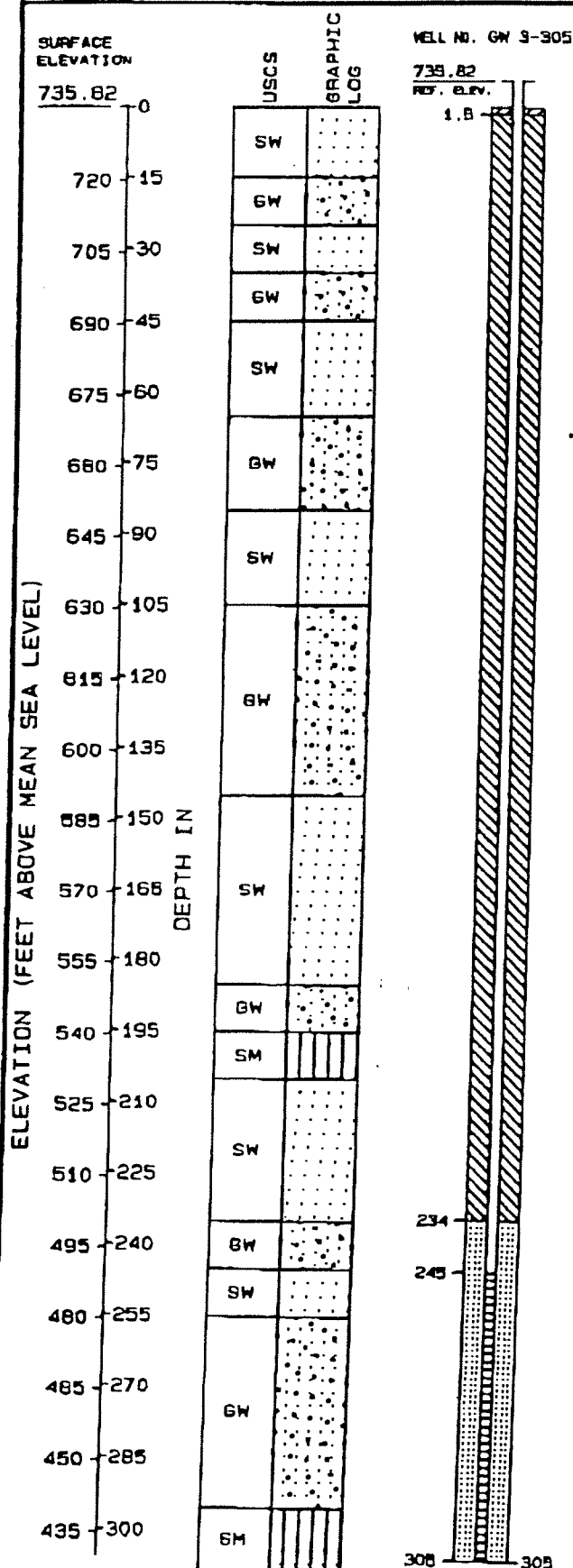
Environmental and Geotechnical Services

ALLIED-SIGNAL AEROSPACE CO.

North Hollywood Site
North Hollywood, California
PROJECT # ASASO NHCA 004

WELL GW 2-301

Date Completed : 07/01/81
Company Rep. : R. Terravecchia
Drilling Method: Dual Wall Percussion
Hole Diameter : 9.625 in.



TEST BORING INSTALLATION

Date Comp. : 07/08/91
Hole Diameter: 9.75 in.
Drill. Method: Dual Wall Percussion
Samp. Method: CA Mod. Sampler
Company Rep. : R. Terravecchia

WELL CONSTRUCTION

Date Comp. : 07/08/91
Hole Diameter: 9.825 in.
Drill. Method: Dual Wall Percussion
Company Rep. : R. Terravecchia

WELL CASING

Material : Sch 80 PVC
Diameter : 4 in.
Joints

WELL SCREEN

Material : Sch 80 PVC
Diameter : 4 in.
Joints : 0.030
Opening

SAND PACK : #3 Sand

ANNULUS SEAL : Bentonite

SURFACE CASING

Material :
Diameter :
Cap

WATER LEVEL MEASUREMENTS

Surface Elevation: 735.82
Well No. : GW 3-305
Stick-Up :
Ref. Elev.: 735.82
Dep. Water:
Water Lvl.:
Press. On :
Survey By :
Date :

NOTES:

AS000039730

001550

McGraw-Hill
associates

Environmental and Geotechnical Services

ALLIED-SIGNAL AEROSPACE CO.

North Hollywood Site
North Hollywood, California
PROJECT # ABABO NHCA 004

WELL GW 3-305

Date Completed : 07/09/91
Company Rep. : R. Terravecchia
Drilling Method: Dual Wall Percussion
Hole Diameter : 9.825 in.

SURFACE
ELEVATION

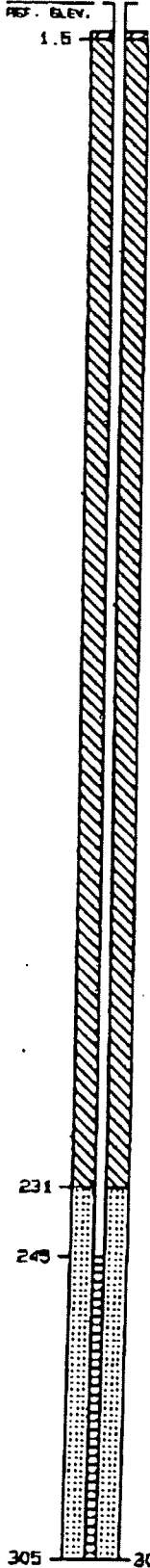
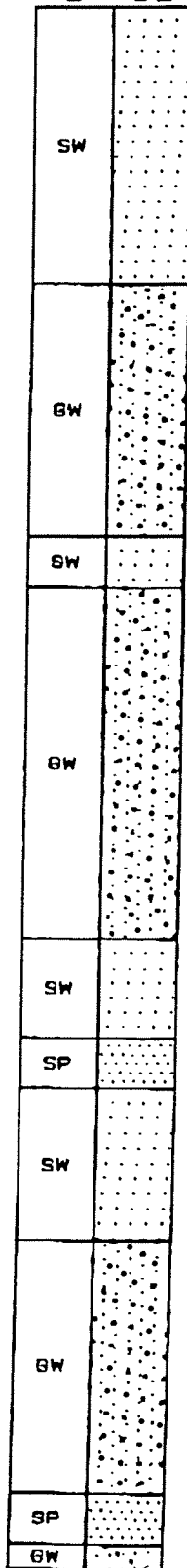
734.66

WELL NO. GW 4-305

734.66
REF. ELEV.

USCS

GRAPHIC
LOG



TEST BORING INSTALLATION

Date Comp. : 7/01/91
Hole Diameter: 9.75 in.
Drill. Method: Dual Wall Percussion
Samp. Method: CA Mod. Sampler
Company Rep. : R. Terravecchia

WELL CONSTRUCTION

Date Comp. : 07/03/91
Hole Diameter: 9.825 in.
Drill. Method: Dual Wall Percussion
Company Rep. : R. Terravecchia

WELL CASING

Material : Sch 80 PVC
Diameter : 4 in.
Joints :

WELL SCREEN

Material : Sch 80 PVC
Diameter : 4 in.
Joints :
Opening : 0.030

SAND PACK

: #3 Sand

ANNULUS SEAL

: Bentonite

SURFACE CASING

Material :
Diameter :
Cap :

WATER LEVEL MEASUREMENTS

Surface Elevation: 734.66
Well No. : GW 4-305
Stick-Up :
Ref. Elev.: 734.66
Dep. Water:
Water Lev.:
Meas. On :
Survey By :
Date :

ASABD 030743

NOTES:

001551

ALLIED-SIGNAL AEROSPACE CO.

North Hollywood Site
North Hollywood, California
PROJECT # ASABD NHCA 004

WELL GW 4-305

Date Completed : 07/03/91
Company Rep. : R. Terravecchia
Drilling Method: Dual Wall Percussion
Hole Diameter : 9.825 in.

T. A. GEASON
associates

Environmental and Geotechnical Services

735.73

735.73
REV. REV.

Date Comp. : 6/25/91
Hole Diameter: 9.75 in.
Drill. Method: Dual Well Percussion
Samp. Method: CA Mod. Sampler
Company Rep. : R. Terravachia

Date Comp. : 08/27/91
Hole Diameter: 8.825 in.
Drill Method: Dual Well Percussion
Company Rep. : R. Tarravochia

Material : Sch 80 PVC
Diameter : 4 in.
Joints :

Material : Sch 80 PVC
Diameter : 4 in.
Joints :
Opening : 0.030

ANNULUS SEAL : Bentonite

Material
Diameter
Can

Well No.: GW B-30B
Stick-Up :
Ref. Elev.: 735.73
Dep.-Water:
Water Lev.:
Mann. On :
Survey By :
Date :

ASUBU39747

001552

ALLIED-SIGNAL AEROSPACE CO.

North Hollywood Site
North Hollywood, California
PROJECT # ASA90 NHCA 004

WELL GW 5-308

Date Completed : 06/27/81
Company Rep. : R. Tarrovecchia
Drilling Method: Dual Wall Percussion
Hole Diameter : 8.625 in.

ELEVATION (FEET ABOVE MEAN SEA LEVEL)

DEPTH IN

575n

GRAPHIC

EW

SW

GW

ME

GW

SW

GW

EM

SP

SP

SW

3W

BW

CP

M

W

W

P

2

308 308

fa gleason
associates

Environmental and Geotechnical Services

ELEVATION (FEET ABOVE MEAN SEA LEVEL)

SURFACE
ELEVATION

739.93

725 15

710 30

695 45

680 60

665 75

650 90

635 105

620 120

605 135

590 150

575 165

560 180

545 195

530 210

515 225

500 240

485 255

470 270

455 285

440 300

DEPTH IN

USCS

GRAPHIC
LOG

GW

GW

SW

GW

SM

SW

GW

SP

SW

SP

SW

WELL NO. GW 6-305

739.83

REF. ELEV.

1.5

235

245

305

305

TEST BORING INSTALLATION

Date Comp. : 07/13/91
 Hole Diameter: 9.75 in.
 Drill. Method: Dual Wall Percussion
 Samp. Method: CA Mod. Sampler
 Company Rep.: R. Terravecchia

WELL CONSTRUCTION

Date Comp. : 07/16/91
 Hole Diameter: 9.825 in.
 Drill. Method: Dual Wall Percussion
 Company Rep.: R. Terravecchia

WELL CASING

Material : 8ch 80 PVC
 Diameter : 4 in.
 Joints :

WELL SCREEN

Material : 8ch 80 PVC
 Diameter : 4 in.
 Joints :
 Opening : 0.030

SAND PACK : #3 Sand

ANNULUS SEAL : Bentonite

SURFACE CASING

Material :
 Diameter :
 Cap :

WATER LEVEL MEASUREMENTS

Surface Elevation: 739.93

Well No. : GW 6-305

Block-Up :

Ref. Elev.: 739.83

Chp.-Water:

Water Lev.:

Mmm. On :

Survey By :

Date :

NOTES:

A SUB 039751

001553

La Gleason
 associates

Environmental and Geotechnical Services

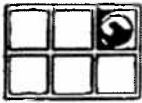
ALLIED-SIGNAL AEROSPACE CO.

Confirmation Borings
 Former LAX Facility
 Los Angeles, California
 PROJECT # ASALAD LACA 080

WELL GW 6-305

Date Completed : 07/16/91
 Company Rep. : R. Terravecchia
 Drilling Method: Dual Wall Percussion
 Hole Diameter : 9.825 in.

AS000082227

GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-7

Project Allied Signal-N. Hollywood Owner Allied Signal
 Location North Hollywood Project No. 042500057/8502 Date drilled 8/22-7/1/83
 Surface Elev. 734.81 ft. Total Hole Depth 310 ft. Diameter 10.0 in.
 Top of Casing Water Level Initial 251 ft. Static
 Screen: Dia 4 in. Length 80.0 ft. Type/Size (Steel) .030 in.
 Casing: Dia 4 in. Length 230 ft. Type 10' Steel and 220' PVC
 Filter Pack Material Sand Rig/Core Type
 Drilling Company Valley Well Drilling Method Percussion Permit #
 Driller Richard Perks Log By Louis Ramirez/Sal Sanchez
 Checked By Larry Higinbotham License No. RG 5487

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 60%
-2						
0						
2						
4						
6						
8						
10					SW	SAND with minor Gravel.
12						
14						
16						
18						
20						Fine SAND with Gravel.
22						
24						
26						
28					SM	Fine SAND with Gravel.
30						
32						
34						
36						
38						
40						Medium SAND with minor Gravel, slightly moist, no odor.
42						
44					SH	
46						
48						
50						Fine SAND, damp, no odor. Vapor probe set at 50' below grade.
52						
54						
56					SM	Very fine SAND with Gravel, dry, no odor.
58						
60						
62						




001554

AS000082228

Drilling Log

Monitoring Well GW-7

GROUNDWATER
TECHNOLOGYProject Allied Signal-N. Hollywood
Location North HollywoodOwner Allied Signal
Project No. 042500057/6502 Date drilled 6/22-7/4 1993

Location North Hollywood						Project No. 001555	
Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure)	
						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 60%	
63					SM	Very fine SAND with coarse Gravel, dry, no odor.	
65							
67							
69							SAND with minor Gravel, damp, no odor.
71							
73							
75							
77							
79							Medium SAND with Gravel, light gray, dry, no odor.
81							
83							
85							
87							
89							Medium SAND with fine Gravel, brown, damp, no odor.
91							
93							
95							
97							
99							Medium SAND with Gravel, brown, damp, no odor.
101							
103							
105					SM		
107							
109						SAND with medium Gravel, brown.	
111							
113							
115							
117							
119						SAND with medium Gravel, brown.	
121							
123							
125							
127							
129						SAND with medium Gravel, brown.	
131							
133							
135							
137							
139						SAND with medium Gravel, brown.	
141							
143							

001555

001555



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082229

Monitoring Well GW-7

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/8502 Date drilled 8/22-7/L 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
143						
145						
147						
149						
151						SAND with medium gravel, brown. Vapor probe set at 150' below grade.
153						
155						
157						
159						
161						SAND with medium Gravel, brown.
163						
165						
167						
169						
171					SM	SAND with medium Gravel, brown.
173						
175						
177						
179						
181						SAND with medium Gravel; brown.
183						
185						
187						
189						
191						SAND with minor Gravel, brown.
193						
195						
197						
199						
201						Fine SAND, brown.
203						
205						
207						
209						
211					SM	Fine SAND, brown.
213						
215						
217						
219						
221						Fine SAND, brown.
223						

001556



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082230

Monitoring Well GW-7

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

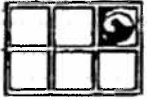
Project No. 042500057/B502 Date drilled 6/22-7/1, 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
223						
225						
227						
229						
231		0	GTI-1-230			Fine SAND, brown. Undisturbed soil sample collected for sieve analyses.
233						
235						
237						
239						
241						Fine SAND, brown, no odor.
243						
245					SM	
247						
249						
251						Fine SAND, brown, damp initially. small amount of water after waiting 15 minutes.
253						Groundwater encountered at 251 feet below grade, 6/24/93
255						
257						
259						
261		0	GTI-1-260			Fine SAND with minor Gravel, brown, saturated. Undisturbed soil sample collected for sieve analysis.
263						
265						
267						
268						
271						SAND with minor Gravel, brown, saturated. Sampler broken off on bottom of boring. No sample retrieved.
273						
275						
277						
279						
281						SAND, brown, saturated.
283						
285					SW	
287						
289						
291						SAND, brown, saturated.
293						
295						
297						
299						
301						SAND, brown, saturated
303						

001557

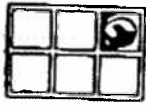
Drilling Log

Monitoring Well GW-7

GROUNDWATER
TECHNOLOGYProject Allied Signal-N. HollywoodOwner Allied SignalLocation North HollywoodProject No. 042500057/6502 Date drilled 8/22-7/1, 1993

Depth (ft.)	Well Completion	P10 (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 60%
303						
305						
307					SW	
309						
311						SAND, brown, saturated.
313						Boring terminated at 310 feet below grade. Well completed to 310 feet below grade, screened to 230 feet below grade, and completed with solid casing to grade. Vapor probes installed at 50 feet below grade and 150 feet below grade. All soil cuttings were placed in bins, covered, and left on site for disposal. All soil types logged from drill cuttings. Soil samples collected at 230' and 280' below grade and submitted for sieve analysis.
315						
317						
319						
321						
323						
325						
327						
329						
331						
333						
335						
337						
339						
341						
343						
345						
347						
349						
351						
353						
355						
357						
359						
361						
363						
365						
367						
369						
371						
373						
375						
377						
379						
381						
383						

001558



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082232

Monitoring Well GW-8

Project Allied Signal-N. Hollywood Owner Allied Signal
Location North Hollywood Project No. 042500057/B502 Date drilled 7/13-7/19/93
Surface Elev. 742.14 ft. Total Hole Depth 320 ft. Diameter 10.0 in.
Top of Casing _____ Water Level Initial 258 ft. Static _____
Screen: Dia 4 in. Length 80.0 ft. Type/Size (Steel) .030 in.
Casing: Dia 4 in. Length 225 ft. Type 10" Steel and 215" PVC
Filter Pack Material Sand Rig/Core Type _____
Drilling Company Valley Well Drilling Method Percussion Permit # _____
Driller Richard Parks Log By Louis Ramirez/Sal Sanchez
Checked By Larry Higinbotham License No. RG 5497

See Site Map
For Boring Location

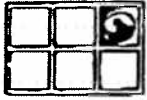
COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ x Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						
2						
4						
6						
8						
10						
12						SAND, brown, no odor.
14						
16						
18						
20						SAND, brown, no odor.
22						
24						
26						
28						
30						
32					SW	SAND, brown, no odor.
34						
36						
38						
40						
42						SAND, brown, no odor.
44						
46						
48						
50						
52						SAND, brown, no odor. Vapor probe installed at 50' below grade.
54						
56						
58						
60						
62						SAND, brown, no odor.

001559

09/28/93 11:53 AM

AS000082233

GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-8

Project Allied Signal-N. Hollywood
Location North HollywoodOwner Allied SignalProject No. 042500057/0502 Date drilled 7/13-7/19, 1993

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure)
						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
63					SW	
65						
67						
69					GM	GRAVEL, light gray.
71						
73						
75						
77						
79						SAND, brown
81						
83						
85						
87						
89						
91						SAND with Gravel
93						
95						
97						
99						
101						SAND with minor Gravel.
103						
105						
107						
109						SW
111						SAND with minor Gravel.
113						
115						
117						
119						
121						SAND with minor Gravel.
123						
125						
127						
129						
131						SAND with minor Gravel.
133						
135						
137						
139						GRAVEL, light gray.
141					GM	
143						

001560

001566

Drilling Log

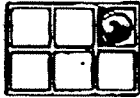
Monitoring Well GW-8

GROUNDWATER
TECHNOLOGYProject Allied Signal-N. HollywoodOwner Allied SignalLocation North HollywoodProject No. 042500057/6502 Date drilled 7/13-7/19, 1993

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
143						
145					GM	
147						
149						
151						SAND with minor Gravel. Vapor probe installed at 150' below grade.
153						
155						
157						
159						SAND with minor Gravel.
161						
163						
165						
167						
169						SAND with minor Gravel.
171						
173					SM	
175						
177						
179						SAND with minor Gravel.
181						
183						
185						
187						
189						SAND with minor Gravel.
191						
193						
195						
197						
199						
201						Fine SAND with minor Gravel. Conductor casing broken and separated at approximately 100' below grade. Continued drilling, pushing casing down hole.
203					SM	
205						
207						
209						
211						SAND with Gravel.
213						
215					SW	
217						
219						
221						SAND with Gravel.
223						

001561

AS000082235

GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-8

Project Allied Signal-N: HollywoodOwner Allied SignalLocation North HollywoodProject No. 042500057/8502 Date drilled 7/13-7/19, 1993

Depth (ft)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
223						
225						
227						
229						
231			G11-2-230			SAND with Gravel. Soil sample collected from drill cuttings and submitted for sieve analysis.
233						
235						
237						
239						
241						SAND with Gravel.
243						
245						
247						
249						
251						SAND with Gravel.
253						
255						
257						
259						Groundwater encountered at 258 feet below grade on 7/15/93
261			G11-2-260		SW	SAND with Gravel. Water on drill bit at approx. 258' below grade. Soil sample taken from drill cuttings and submitted for sieve analysis.
263						
265						
267						
269						
271			G11-2-270			SAND with Gravel, saturated. Soil sample taken from drill cuttings and submitted for sieve analysis.
273						
275						
277						
279						
281						SAND with large Gravel, saturated.
283						
285						
287						
289						
291						SAND with large Gravel, saturated.
293						
295						
297						
299						
301						
303						SAND with Gravel, saturated.

001562



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082236

Monitoring Well GW-8

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/6502

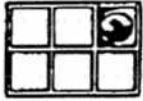
Date drilled 7/13-7/19, 1993

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
303						
305						
307						
309						
311						
313						
315						
317						
319						
321						
323					SW	SAND with Gravel, saturated.
325						
327						
329						
331						
333						
335						
337						
339						
341						
343						
345						
347						
349						
351						
353						
355						
357						
359						
361						
363						
365						
367						
369						
371						
373						
375						
377						
379						
381						
383						

SAND with Gravel, saturated

Boring terminated at 320 feet below grade. Soil cuttings were placed in bins, covered, and left on site for disposal. All soil types logged from drill cuttings. Vapor probes installed at 50 and 150 feet below grade. Soil samples collected from drill cuttings at 230, 260 and 270 feet below grade, and submitted for sieve analysis.

001563



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-9

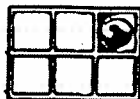
Project Allied Signal-N. Hollywood Owner Allied Signal
 Location North Hollywood Project No. 042500057/B502 Date drilled 7/20-7/23, 1983
 Surface Elev. 740.88 ft. Total Hole Depth 310 ft. Diameter 10.0 in.
 Top of Casing _____ Water Level Initial 247 ft. Static _____
 Screen: Dia 4 in. Length 80.0 ft. Type/Size 1/2" Steel .030 in.
 Casing: Dia 4 in. Length 223 ft. Type 10' Steel and 213' PVC
 Filter Pack Material Sand Rig/Core Type _____
 Drilling Company Valley Well Drilling Method Percussion Permit # _____
 Driller Richard Parks Log By Louis Ramirez/Sal Sanchez
 Checked By Larry Highbotham License No. RG 5487

See Site Map
For Boring Location
1983

COMMENTS:

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						
2						
4						
6						
8						
10						
12						SAND with Gravel, no odor.
14						
16						
18						
20						SAND with Gravel, no odor.
22						
24						
26						
28						
30						SAND with Gravel, no odor.
32					SW	
34						
36						
38						
40						SAND with minor Gravel, no odor.
42						
44						
46						
48						
50						SAND with minor Gravel, no odor. Vapor probe installed at 50' below grade.
52						
54						
56						
58						
60						
62						SAND with Gravel and Cobbles.

001564



GROUNDWATER
TECHNOLOGY

Drilling Log

A5000082238

Monitoring Well GW-9

Project Allied Signal-N. Hollywood

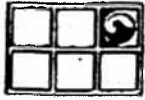
Owner Allied Signal

Location North Hollywood

Project No. 042500057/8502

Date drilled 1/20-1/23, 1993

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure)
						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
63						
65						
67					SK	
69						
71						GRAVEL with Cobbles and Sand, light gray.
73						
75						
77						
79						
81					GM	GRAVEL with Cobbles and Sand, brown.
83						
85						
87						
89						
91						GRAVEL with Cobbles and Sand, brown.
93						
95						SAND with minor Gravel, brown.
97						
99						
101						SAND with minor Gravel, brown.
103						
105						
107						
109						
111						SAND with Gravel, brown.
113						
115						
117					SH	
119						
121						SAND with Gravel, brown
123						
125						
127						
129						
131						SAND with Gravel, brown.
133						
135						
137						
139						
141					GM	GRAVEL with Sand, gray.
143						



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-9

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

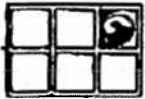
Project No. 042500057/6502 Date drilled 7/20-7/23, 1983

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
143						
145						
147						
149						
151					GM	GRAVEL with Sand, gray. Vapor probe installed at 150' below grade.
153						
155						
157						
159						
161						SAND with Gravel.
163						
165						
167						
169						
171						SAND with minor Gravel.
173						
175						
177						
179						
181						SAND with minor Gravel.
183						
185						
187						
189						
191					SM	SAND with minor Gravel.
193						
195						
197						
199						
201						SAND with minor Gravel.
203						
205						
207						
209						
211						SAND with minor Gravel, brown.
213						
215						
217						
219						
221						SAND with minor Gravel, brown.
223						

AS000082240

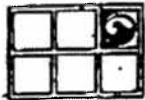
Drilling Log

Monitoring Well GW-9

GROUNDWATER
TECHNOLOGYProject Allied Signal-N. HollywoodOwner Allied SignalLocation North HollywoodProject No. 042500051/8502 Date drilled 7/20-7/23, 1993

Depth (ft)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 60%
223						
225						
227						
229						
231		0	G11-3-230			SAND with minor Gravel, brown. Soil sample collected from drill cuttings and submitted for sieve analysis.
233						
235					SW	
237						
239						
241						SAND with minor Gravel, brown.
243						
245						
247						Groundwater encountered at 247 feet below grade: 7/21/93
249		0	G11-3-250		SM	Fine SAND with minor Gravel. Drill bit is wet at approximately 247' below grade. Undisturbed soil sample collected and submitted for sieve analysis.
251						
253						
255						
257						
259		0	G11-3-260			SAND with minor Gravel, saturated. Undisturbed soil sample collected and submitted for sieve analysis.
261						
263						
265						
267						
269						
271						SAND with minor Gravel, saturated.
273						
275						
277						
279						
281					SM	SAND with minor Gravel, saturated.
283						
285						
287						
289						
291						SAND with minor Gravel, saturated.
293						
295						
297						
299						
301						SAND with minor Gravel, saturated.
303						

001567



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082241

Monitoring Well, GW-9

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/0502 Date drilled 7/20-7/23, 1983

Depth (ft)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
303						
305						
307					SM	
309						
311						SAND with minor Gravel, saturated.
313						Boring terminated at 310 feet below grade. Well completed to 305 feet below grade. Vapor probes placed at 50 feet and 150 feet below grade. All soil types logged from drill cuttings. Undisturbed soil samples collected from 250 and 260 feet below grade, and drill cuttings collected from 230 feet below grade, and submitted for sieve analysis.
315						
317						
319						
321						
323						
325						
327						
329						
331						
333						
335						
337						
339						
341						
343						
345						
347						
349						
351						
353						
355						
357						
359						
361						
363						
365						
367						
369						
371						
373						
375						
377						
379						
381						
383						

001568



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082242
Monitoring Well GW-10

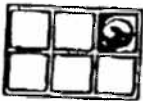
Project Allied Signal-N. Hollywood Owner Allied Signal
Location North Hollywood Project No. 042500057/0502 Date drilled 7/2-7/12, 1993
Surface Elev. 737.84 ft. Total Hole Depth 310 ft. Diameter 10.0 in.
Top of Casing _____ Water Level Initial 247 ft. Static _____
Screen: Dia 4 in. Length 80.0 ft. Type/Size (Steel) .030 in.
Casing: Dia 4 in. Length 230 ft. Type 10' Steel and 220' PVC
Filter Pack Material Sand Rig/Core Type _____
Drilling Company Valley Well Drilling Method Percussion Permit # _____
Driller Richard Perks Log By Louis Ramirez/Sal Sanchez
Checked By Larry Higinbotham License No. RG 5487

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And .35% to 50%
-2						
0						
2						
4						
6					GM	Hard GRAVEL and Cobbles.
8						
10						SAND at 9 feet.
12						
14						
16						
18						
20						SAND with minor Gravel, brown, soft, no odor.
22						
24						
26						
28						
30						SAND, brown, soft, no odor.
32						
34					SM	
36						
38						
40						SAND, brown, soft, no odor.
42						
44						
46						
48						
50						SAND, brown, soft, no odor. Vapor probe set at 50 feet below grade.
52						
54						
56						
58						
60						GRAVEL and Cobble layer.
62					GM	

001569



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082243

Monitoring Well GW-

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/B502

Date drilled 7/2-7/12, 1993

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And, 35% to 5
63						
65						
67						
69						
71						
73						
75						
77						
79						
81						
83						
85						
87						
89						
91						
93						
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121						
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127						
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131						
133						
135						
137						
139						
141						
143						

AS000082244

Drilling Log

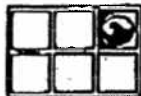
Monitoring Well GW-10

GROUNDWATER
TECHNOLOGYProject Allied Signal-N. HollywoodOwner Allied SignalLocation North HollywoodProject No. 042500057/8502 Date drilled 7/2-7/12, 1993

Description					
(Color, Texture, Structure)					
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%					
143					
145					
147					
149					
151					SAND with minor Gravel, brown. Vapor probe set at 150' below grade.
153					
155					
157					
159					
161					SAND with minor Gravel, brown, no odor.
163					
165					
167					
169					
171					SAND with minor Gravel, brown, no odor.
173					
175					
177					
179					
181					SAND with minor Gravel, brown, no odor.
183				SW	
185					
187					
189					
191					SAND with minor Gravel, brown, no odor.
193					
195					
197					
199					
201					SAND with minor Gravel, brown, no odor.
203					
205					
207					
209					
211					SAND with minor Gravel, brown, no odor.
213					
215					
217					
219					
221					SAND with minor Gravel, brown, no odor.
223					

001571

001571



GROUNDWATER
TECHNOLOGY •

Drilling Log

Monitoring Well GW-10

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/0502

Date drilled 7/2-7/12, 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
223						
225						
227						
229						
231		0	G11-4-230		SM	SAND with minor Gravel, brown, no odor. Undisturbed soil sample collected and submitted for sieve analysis.
233						
235						
237						
239						
241						Fine SAND, brown, no odor.
243					SM	
245						
247						Groundwater encountered at 247 feet below grade: 7/8/93
249						
251		0.5	G11-4-250			SAND. Undisturbed soil sample collected and submitted for sieve analysis.
253						
255						
257						
259						
261						SAND, saturated. Undisturbed soil sample collected and submitted for sieve analysis.
263						
265						
267						
269						
271		0.2	G11-4-270			SAND with minor Gravel, saturated.
273						
275					SM	
277						
279						
281						SAND with minor Gravel, saturated.
283						
285						
287						
289						
291						SAND with minor Gravel, saturated.
293						
295						
297						
299						
301						SAND with minor Gravel, saturated.
303						

001572



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082246

Monitoring Well GW-10

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/8502

Date drilled 7/2-7/12, 1993

Depth (ft.)	Well Completion	PDO (ppm)	Sample ID Blow Count & Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
303						
305						
307						
309						
311					SW	SAND with minor Gravel, saturated.
313						Terminated boring at 310 feet below grade surface. Well installed to 310 feet below grade surface. All cuttings were placed in bins, covered, and left on site for disposal. All soil types logged from drill cuttings. Vapor probes installed at 50 and 150 feet below grade. Undisturbed soil samples collected at 230, 250 and 260 feet below grade, and submitted for sieve analysis.
315						
317						
319						
321						
323						
325						
327						
329						
331						
333						
335						
337						
339						
341						
343						
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APPENDIX B

SUMMARY OF GTI CHROMIUM DATA

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 1A of 28A
Date: 09/13/93

4500006635

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBNP-01	01/11/93	1.0	—	—	—	—
SBNP-01	01/11/93	5.0	—	—	—	—
SBNP-01	01/11/93	10.0	—	—	—	—
SBNP-02	01/11/93	1.0	—	—	—	—
SBNP-02	01/11/93	5.0	—	—	—	—
SBNP-02	01/11/93	10.0	—	—	—	—
SBNP-03	01/11/93	1.0	—	—	—	—
SBNP-03	01/11/93	5.0	—	—	—	—
SBNP-03	01/11/93	10.0	—	—	—	—
SBP1-001	03/30/93	1.0	—	—	—	—
SBP1-001	03/30/93	5.0	—	—	—	—
SBP1-001	03/30/93	10.0	—	—	—	—
SBP1-002	03/30/93	1.0	—	—	—	—
SBP1-002	03/30/93	5.0	—	—	—	—
SBP1-002	03/30/93	10.0	—	—	—	—
SBP1-003	04/12/93	1.0	—	—	—	—
SBP1-003	04/12/93	2.0	—	—	—	—
SBP1-004	02/01/93	1.0	—	—	11.9	11900
SBP1-004	02/01/93	5.0	—	—	14.5	14500
SBP1-004	02/01/93	10.0	—	—	<1.5	<1500
SBP1-004	02/01/93	15.0	—	—	6.4	6400
SBP1-004	02/01/93	20.0	—	—	9.3	9300
SBP1-004	02/01/93	25.0	—	—	7.2	7200
SBP1-004	02/01/93	30.0	—	—	6.9	6900
SBP1-004	02/01/93	35.0	—	—	5.2	5200
SBP1-004	02/01/93	40.0	—	—	2.7	2700
SBP1-005	01/25/93	1.0	—	—	14.9	14900
SBP1-005	01/25/93	5.0	—	—	17.8	17800
SBP1-005	01/25/93	10.0	—	—	5.2	5200
SBP1-005	01/25/93	15.0	—	—	6.7	6700
SBP1-005	01/25/93	20.0	—	—	7.9	7900
SBP1-006	01/27/93	1.0	—	—	3.7	3700
SBP1-006	01/27/93	5.0	—	—	2.7	2700
SBP1-006	01/27/93	10.0	—	—	4.6	4600

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless noted
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 2A of 2
Date: 09/13/93

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SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-006	01/27/93	15.0	—	—	3.4	3400
SBP1-006	01/27/93	20.0	—	—	3.5	3500
SBP1-007	01/27/93	1.0	—	—	9.5	9500
SBP1-007	01/27/93	5.0	—	—	3.0	3000
SBP1-007	01/27/93	10.0	—	—	3.3	3300
SBP1-007	01/27/93	15.0	—	—	2.5	2500
SBP1-007	01/27/93	20.0	—	—	2.0	2000
SBP1-008	03/18/93	3.0	0.226	(0.019)	10.4	10400
SBP1-008	03/18/93	5.0	28.6	0.723	583	583000
SBP1-008	03/18/93	10.0	0.294	(0.019)	12.5	12500
SBP1-008	03/18/93	15.0	(0.170)	(0.009)	5.2	5200
SBP1-008	03/18/93	20.0	1.64	0.413	23.7	23700
SBP1-008	03/18/93	25.0	3.91	0.301	11.6	11600
SBP1-008	03/18/93	30.0	3.54	0.280	14.1	14100
SBP1-008	03/18/93	35.0	3.38	0.287	20.6	20600
SBP1-008	03/18/93	40.0	3.85	0.415	14.8	14800
SBP1-009	03/18/93	1.0	<0.2	0.046	8.4	8400
SBP1-009	03/18/93	5.0	7.39	0.247	22.0	22000
SBP1-009	03/18/93	10.0	<0.2	<0.02	2.6	2600
SBP1-009	03/18/93	15.0	<0.2	<0.02	4.5	4500
SBP1-009	03/18/93	20.0	0.463	0.038	6.2	6200
SBP1-009	03/18/93	25.0	1.11	0.091	9.4	9400
SBP1-009	03/18/93	30.0	<0.2	0.116	13.8	13800
SBP1-009	03/18/93	35.0	1.41	0.100	10.8	10800
SBP1-010	03/29/93	1.0	—	—	—	—
SBP1-010	03/29/93	6.0	—	—	—	—
SBP1-010	03/29/93	10.0	—	—	—	—
SBP1-010	03/29/93	15.0	—	—	—	—
SBP1-011	03/29/93	1.0	—	—	—	—
SBP1-011	03/29/93	5.0	—	—	—	—
SBP1-011	03/29/93	10.0	—	—	—	—
SBP1-011	03/29/93	15.0	—	—	—	—
SBP1-012	03/30/93	1.0	—	—	—	—
SBP1-012	03/30/93	5.0	—	—	—	—

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

001575A

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 3A of 28A
Date: 09/13/93

A50000000007

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VII) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-012	03/30/93	10.0	—	—	—	—
SBP1-012	03/30/93	15.0	—	—	—	—
SBP1-013	03/30/93	1.0	—	—	—	—
SBP1-013	03/30/93	5.0	—	—	—	—
SBP1-013	03/30/93	10.0	—	—	—	—
SBP1-013	03/30/93	15.0	—	—	—	—
SBP1-014	04/08/93	1.0	—	—	—	—
SBP1-014	04/08/93	5.0	—	—	—	—
SBP1-014	04/08/93	10.0	—	—	—	—
SBP1-015	04/08/93	1.0	—	—	—	—
SBP1-015	04/08/93	5.0	—	—	—	—
SBP1-015	04/08/93	10.0	—	—	—	—
SBP1-016	04/06/93	1.0	—	—	—	—
SBP1-016	04/06/93	5.0	—	—	—	—
SBP1-016	04/06/93	10.0	—	—	—	—
SBP1-016	04/06/93	15.0	—	—	—	—
SBP1-016	04/06/93	20.0	—	—	—	—
SBP1-017	04/08/93	1.0	—	—	—	—
SBP1-017	04/08/93	5.0	—	—	—	—
SBP1-017	04/08/93	10.0	—	—	—	—
SBP1-017	04/08/93	15.0	—	—	—	—
SBP1-017	04/08/93	20.0	—	—	—	—
SBP1-018	04/06/93	1.0	—	—	—	—
SBP1-018	04/06/93	5.0	—	—	—	—
SBP1-018	04/06/93	10.0	—	—	—	—
SBP1-018	04/07/93	16.0	—	—	—	—
SBP1-019	04/08/93	1.0	—	—	—	—
SBP1-019	04/08/93	5.0	—	—	—	—
SBP1-019	04/08/93	10.0	—	—	—	—
SBP1-019	04/08/93	15.0	—	—	—	—
SBP1-020	04/08/93	1.0	—	—	—	—
SBP1-020	04/08/93	5.0	—	—	—	—
SBP1-020	04/08/93	12.0	—	—	—	—
SBP1-020	04/08/93	15.0	—	—	—	—

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless noted
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 4A of 2
Date: 09/13/93

A500006698

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP1-021	01/25/93	1.0	---	---	---	---
SBP1-021	01/25/93	5.0	---	---	---	---
SBP1-021	01/25/93	10.0	---	---	---	---
SBP1-021	01/25/93	15.0	---	---	---	---
SBP1-021	01/25/93	20.0	---	---	---	---
SBP1-021	01/25/93	25.0	---	---	---	---
SBP1-021	01/25/93	30.0	---	---	---	---
SBP1-021	01/25/93	35.0	---	---	---	---
SBP1-021	01/25/93	40.0	---	---	---	---
SBP1-022	04/08/93	3.5	---	---	---	---
SBP1-022	04/08/93	5.0	---	---	---	---
SBP1-022	04/08/93	10.0	---	---	---	---
SBP1-022	04/08/93	15.0	---	---	---	---
SBP1-022	04/08/93	20.0	---	---	---	---
SBP1-023	04/09/93	3.0	---	---	---	---
SBP1-023	04/09/93	5.0	---	---	---	---
SBP1-023	04/09/93	10.0	---	---	---	---
SBP1-023	04/09/93	15.0	---	---	---	---
SBP1-023	04/09/93	20.0	---	---	---	---
SBP1-024	01/20/93	10.0	---	---	---	---
SBP1-024	01/20/93	20.0	---	---	---	---
SBP1-024	01/20/93	30.0	---	---	---	---
SBP1-024	01/20/93	35.0	---	---	---	---
SBP1-024	01/20/93	40.0	---	---	---	---
SBP1-025	01/20/93	10.0	---	---	---	---
SBP1-025	01/20/93	20.0	---	---	---	---
SBP1-025	01/20/93	30.0	---	---	---	---
SBP1-025	01/20/93	35.0	---	---	---	---
SBP1-025	01/20/93	40.0	---	---	---	---
SBP1-026	01/14/93	1.0	---	---	---	---
SBP1-026	01/14/93	5.0	---	---	---	---
SBP1-026	01/14/93	10.0	---	---	---	---
SBP1-026	01/14/93	15.0	---	---	---	---
SBP1-026	01/14/93	20.0	---	---	---	---

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 5A of 28A
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A5000050639

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-027	01/14/93	1.0	---	---	---	---
SBP1-027	01/14/93	5.0	---	---	---	---
SBP1-027	01/14/93	10.0	---	---	---	---
SBP1-027	01/14/93	15.0	---	---	---	---
SBP1-027	01/14/93	20.0	---	---	---	---
SBP1-028	01/14/93	1.0	---	---	---	---
SBP1-028	01/14/93	5.0	---	---	---	---
SBP1-028	01/14/93	10.0	---	---	---	---
SBP1-028	01/14/93	15.0	---	---	---	---
SBP1-028	01/14/93	20.0	---	---	---	---
SBP1-029	01/14/93	1.0	---	---	---	---
SBP1-029	01/14/93	5.0	---	---	---	---
SBP1-029	01/14/93	10.0	---	---	---	---
SBP1-029	01/14/93	15.0	---	---	---	---
SBP1-029	01/14/93	20.0	---	---	---	---
SBP1-030	01/12/93	1.0	---	---	---	---
SBP1-030	01/12/93	5.0	---	---	---	---
SBP1-030	01/12/93	10.0	---	---	---	---
SBP1-030	01/12/93	15.0	---	---	---	---
SBP1-030	01/12/93	20.0	---	---	---	---
SBP1-030	01/12/93	25.0	---	---	---	---
SBP1-030	01/12/93	30.0	---	---	---	---
SBP1-030	01/12/93	35.0	---	---	---	---
SBP1-030	01/12/93	40.0	---	---	---	---
SBP1-031	01/12/93	1.0	---	---	---	---
SBP1-031	01/12/93	5.0	---	---	---	---
SBP1-031	01/12/93	10.0	---	---	---	---
SBP1-031	01/12/93	15.0	---	---	---	---
SBP1-031	01/12/93	20.0	---	---	---	---
SBP1-032	01/12/93	1.0	---	---	---	---
SBP1-032	01/12/93	5.0	---	---	---	---
SBP1-032	01/12/93	10.0	---	---	---	---
SBP1-032	01/12/93	15.0	---	---	---	---
SBP1-032	01/12/93	20.0	---	---	---	---

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless note
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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 6A of
Date: 09/13/9

AS000966700

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-033	01/11/93	1.0	—	—	—	—
SBP1-033	01/11/93	5.0	—	—	—	—
SBP1-033	01/11/93	10.0	—	—	—	—
SBP1-033	01/11/93	15.0	—	—	—	—
SBP1-033	01/11/93	20.0	—	—	—	—
SBP1-033	01/11/93	25.0	—	—	—	—
SBP1-033	01/11/93	30.0	—	—	—	—
SBP1-033	01/11/93	35.0	—	—	—	—
SBP1-033	01/11/93	40.0	—	—	—	—
SBP1-033	01/11/93	45.0	—	—	—	—
SBP1-034	03/19/93	1.0	<0.2	<0.02	<1.5	<1500
SBP1-034	03/19/93	5.0	<0.2	<0.02	<1.5	<1500
SBP1-034	03/19/93	10.0	<0.2	<0.02	5.8	5800
SBP1-034	03/19/93	15.0	<0.2	<0.02	2.4	2400
SBP1-034	03/23/93	22.0	—	—	8.4	8400
SBP1-034	03/23/93	25.0	—	—	8.6	8600
SBP1-034	03/23/93	30.0	—	—	9.2	9200
SBP1-034	03/23/93	35.0	—	—	7.9	7900
SBP1-034	03/23/93	40.0	—	—	23.3	23300
SBP1-034	03/23/93	45.0	—	—	18.0	18000
SBP1-035	03/19/93	1.0	<0.2	<0.02	2.6	2600
SBP1-035	03/19/93	5.0	<0.2	<0.02	<1.5	<1500
SBP1-035	03/19/93	10.0	<0.2	<0.02	7.5	7500
SBP1-035	03/19/93	15.0	<0.2	<0.02	22.8	22800
SBP1-035	03/19/93	20.0	—	—	5.5	5500
SBP1-035	03/19/93	25.0	<0.2	0.307	17.8	17800
SBP1-035	03/19/93	30.0	2.60	0.243	7.0	7000
SBP1-035	03/19/93	35.0	2.11	0.187	15.7	15700
SBP1-035	03/19/93	40.0	4.36	0.316	3.3	3300
SBP1-036	03/19/93	5.0	62.8	0.342	1140	1140000
SBP1-036	03/19/93	10.0	51.3	0.039	572	572000
SBP1-036	03/19/93	15.0	0.904	0.082	642	642000
SBP1-036	03/19/93	20.0	44.7	0.932	887	887000
SBP1-036	03/19/93	25.0	17.9	0.440	332	332000

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

001577A

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

A5000000701

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP1-036	03/19/93	30.0	20.3	0.850	477	477000
SBP1-036	03/19/93	35.0	23.1	0.783	671	671000
SBP1-036	03/19/93	40.0	82.0	0.905	233	233000
SBP1-036B	07/13/93	40.0	14	0.46	370	370000
SBP1-036B	07/13/93	45.0	8.7	0.78	180	180000
SBP1-036B	07/13/93	50.0	9.6	0.49	110	110000
SBP1-037	03/19/93	1.0	<0.2	0.032	21.8	21800
SBP1-037	03/19/93	5.0	33.7	3.40	1700	1700000
SBP1-037	03/19/93	10.0	6.23	0.571	212	212000
SBP1-037	03/19/93	15.0	<0.2	0.528	420	420000
SBP1-037	03/19/93	20.0	0.429	0.044	13.9	13900
SBP1-037	03/19/93	25.0	<0.2	<0.02	6.7	6700
SBP1-037	03/19/93	30.0	3.16	0.352	9.1	9100
SBP1-037	03/19/93	35.0	1.88	0.191	<1.5	<1500
SBP1-037	03/19/93	40.0	3.88	0.374	4.0	4000
SBP1-038	03/19/93	1.0	<0.2	<0.02	19.6	19600
SBP1-038	03/19/93	5.0	<0.2	<0.02	7.5	7500
SBP1-038	03/19/93	10.0	53.1	6.08	92.5	92500
SBP1-038	03/19/93	15.0	10.1	1.69	23.3	23300
SBP1-038	03/19/93	20.0	3.50	0.327	42.9	42900
SBP1-038	03/19/93	25.0	32.8	4.36	53.8	53800
SBP1-038	03/19/93	30.0	50.2	5.23	78.2	78200
SBP1-038	03/19/93	35.0	45.0	6.41	77.9	77900
SBP1-038	03/19/93	40.0	79.1	8.79	169	169000
SBP1-038B	07/13/93	40.0	120	5.3	390	390000
SBP1-038B	07/13/93	45.0	77	11	180	180000
SBP1-038B	07/13/93	50.0	43	3.1	96	96000
SBP1-038B	07/13/93	55.0	51	4.7	220	220000
SBP1-039A	03/19/93	1.0	<0.2	3.91	4.8	4800
SBP1-039A	03/19/93	5.0	23.2	2.82	47.8	47800
SBP1-039A	03/19/93	10.0	27.5	3.39	59.4	59400
SBP1-039A	03/19/93	15.0	16.8	2.14	30.6	30600
SBP1-039A	03/19/93	20.0	12.5	1.94	20.2	20200
SBP1-039A	03/19/93	25.0	26.3	2.91	40.3	40300

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

A5000066702

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-039A	03/19/93	30.0	23.2	2.45	43.0	43000
SBP1-039A	03/19/93	35.0	8.95	0.888	12.1	12100
SBP1-039A	03/19/93	40.0	9.45	1.04	18.7	18700
SBP1-039B	03/18/93	1.0	<0.2	<0.02	10.8	10800
SBP1-039B	03/18/93	5.0	0.554	0.043	14.3	14300
SBP1-039B	03/18/93	10.0	(0.113)	(0.010)	10.4	10400
SBP1-039B	03/18/93	15.0	(0.034)	(0.006)	1.7	1700
SBP1-039B	03/18/93	20.0	3.84	0.372	6.9	6900
SBP1-039B	03/18/93	25.0	<0.2	0.219	9.5	9500
SBP1-039B	03/18/93	30.0	<0.2	0.456	12.9	12900
SBP1-039B	03/18/93	35.0	<0.2	0.225	11.6	11600
SBP1-039B	03/18/93	40.0	1.18	0.228	4.7	4700
SBP1-040	03/19/93	1.0	<0.2	0.026	5.7	5700
SBP1-040	03/19/93	5.0	0.339	0.029	6.2	6200
SBP1-040	03/19/93	10.0	<0.2	0.874	6.1	6100
SBP1-040	03/19/93	15.0	4.45	0.606	4.8	4800
SBP1-040	03/19/93	20.0	8.50	1.23	10.0	10000
SBP1-040	03/19/93	25.0	5.94	0.798	8.9	8900
SBP1-040	03/19/93	30.0	3.24	0.440	3.6	3600
SBP1-040	03/19/93	35.0	4.21	0.405	7.2	7200
SBP1-040	03/19/93	40.0	4.41	0.695	13.3	13300
SBP1-041	03/18/93	1.0	<0.2	<0.02	9.2	9200
SBP1-041	03/18/93	6.0	<0.2	0.035	16.7	16700
SBP1-041	03/18/93	10.0	0.508	0.034	13.0	13000
SBP1-041	03/18/93	15.0	0.881	0.103	6.6	6600
SBP1-041	03/18/93	20.0	<0.2	0.109	6.0	6000
SBP1-041	03/18/93	25.0	2.20	0.209	9.6	9600
SBP1-041	03/18/93	30.0	2.11	0.152	7.2	7200
SBP1-041	03/18/93	35.0	3.91	0.286	7.6	7600
SBP1-041	03/18/93	40.0	5.33	0.522	8.0	8000
SBP1-042	04/05/93	1.0	—	—	—	—
SBP1-042	04/05/93	5.0	—	—	—	—
SBP1-042	04/05/93	10.0	—	—	—	—
SBP1-043	04/05/93	1.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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STLC (Ca.) AS0000000703

SITE	DATE	DEPTH	Chromium (VII) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-043	04/05/93	5.0	--	--	--	--
BP1-043	04/05/93	10.0	--	--	--	--
BP1-044	04/05/93	1.0	--	--	--	--
SBP1-044	04/05/93	5.0	--	--	--	--
BP1-044	04/05/93	10.0	--	--	--	--
SBP1-045	04/08/93	1.0	--	--	--	--
SBP1-045	04/08/93	5.0	--	--	--	--
BP1-045	04/08/93	10.0	--	--	--	--
SBP1-046	01/21/93	1.0	--	--	--	--
BP1-046	01/21/93	3.0	--	--	--	--
SBP1-046	01/21/93	8.0	--	--	--	--
SBP1-046	01/21/93	14.0	--	--	--	--
BP1-047	01/20/93	1.0	--	--	--	--
SBP1-047	01/20/93	3.0	--	--	--	--
BP1-047	01/20/93	8.0	--	--	--	--
SBP1-047	01/20/93	13.0	--	--	--	--
SBP1-047	01/20/93	18.0	--	--	--	--
SBP1-047	01/20/93	23.0	--	--	--	--
SBP1-047	01/20/93	28.0	--	--	--	--
SBP1-048	04/05/93	1.0	--	--	--	--
SBP1-048	04/05/93	5.0	--	--	--	--
SBP1-048	04/05/93	10.0	--	--	--	--
SBP1-048	04/05/93	15.0	--	--	--	--
SBP1-048	04/05/93	20.0	--	--	--	--
SBP1-049	04/05/93	1.0	--	--	--	--
SBP1-049	04/05/93	10.0	--	--	--	--
SBP1-049	04/05/93	15.0	--	--	--	--
SBP1-049	04/05/93	20.0	--	--	--	--
SBP1-050	03/23/93	2.0	--	--	--	--
SBP1-050	03/23/93	5.0	--	--	--	--
SBP1-050	03/23/93	10.0	--	--	--	--
SBP1-051	03/23/93	2.5	--	--	--	--
SBP1-051	03/23/93	5.0	--	--	--	--
SBP1-051	03/23/93	10.0	--	--	--	--

Not detected at indicated reporting limit -- = Not sampled and/or analyzed All values represent total concentrations unless noted

= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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A5000600704

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP1-052	04/08/93	1.0	—	—	10.5	10500
SBP1-052	04/08/93	5.0	—	—	11.5	11500
SBP1-052	04/08/93	10.0	—	—	10.5	10500
SBP1-053	04/07/93	1.0	—	—	—	—
SBP1-053	04/07/93	5.0	—	—	—	—
SBP1-053	04/07/93	10.0	—	—	—	—
SBP1-054	01/29/93	1.0	—	—	—	—
SBP1-054	01/29/93	5.0	—	—	—	—
SBP1-054	01/29/93	10.0	—	—	—	—
SBP1-054	01/29/93	15.0	—	—	—	—
SBP1-054	01/29/93	20.0	—	—	—	—
SBP1-054	01/29/93	25.0	—	—	—	—
SBP1-055	03/22/93	1.0	—	—	12.1	12100
SBP1-055	03/22/93	5.0	—	—	10.7	10700
SBP1-055	03/22/93	10.0	—	—	13.5	13500
SBP1-056	03/29/93	1.0	—	—	6.0	6000
SBP1-056	03/29/93	5.0	—	—	6.4	6400
SBP1-056	03/29/93	10.0	—	—	7.7	7700
SBP1-056	03/29/93	15.0	—	—	7.8	7800
SBP1-056	03/29/93	20.0	—	—	4.3	4300
SBP1-056	03/29/93	26.0	—	—	4.5	4500
SBP1-056	03/29/93	30.0	—	—	5.3	5300
SBP1-056	03/29/93	35.0	—	—	3.0	3000
SBP1-056	03/29/93	40.0	—	—	7.2	7200
SBP1-057A	04/12/93	1.0	—	—	7.9	7900
SBP1-057A	04/12/93	5.0	—	—	7.3	7300
SBP1-058	04/12/93	1.5	—	—	5.5	5500
SBP1-059	03/24/93	1.0	—	—	7.4	7400
SBP1-059	03/24/93	5.0	—	—	10.1	10100
SBP1-059	03/24/93	10.0	—	—	5.4	5400
SBP1-060	01/27/93	1.0	—	—	7.4	7400
SBP1-060	01/28/93	5.0	—	—	3.8	3800
SBP1-060	01/28/93	10.0	—	—	3.3	3300
SBP1-060	01/28/93	15.0	—	—	2.9	2900

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001579A

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS0000000705

SITE	DATE	DEPTH	Chromium (VI) mg/kg	STLC (Ca.) Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-060	01/28/93	20.0	—	—	4.0	4000
SBP1-061	01/25/93	1.0	—	—	13.8	13800
SBP1-061	01/25/93	5.0	—	—	6.1	6100
SBP1-061	01/25/93	10.0	—	—	4.3	4300
SBP1-061	01/25/93	15.0	—	—	5.1	5100
SBP1-061	01/25/93	20.0	—	—	6.3	6300
SBP1-062	01/28/93	1.0	—	—	11.5	11500
SBP1-062	01/28/93	5.0	—	—	3.0	3000
SBP1-062	01/28/93	10.0	—	—	3.2	3200
SBP1-062	01/28/93	15.0	—	—	4.5	4500
SBP1-062	01/28/93	20.0	—	—	3.3	3300
SBP1-063	01/28/93	1.0	—	—	17.5	17500
SBP1-063	01/28/93	5.0	—	—	4.1	4100
SBP1-063	01/28/93	10.0	—	—	4.9	4900
SBP1-063	01/28/93	15.0	—	—	5.7	5700
SBP1-063	01/28/93	20.0	—	—	5.7	5700
SBP1-064	04/06/93	1.0	—	—	—	—
SBP1-064	04/06/93	5.0	—	—	—	—
SBP1-064	04/06/93	17.0	—	—	—	—
SBP1-064	04/06/93	21.5	—	—	—	—
SBP1-064	04/06/93	26.0	—	—	—	—
SBP1-064	04/06/93	30.0	—	—	—	—
SBP1-064	04/06/93	35.0	—	—	—	—
SBP1-064	04/06/93	40.0	—	—	—	—
SBP1-065	01/29/93	1.0	—	—	—	—
SBP1-065	01/29/93	5.0	—	—	—	—
SBP1-065	01/29/93	10.0	—	—	—	—
SBP1-065	01/29/93	15.0	—	—	—	—
SBP1-065	01/29/93	20.0	—	—	—	—
SBP1-065	01/29/93	25.0	—	—	—	—
SBP1-066	06/30/93	20.0	—	—	—	—
SBP1-066	06/30/93	25.0	—	—	—	—
SBP1-066	06/30/93	30.0	—	—	—	—
SBP1-066	06/30/93	35.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/92

AS000000706

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-066	06/30/93	40.0	--	--	--	--
SBP1-066	06/30/93	45.0	--	--	--	--
SBP1-066	06/30/93	50.0	--	--	--	--
SBP1-066	06/30/93	55.0	--	--	--	--
SBP1-067	07/08/93	1.0	--	--	--	--
SBP1-067	07/08/93	5.0	--	--	--	--
SBP1-067	07/08/93	10.0	--	--	--	--
SBP1-067	07/08/93	15.0	--	--	--	--
SBP1-067	07/08/93	20.0	--	--	--	--
SBP1-067	07/08/93	25.0	--	--	--	--
SBP1-067	07/08/93	30.0	--	--	--	--
SBP1-067	07/08/93	35.0	--	--	--	--
SBP1-067	07/08/93	40.0	--	--	--	--
SBP1-068	07/09/93	1.0	--	--	--	--
SBP1-068	07/09/93	5.0	--	--	--	--
SBP1-068	07/09/93	10.0	--	--	--	--
SBP1-068	07/09/93	15.0	--	--	--	--
SBP1-068	07/09/93	20.0	--	--	--	--
SBP1-068	07/09/93	25.0	--	--	--	--
SBP1-068	07/09/93	30.0	--	--	--	--
SBP1-068	07/09/93	35.0	--	--	--	--
SBP1-068	07/09/93	40.0	--	--	--	--
SBP1-069	06/30/93	1.0	--	--	--	--
SBP1-069	06/30/93	5.0	--	--	--	--
SBP1-069	06/30/93	10.0	--	--	--	--
SBP1-069	06/30/93	15.0	--	--	--	--
SBP1-069	06/30/93	20.0	--	--	--	--
SBP1-069	06/30/93	25.0	--	--	--	--
SBP1-069	06/30/93	30.0	--	--	--	--
SBP1-069	06/30/93	35.0	--	--	--	--
SBP1-069	06/30/93	40.0	--	--	--	--
SBP1-070	07/12/93	1.0	--	--	--	--
SBP1-070	07/12/93	5.0	--	--	--	--
SBP1-070	07/12/93	10.0	--	--	--	--

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000066707

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-070	07/12/93	15.0	—	—	—	—
SBP1-070	07/12/93	20.0	—	—	—	—
SBP1-071	07/12/93	1.0	—	—	—	—
SBP1-071	07/12/93	5.0	—	—	—	—
SBP1-071	07/12/93	10.0	—	—	—	—
SBP1-071	07/12/93	15.0	—	—	—	—
SBP1-071	07/12/93	20.0	—	—	—	—
SBP1-072	07/12/93	1.0	—	—	—	—
SBP1-072	07/12/93	5.0	—	—	—	—
SBP1-072	07/12/93	10.0	—	—	—	—
SBP1-072	07/12/93	15.0	—	—	—	—
SBP1-072	07/12/93	20.0	—	—	—	—
SBP1-073	07/13/93	5.0	120	16	250	250000
SBP1-073	07/13/93	10.0	170	16	340	340000
SBP1-073	07/13/93	15.0	100	13	140	140000
SBP1-073	07/13/93	20.0	370	21	1000	1000000
SBP1-073	07/13/93	25.0	220	19	380	380000
SBP1-073	07/13/93	30.0	220	21	220	220000
SBP1-073	07/13/93	35.0	170	4.3	790	790000
SBP1-073	07/13/93	40.0	220	18	240	240000
SBP1-073	07/13/93	45.0	82	6.5	130	130000
SBP1-073	07/13/93	50.0	49	0.40	60	60000
SBP1-075	07/13/93	5.0	36	4.0	87	87000
SBP1-075	07/13/93	10.0	17	2.4	47	47000
SBP1-075	07/13/93	15.0	21	2.3	35	35000
SBP1-075	07/13/93	20.0	6.1	0.41	16	16000
SBP1-075	07/13/93	25.0	6.6	1.1	22	22000
SBP1-075	07/13/93	30.0	7.7	1.2	20	20000
SBP1-075	07/13/93	35.0	2.5	0.090	12	12000
SBP1-075	07/13/93	40.0	9.1	0.80	16	16000
SBP1-075	07/13/93	45.0	4.7	0.80	21	21000
SBP1-075	07/13/93	50.0	20	2.0	27	27000
SBP1-076	07/06/93	1.0	—	—	—	—
SBP1-076	07/06/93	5.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

AS000066708

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-076	07/06/93	10.0	—	—	—	—
SBP1-076	07/06/93	15.0	—	—	—	—
SBP1-076	07/06/93	20.0	—	—	—	—
SBP1-076	07/06/93	25.0	—	—	—	—
SBP1-076	07/06/93	30.0	—	—	—	—
SBP1-076	07/06/93	35.0	—	—	—	—
SBP1-076	07/06/93	40.0	—	—	—	—
SBP1-076	07/06/93	45.0	—	—	—	—
SBP1-077	07/06/93	1.0	—	—	—	—
SBP1-077	07/06/93	5.0	—	—	—	—
SBP1-077	07/06/93	10.0	—	—	—	—
SBP1-077	07/06/93	15.0	—	—	—	—
SBP1-077	07/06/93	20.0	—	—	—	—
SBP1-077	07/06/93	25.0	—	—	—	—
SBP1-077	07/06/93	30.0	—	—	—	—
SBP1-077	07/06/93	35.0	—	—	—	—
SBP1-077	07/06/93	40.0	—	—	—	—
SBP1-078	07/06/93	1.0	—	—	—	—
SBP1-078	07/06/93	5.0	—	—	—	—
SBP1-078	07/06/93	10.0	—	—	—	—
SBP1-078	07/06/93	15.0	—	—	—	—
SBP1-078	07/06/93	20.0	—	—	—	—
SBP1-078	07/06/93	25.0	—	—	—	—
SBP1-078	07/06/93	30.0	—	—	—	—
SBP1-078	07/06/93	35.0	—	—	—	—
SBP1-078	07/06/93	40.0	—	—	—	—
SBP1-079	07/07/93	1.0	—	—	—	—
SBP1-079	07/07/93	5.0	—	—	—	—
SBP1-079	07/07/93	12.0	—	—	—	—
SBP1-079	07/07/93	15.0	—	—	—	—
SBP1-079	07/07/93	20.0	—	—	—	—
SBP1-079	07/07/93	25.0	—	—	—	—
SBP1-079	07/07/93	30.0	—	—	—	—
SBP1-079	07/07/93	35.0	—	—	—	—

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= Highest of Multiple Results 777 = Duplicate Results

001581A

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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45000063709

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-079	07/07/93	40.0	—	—	—	—
SBP1-080	07/01/93	1.0	—	—	—	—
SBP1-080	07/01/93	5.0	—	—	—	—
SBP1-080	07/01/93	10.0	—	—	—	—
SBP1-081	07/01/93	1.0	—	—	—	—
SBP1-081	07/01/93	5.0	—	—	—	—
SBP1-081	07/01/93	10.0	—	—	—	—
SBP1-082	07/01/93	1.0	—	—	—	—
SBP1-082	07/01/93	5.0	—	—	—	—
SBP1-082	07/01/93	10.0	—	—	—	—
SBP1-083	07/01/93	1.0	—	—	—	—
SBP1-083	07/01/93	5.0	—	—	—	—
SBP1-083	07/01/93	10.0	—	—	—	—
SBP1-084	07/01/93	1.0	—	—	—	—
SBP1-084	07/01/93	5.0	—	—	—	—
SBP1-084	07/01/93	10.0	—	—	—	—
SBP1-085	07/01/93	1.0	—	—	—	—
SBP1-085	07/01/93	5.0	—	—	—	—
SBP1-085	07/01/93	10.0	—	—	—	—
SBP1-085	07/01/93	15.0	—	—	—	—
SBP1-086	07/01/93	1.0	—	—	—	—
SBP1-086	07/01/93	5.0	—	—	—	—
SBP1-086	07/01/93	10.0	—	—	—	—
SBP1-087	07/07/93	1.0	—	—	—	—
SBP1-087	07/07/93	5.0	—	—	—	—
SBP1-087	07/07/93	10.0	—	—	—	—
SBP1-088	07/02/93	1.0	—	—	—	—
SBP1-088	07/02/93	5.0	—	—	—	—
SBP1-088	07/02/93	10.0	—	—	—	—
SBP1-089	07/07/93	1.0	—	—	—	—
SBP1-089	07/07/93	5.0	—	—	—	—
SBP1-089	07/07/93	10.0	—	—	—	—
SBP1-090	07/07/93	1.0	—	—	—	—
SBP1-090	07/07/93	5.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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A5000000710

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-090	07/07/93	10.0	—	—	—	—
SBP1-090	07/07/93	15.0	—	—	—	—
SBP1-090	07/07/93	20.0	—	—	—	—
SBP1-090	07/07/93	25.0	—	—	—	—
SBP1-090	07/07/93	30.0	—	—	—	—
SBP1-091	07/02/93	1.0	—	—	—	—
SBP1-091	07/02/93	5.0	—	—	—	—
SBP1-091	07/02/93	10.0	—	—	—	—
SBP1-091	07/02/93	15.0	—	—	—	—
SBP1-091	07/02/93	20.0	—	—	—	—
SBP1-091	07/02/93	25.0	—	—	—	—
SBP1-091	07/02/93	30.0	—	—	—	—
SBP1-092	07/02/93	1.0	—	—	—	—
SBP1-092	07/02/93	5.0	—	—	—	—
SBP1-092	07/02/93	10.0	—	—	—	—
SBP1-092	07/02/93	15.0	—	—	—	—
SBP1-092	07/02/93	20.0	—	—	—	—
SBP1-092	07/02/93	25.0	—	—	—	—
SBP1-092	07/02/93	30.0	—	—	—	—
SBP1-093	07/02/93	1.0	—	—	—	—
SBP1-093	07/02/93	5.0	—	—	—	—
SBP1-093	07/02/93	10.0	—	—	—	—
SBP1-093	07/02/93	15.0	—	—	—	—
SBP1-094	07/02/93	10.0	—	—	—	—
SBP1-094	07/02/93	15.0	—	—	—	—
SBP1-094	07/02/93	20.0	—	—	—	—
SBP1-094	07/02/93	25.0	—	—	—	—
SBP1-094	07/02/93	30.0	—	—	—	—
SBP1-095	07/02/93	1.0	—	—	—	—
SBP1-095	07/02/93	5.0	—	—	—	—
SBP1-095	07/02/93	10.0	—	—	—	—
SBP1-095	07/02/93	15.0	—	—	—	—
SBP1-095	07/02/93	20.0	—	—	—	—
SBP1-095	07/02/93	25.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

001582A

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000066711

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VII) mg/kg	Chromium (VII) mg/l		
SBP1-095	07/02/93	30.0	--	--	--	--
SBP1-096	07/02/93	1.0	--	--	--	--
SBP1-096	07/02/93	5.0	--	--	--	--
SBP1-096	07/02/93	10.0	--	--	--	--
SBP1-096	07/02/93	15.0	--	--	--	--
SBP1-096	07/02/93	20.0	--	--	--	--
SBP1-096	07/02/93	25.0	--	--	--	--
SBP1-096	07/02/93	30.0	--	--	--	--
SBP1-097	07/02/93	1.0	--	--	--	--
SBP1-097	07/02/93	5.0	--	--	--	--
SBP1-097	07/02/93	10.0	--	--	--	--
SBP1-097	07/02/93	15.0	--	--	--	--
SBP1-097	07/02/93	20.0	--	--	--	--
SBP1-097	07/02/93	25.0	--	--	--	--
SBP1-097	07/02/93	30.0	--	--	--	--
SBP1-098	07/08/93	20.0	--	--	--	--
SBP1-098	07/08/93	25.0	--	--	--	--
SBP1-098	07/08/93	30.0	--	--	--	--
SBP1-099	07/08/93	20.0	--	--	--	--
SBP1-099	07/08/93	25.0	--	--	--	--
SBP1-099	07/08/93	30.0	--	--	--	--
SBP1-100	07/12/93	15.0	--	--	--	--
SBP1-100	07/12/93	20.0	--	--	--	--
SBP1-100	07/12/93	25.0	--	--	--	--
SBP1-100	07/12/93	30.0	--	--	--	--
SBP1-101	07/12/93	15.0	--	--	--	--
SBP1-101	07/12/93	20.0	--	--	--	--
SBP1-101	07/12/93	25.0	--	--	--	--
SBP1-101	07/12/93	30.0	--	--	--	--
SBP1-102	07/12/93	15.0	--	--	--	--
SBP1-102	07/12/93	20.0	--	--	--	--
SBP1-102	07/12/93	25.0	--	--	--	--
SBP1-102	07/12/93	31.0	--	--	--	--
SBP2-01	01/21/93	1.0	--	--	2.4	2400

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000066712

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP2-01	01/21/93	5.0	—	—	3.4	3400
SBP2-01	01/21/93	10.0	—	—	3.8	3800
SBP2-02	01/21/93	1.0	—	—	3.0	3000
SBP2-02	01/21/93	5.0	—	—	1.9	1900
SBP2-02	01/21/93	10.0	—	—	1.9	1900
SBP2-03	03/17/93	1.0	—	—	—	—
SBP2-03	03/17/93	5.0	—	—	—	—
SBP2-03	03/17/93	10.0	—	—	—	—
SBP2-04	03/17/93	1.0	—	—	—	—
SBP2-04	03/17/93	5.0	—	—	—	—
SBP2-04	03/17/93	10.0	—	—	—	—
SBP2-05	01/22/93	1.0	—	—	—	—
SBP2-05	01/22/93	5.0	—	—	—	—
SBP2-05	01/22/93	10.0	—	—	—	—
SBP2-06	03/15/93	1.0	—	—	1.8	1800
SBP2-06	03/15/93	5.0	—	—	2.3	2300
SBP2-06	03/15/93	10.0	—	—	2.0	2000
SBP2-07	03/15/93	1.0	—	—	3.4	3400
SBP2-07	03/15/93	5.0	—	—	5.7	5700
SBP2-07	03/15/93	10.0	—	—	2.2	2200
SBP2-08	03/15/93	1.0	—	—	—	—
SBP2-08	03/15/93	5.0	—	—	—	—
SBP2-08	03/15/93	10.0	—	—	—	—
SBP2-09	03/15/93	1.0	—	—	—	—
SBP2-09	03/15/93	5.0	—	—	—	—
SBP2-09	03/15/93	10.0	—	—	—	—
SBP2-12	03/22/93	1.0	—	—	—	—
SBP2-12	03/22/93	5.0	—	—	—	—
SBP2-12	03/22/93	10.0	—	—	—	—
SBP2-12	03/22/93	15.0	—	—	—	—
SBP2-12	03/22/93	20.0	—	—	—	—
SBP2-12	03/22/93	25.0	—	—	—	—
SBP2-12	03/22/93	30.0	—	—	—	—
SBP2-12	03/22/93	35.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

45000060713

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP2-12	03/22/93	40.0	—	—	—	—
SBP2-12	03/22/93	45.0	—	—	—	—
SBP2-12	03/22/93	50.0	—	—	—	—
SBP2-12	03/22/93	55.0	—	—	—	—
SBP2-13	02/02/93	1.0	—	—	—	—
SBP2-13	02/02/93	5.0	—	—	—	—
SBP2-13	02/02/93	10.0	—	—	—	—
SBP2-13	02/02/93	15.0	—	—	—	—
SBP2-13	02/02/93	20.0	—	—	—	—
SBP2-13	02/02/93	27.0	—	—	—	—
SBP2-13	02/02/93	30.0	—	—	—	—
SBP2-13	02/02/93	35.0	—	—	—	—
SBP2-13	02/02/93	40.0	—	—	—	—
SBP2-13	02/02/93	45.0	—	—	—	—
SBP2-13	02/02/93	52.5	—	—	—	—
SBP2-13	02/02/93	55.0	—	—	—	—
SBP2-14	01/22/93	1.0	—	—	3.4	3400
SBP2-14	01/22/93	5.0	—	—	1.5	1500
SBP2-14	01/22/93	10.0	—	—	<1.5	<1500
SBP2-14	01/22/93	15.0	—	—	2.0	2000
SBP2-14	01/22/93	20.0	—	—	<1.5	<1500
SBP2-14	01/22/93	25.0	—	—	25.5	25500
SBP2-14	01/22/93	30.0	—	—	<1.5	<1500
SBP2-14	01/22/93	35.0	—	—	<1.5	<1500
SBP2-14	01/22/93	40.0	—	—	<1.5	<1500
SBP2-14	01/22/93	45.0	—	—	<1.5	<1500
SBP2-14	01/22/93	50.0	—	—	<1.5	<1500
SBP2-14	01/22/93	55.0	—	—	6.6	6600
SBP2-15	03/15/93	1.0	—	—	6.9	6900
SBP2-15	03/15/93	5.0	—	—	<1.5	<1500
SBP2-15	03/15/93	10.0	—	—	3.4	3400
SBP2-16	03/16/93	1.0	—	—	7.5	7500
SBP2-16	03/16/93	5.0	—	—	2.0	2000
SBP2-16	03/16/93	10.0	—	—	12.0	12000

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A50000066714

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP2-16	03/16/93	15.0	—	—	1.8	1800
SBP2-16	03/16/93	20.0	—	—	1.8	1800
SBP2-16	03/16/93	25.0	—	—	2.8	2800
SBP2-16	03/16/93	32.0	—	—	6.4	6400
SBP2-16	03/16/93	35.0	—	—	7.4	7400
SBP2-16	03/16/93	40.0	—	—	(1.4)	(1400)
SBP2-16	03/16/93	45.0	—	—	2.5	2500
SBP2-16	03/16/93	50.0	—	—	11.9	11900
SBP2-16	03/16/93	55.0	—	—	14.5	14500
SBP2-17	01/28/93	1.0	—	—	45.3	45300
SBP2-17	01/28/93	5.0	—	—	7.6	7600
SBP2-17	01/28/93	10.0	—	—	4.3	4300
SBP2-18	03/17/93	1.0	—	—	95.2	95200
SBP2-18	03/17/93	5.0	—	—	59.4	59400
SBP2-18	03/17/93	10.0	—	—	59.7	59700
SBP2-18	03/17/93	15.0	—	—	15.6	15600
SBP2-18	03/17/93	20.0	—	—	12.1	12100
SBP2-19	03/17/93	1.0	—	—	37.5	37500
SBP2-19	03/17/93	5.0	—	—	121	121000
SBP2-19	03/17/93	10.0	—	—	7.7	7700
SBP2-19	03/17/93	15.0	—	—	14.2	14200
SBP2-19	03/17/93	20.0	—	—	7.2	7200
SBP2-20	01/22/93	3.5	—	—	12.0	12000
SBP2-20	01/22/93	7.0	—	—	<1.5	<1500
SBP2-20	01/22/93	12.0	—	—	<1.5	<1500
SBP2-20	01/22/93	17.0	—	—	7.6	7600
SBP2-20	01/22/93	22.0	—	—	1.6	1600
SBP2-21	02/01/93	3.0	—	—	16.0	16000
SBP2-21	02/01/93	7.0	—	—	<1.5	<1500
SBP2-21	02/01/93	12.0	—	—	5.6	5600
SBP2-21	02/01/93	17.0	—	—	20.5	20500
SBP2-21	02/01/93	22.0	—	—	6.0	6000
SBP2-23A	03/17/93	1.0	—	—	12.9	12900
SBP2-23A	03/17/93	5.0	—	—	22.2	22200

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

A5000005715

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP2-23A	03/17/93	10.0	—	—	7.0	7000
SBP2-23A	03/17/93	15.0	—	—	<9.9	<9900
SBP2-23A	03/17/93	20.0	—	—	5.8	5800
SBP2-23B	03/17/93	1.0	—	—	23.5	23500
SBP2-23B	03/17/93	5.0	—	—	202	202000
SBP2-23B	03/17/93	10.0	—	—	16.0	16000
SBP2-23B	03/17/93	15.0	—	—	37.4	37400
SBP2-23B	03/17/93	20.0	—	—	6.4	6400
SBP2-24	03/18/93	1.0	—	—	—	—
SBP2-24	03/18/93	5.0	—	—	—	—
SBP2-24	03/18/93	10.0	—	—	—	—
SBP2-25	07/07/93	1.0	<0.25	—	16	16000
SBP2-25	07/07/93	5.0	<0.25	—	2.8	2800
SBP2-25	07/07/93	10.0	<0.25	—	4.4	4400
SBP2-25	07/07/93	15.0	<0.25	—	5.8	5800
SBP2-25	07/07/93	20.0	<0.25	—	9.0	9000
SBP2-26	07/07/93	1.0	<0.25	—	20	20000
SBP2-26	07/07/93	5.0	<0.25	—	5.4	5400
SBP2-26	07/07/93	10.0	<0.25	—	4.9	4900
SBP2-26	07/07/93	15.0	<0.25	—	5.0	5000
SBP2-26	07/07/93	20.0	<0.25	—	2.3	2300
SBP2-27	07/07/93	1.0	<0.25	—	63	63000
SBP2-27	07/07/93	5.0	0.70	—	3.7	3700
SBP2-27	07/07/93	10.0	0.34	—	5.8	5800
SBP2-27	07/07/93	15.0	0.89	—	17	17000
SBP2-27	07/07/93	20.0	0.90	—	11	11000
SBP2-28	07/08/93	1.0	—	—	—	—
SBP2-28	07/08/93	5.0	—	—	—	—
SBP2-28	07/08/93	10.0	—	—	—	—
SBP2-28	07/08/93	15.0	—	—	—	—
SBP2-29	07/08/93	1.0	—	—	—	—
SBP2-29	07/08/93	5.0	—	—	—	—
SBP2-29	07/08/93	10.0	—	—	—	—
SBP2-29	07/08/93	15.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 22A of 28
Date: 09/13/93

AS000088716

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP2-30	07/08/93	1.0	—	—	—	—
SBP2-30	07/08/93	5.0	—	—	—	—
SBP2-30	07/08/93	10.0	—	—	—	—
SBP2-30	07/08/93	15.0	—	—	—	—
SBSP-01	01/11/93	1.0	—	—	—	—
SBSP-01	01/11/93	5.0	—	—	—	—
SBSP-01	01/11/93	10.0	—	—	—	—
SBSP-02	01/11/93	1.0	—	—	—	—
SBSP-02	01/11/93	5.0	—	—	—	—
SBSP-02	01/11/93	10.0	—	—	—	—
SBSP-03	01/11/93	1.0	—	—	—	—
SBSP-03	01/11/93	5.0	—	—	—	—
SBSP-03	01/11/93	10.0	—	—	—	—
SBSW-01	01/26/93	1.0	—	—	—	—
SBSW-01	01/26/93	5.0	—	—	—	—
SBSW-01	01/26/93	10.0	—	—	—	—
SBSW-02	01/21/93	1.0	—	—	—	—
SBSW-02	01/21/93	5.0	—	—	—	—
SBSW-02	01/21/93	10.0	—	—	—	—
SBSW-03	01/21/93	0.0	—	—	—	—
SBSW-03	01/21/93	1.0	—	—	—	—
SBSW-03	01/21/93	5.0	—	—	—	—
SBSW-03	01/21/93	10.0	—	—	—	—
SBSW-04	01/26/93	1.0	—	—	—	—
SBSW-04	01/26/93	5.0	—	—	—	—
SBSW-04	01/26/93	10.0	—	—	—	—
SBSW-06	03/24/93	1.0	—	—	—	—
SBSW-06	03/24/93	5.0	—	—	—	—
SBSW-06	03/24/93	10.0	—	—	—	—
SBSW-07	03/24/93	1.0	—	—	—	—
SBSW-07	03/24/93	5.0	—	—	—	—
SBSW-07	03/24/93	10.0	—	—	—	—
SBSW-08	01/26/93	1.0	—	—	—	—
SBSW-08	01/26/93	5.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 23A of 28A
Date: 09/13/93

AS0000000717

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-08	01/26/93	10.0	—	—	—	—
SBSW-09	03/24/93	1.0	—	—	—	—
SBSW-09	03/24/93	5.0	—	—	—	—
SBSW-09	03/24/93	10.0	—	—	—	—
SBSW-10	03/24/93	1.0	—	—	—	—
SBSW-10	03/24/93	5.0	—	—	—	—
SBSW-10	03/24/93	10.0	—	—	—	—
SBSW-11	02/01/93	1.0	—	—	—	—
SBSW-11	02/01/93	5.0	—	—	—	—
SBSW-11	02/01/93	10.0	—	—	—	—
SBSW-11	02/01/93	15.0	—	—	—	—
SBSW-11	02/01/93	20.0	—	—	—	—
SBSW-12	01/26/93	1.0	—	—	—	—
SBSW-12	01/26/93	5.0	—	—	—	—
SW-12	01/26/93	10.0	—	—	—	—
SBSW-12	01/26/93	15.0	—	—	—	—
SBSW-12	01/26/93	20.0	—	—	—	—
SBSW-13	01/26/93	1.0	—	—	—	—
SBSW-13	01/26/93	5.0	—	—	—	—
SBSW-13	01/26/93	10.0	—	—	—	—
SBSW-13	01/26/93	20.0	—	—	—	—
SBSW-14	03/17/93	1.0	—	—	—	—
SBSW-14	03/17/93	5.0	—	—	—	—
SBSW-14	03/17/93	10.0	—	—	—	—
SBSW-15	03/17/93	6.0	—	—	—	—
SBSW-15	03/17/93	11.0	—	—	—	—
SBSW-15	03/17/93	16.0	—	—	—	—
SBSW-15B	06/29/93	20.0	—	—	—	—
SBSW-15B	06/29/93	25.0	—	—	—	—
SBSW-15B	06/29/93	30.0	—	—	—	—
SBSW-15B	06/29/93	35.0	—	—	—	—
SBSW-15B	06/29/93	40.0	—	—	—	—
SBSW-16	03/17/93	1.0	—	—	—	—
SBSW-16	03/17/93	5.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 24A of 28
Date: 09/13/93

AS000000718

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBSW-16	03/17/93	10.0	—	—	—	—
SBSW-17	03/17/93	1.0	—	—	—	—
SBSW-17	03/17/93	5.0	—	—	—	—
SBSW-17	03/17/93	10.0	—	—	—	—
SBSW-18	03/17/93	1.0	—	—	—	—
SBSW-18	03/17/93	5.0	—	—	—	—
SBSW-18	03/17/93	10.0	—	—	—	—
SBSW-19	01/19/93	1.0	—	—	—	—
SBSW-19	01/19/93	5.0	—	—	—	—
SBSW-19	01/19/93	10.0	—	—	—	—
SBSW-19	01/19/93	15.0	—	—	—	—
SBSW-20	01/19/93	1.0	—	—	—	—
SBSW-20	01/19/93	5.0	—	—	—	—
SBSW-20	01/19/93	10.0	—	—	—	—
SBSW-20	01/19/93	15.0	—	—	—	—
SBSW-21	01/19/93	1.0	—	—	—	—
SBSW-21	01/19/93	5.0	—	—	—	—
SBSW-21	01/19/93	10.0	—	—	—	—
SBSW-21	01/19/93	15.0	—	—	—	—
SBSW-22	01/20/93	1.0	—	—	—	—
SBSW-22	01/20/93	5.0	—	—	—	—
SBSW-22	01/20/93	10.0	—	—	—	—
SBSW-22	01/20/93	15.0	—	—	—	—
SBSW-23	03/24/93	1.0	—	—	—	—
SBSW-23	03/24/93	5.0	—	—	—	—
SBSW-23	03/24/93	10.0	—	—	—	—
SBSW-24	03/23/93	1.0	—	—	9.5	9500
SBSW-24	03/23/93	5.0	—	—	7.5	7500
SBSW-24	03/23/93	10.0	—	—	6.9	6900
SBSW-25	01/14/93	1.0	—	—	5.4	5400
SBSW-25	01/14/93	5.0	—	—	<1.5	<1500
SBSW-25	01/14/93	10.0	—	—	13.5	13500
SBSW-26	03/23/93	1.0	—	—	13.5	13500
SBSW-26	03/23/93	5.0	—	—	21.8	21800

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 25A of 28A
Date: 09/13/93

A5000000719

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBSW-26	03/23/93	10.0	—	—	8.4	8400
SBSW-27	01/14/93	1.0	—	—	2.8	2800
SBSW-27	01/14/93	5.0	—	—	2.2	2200
SBSW-27	01/14/93	10.0	—	—	<1.5	<1500
SBSW-28	03/22/93	1.0	—	—	11.2	11200
SBSW-28	03/22/93	5.0	—	—	10.8	10800
SBSW-28	03/22/93	10.0	—	—	8.5	8500
SBSW-29	03/22/93	1.0	—	—	4.4	4400
SBSW-29	03/22/93	5.0	—	—	12.1	12100
SBSW-29	03/22/93	10.0	—	—	18.5	18500
SBSW-30	01/21/93	1.0	—	—	—	—
SBSW-30	01/21/93	5.0	—	—	—	—
SBSW-30	01/21/93	10.0	—	—	—	—
SBSW-30	01/21/93	15.0	—	—	—	—
SBSW-30	01/21/93	20.0	—	—	—	—
SBSW-30	01/21/93	25.0	—	—	—	—
SBSW-31	01/19/93	1.0	—	—	—	—
SBSW-31	01/19/93	5.0	—	—	—	—
SBSW-31	01/19/93	10.0	—	—	—	—
SBSW-32	03/24/93	1.0	—	—	—	—
SBSW-32	03/24/93	5.0	—	—	—	—
SBSW-32	03/24/93	10.0	—	—	—	—
SBSW-33	01/19/93	1.0	—	—	—	—
SBSW-33	01/19/93	5.0	—	—	—	—
SBSW-33	01/19/93	10.0	—	—	—	—
SBSW-33	01/19/93	15.0	—	—	—	—
SBSW-33	01/19/93	20.0	—	—	—	—
SBSW-33	01/19/93	25.0	—	—	—	—
SBSW-33	01/19/93	30.0	—	—	—	—
SBSW-33	01/19/93	35.0	—	—	—	—
SBSW-33	01/19/93	40.0	—	—	—	—
SBSW-33	01/19/93	45.0	—	—	—	—
SBSW-33	01/19/93	50.0	—	—	—	—
SBSW-33	01/19/93	55.0	—	—	—	—

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A5003066720

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 26A of 2
Date: 09/13/93

STLC (Ca.)

SITE	DATE	DEPTH	Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-33	01/19/93	60.0	—	—	—	—
SBSW-34	01/14/93	1.0	—	—	—	—
SBSW-34	01/14/93	5.0	—	—	—	—
SBSW-34	01/14/93	10.0	—	—	—	—
SBSW-34	01/14/93	15.0	—	—	—	—
SBSW-34	01/14/93	20.0	—	—	—	—
SBSW-34	01/14/93	25.0	—	—	—	—
SBSW-34	01/14/93	30.0	—	—	—	—
SBSW-35	01/21/93	1.0	—	—	—	—
SBSW-35	01/21/93	5.0	—	—	—	—
SBSW-35	01/21/93	10.0	—	—	—	—
SBSW-35	01/21/93	15.0	—	—	—	—
SBSW-35	01/21/93	20.0	—	—	—	—
SBSW-35	01/21/93	25.0	—	—	—	—
SBSW-36	06/29/93	1.0	—	—	—	—
SBSW-36	06/29/93	5.0	—	—	—	—
SBSW-36	06/29/93	10.0	—	—	—	—
SBSW-36	06/29/93	15.0	—	—	—	—
SBSW-36	06/29/93	20.0	—	—	—	—
SBSW-36	06/29/93	25.0	—	—	—	—
SBSW-36	06/29/93	30.0	—	—	—	—
SBSW-36	06/29/93	35.0	—	—	—	—
SBSW-36	06/29/93	40.0	—	—	—	—
SBSW-37	06/29/93	1.0	—	—	—	—
SBSW-37	06/29/93	5.0	—	—	—	—
SBSW-37	06/29/93	10.0	—	—	—	—
SBSW-37	06/29/93	15.0	—	—	—	—
SBSW-37	06/29/93	20.0	—	—	—	—
SBSW-37	06/29/93	25.0	—	—	—	—
SBSW-37	06/29/93	30.0	—	—	—	—
SBSW-37	06/29/93	35.0	—	—	—	—
SBSW-37	06/29/93	40.0	—	—	—	—
SBSW-38	06/29/93	1.0	—	—	—	—
SBSW-38	06/29/93	5.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 27A of 28A
Date: 09/13/93

AS0000000721

SITE	DATE	DEPTH	6TLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBSW-38	06/29/93	10.0	—	—	—	—
SBSW-38	06/29/93	15.0	—	—	—	—
SBSW-38	06/29/93	20.0	—	—	—	—
SBSW-38	06/29/93	25.0	—	—	—	—
SBSW-38	06/29/93	30.0	—	—	—	—
SBSW-38	06/29/93	35.0	—	—	—	—
SBSW-38	06/29/93	40.0	—	—	—	—
SBSW-39	06/29/93	1.0	—	—	—	—
SBSW-39	06/29/93	5.0	—	—	—	—
SBSW-39	06/29/93	10.0	—	—	—	—
SBSW-40	06/29/93	1.0	—	—	—	—
SBSW-40	06/29/93	5.0	—	—	—	—
SBSW-40	06/29/93	10.0	—	—	—	—
SBSW-41	06/29/93	1.0	—	—	—	—
SBSW-41	06/29/93	5.0	—	—	—	—
SBSW-41	06/29/93	10.0	—	—	—	—
SBSW-42	06/30/93	1.0	—	—	—	—
SBSW-42	06/30/93	5.0	—	—	—	—
SBSW-42	06/30/93	10.0	—	—	—	—
SBSW-43	06/30/93	1.0	—	—	—	—
SBSW-43	06/30/93	5.0	—	—	—	—
SBSW-43	06/30/93	10.0	—	—	—	—
SBSW-44	06/30/93	1.0	—	—	—	—
SBSW-44	06/30/93	5.0	—	—	—	—
SBSW-44	06/30/93	10.0	—	—	—	—
SBSW-45	06/30/93	1.0	—	—	—	—
SBSW-45	06/30/93	5.0	—	—	—	—
SBSW-45	06/30/93	10.0	—	—	—	—
SBSW-46	07/14/93	5.0	—	—	—	—
SBSW-46	07/14/93	10.0	—	—	—	—
SBSW-46	07/14/93	15.0	—	—	—	—
SBSW-46	07/14/93	20.0	—	—	—	—
SBSW-46	07/14/93	25.0	—	—	—	—
SBSW-46	07/14/93	30.0	—	—	—	—

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001593

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 28A of 28
Date: 09/13/93

STLC (Ca.)

SITE	DATE	DEPTH	Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-46	07/14/93	35.0	—	—	—	—
SBSW-46	07/14/93	40.0	—	—	—	—
SBSW-46	07/14/93	45.0	—	—	—	—
SBSW-46	07/14/93	50.0	—	—	—	—
SBSW-46	07/14/93	55.0	—	—	—	—
SBSW-46	07/14/93	60.0	—	—	—	—
SBT-01	03/17/93	1.0	—	—	—	—
SBT-01	03/17/93	5.0	—	—	—	—
SBT-02	03/17/93	1.0	—	—	—	—
SBT-02	03/17/93	5.0	—	—	—	—
SBT-03	03/18/93	1.0	—	—	—	—
SBT-03	03/18/93	5.0	—	—	—	—
SBT-04	03/18/93	1.0	—	—	—	—
SBT-04	03/18/93	5.0	—	—	—	—
SBT-05	03/17/93	1.0	—	—	—	—
SBT-05	03/17/93	5.0	—	—	—	—
SBT-06	04/09/93	1.0	—	—	—	—
SBT-06	04/09/93	5.0	—	—	—	—
SBT-07	04/09/93	1.0	—	—	—	—
SBT-07	04/09/93	5.0	—	—	—	—
SBT-08	04/09/93	1.0	—	—	—	—
SBT-08	04/09/93	5.0	—	—	—	—
SBT-09	04/09/93	1.0	—	—	—	—
SBT-09	04/09/93	5.0	—	—	—	—
SBT-10	04/09/93	1.0	—	—	—	—
SBT-10	04/09/93	5.0	—	—	—	—
SBT-11	04/09/93	1.0	—	—	—	—
SBT-12	04/09/93	1.0	—	—	—	—
SBT-12	04/09/93	5.0	—	—	—	—
SBT-13	04/09/93	1.0	—	—	—	—
SBT-13	04/09/93	5.0	—	—	—	—
SBT-13	04/09/93	10.0	—	—	—	—
SBT-13	04/09/93	15.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

001594

PARSONS

Parsons Engineering Science, Inc. • A Unit of Parsons Infrastructure & Technology Group Inc.
100 West Walnut Street • Pasadena, California 91124 • (626) 440-4000 • Fax: (626) 440-6200

October 3, 2000

Mr. Ron Newquist
Kaiser Permanente
11626 Sherman Way
North Hollywood, CA 91605

Subject: Soil Vapor Extraction System Design

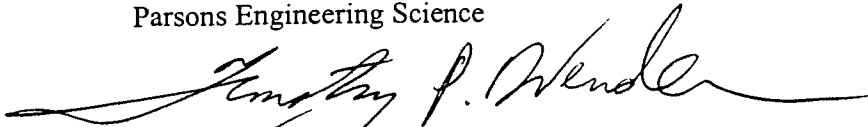
Dear Mr. Newquist:

Attached are the design drawings for the soil vapor extraction system to be installed at your facility. We will see you at 8:00 a.m. on October 10, 2000 for a site walk. Our potential subcontractors will be on site at 9:00 a.m. for their own site walk and for us to answer their questions.

If you have any questions or comments regarding this request, please call me at 626-440-6229.

Sincerely,

Parsons Engineering Science



Timothy P. Wendler
Project Manager

SECTION 0
(RFP# 737560-05720)

STATEMENT OF WORK (SOW)
EQUIPMENT SUPPLIER, CIVIL/ELECTRICAL SUBCONTRACTOR

FORMER HONEYWELL INTERNATIONAL
(FORMERLY ALLIEDSIGNAL) SITE
NORTH HOLLYWOOD, CALIFORNIA

1. INTRODUCTION

This work is part of the North Hollywood soil vapor extraction system project being performed by Parsons Engineering Science, Inc. (Contractor) for Honeywell International Inc. (formerly AlliedSignal). The project is located at the Kaiser Regional Laboratory Facility (a former AlliedSignal site) located at 11626 Sherman Way, North Hollywood (Figure G-1).

This statement of work addresses two separate scopes of work: "SVE Equipment Supplier" and "Civil/electrical Subcontractor." A bidder may submit a proposal for either scope of work or both. The two scopes are described in the attached drawings (G-1, M-1, M-2, M-3, I-1, I-2, and E-1).

Additional proposal requirements are provided in the Exhibit (attached).

Additionally, from time to time during the course of this Subcontract, Contractor may require the Services of Subcontractor to perform *tasks similar as those identified in this Section 0 (SOW)*. This Subcontract establishes a basic ordering agreement between Contractor and Subcontractor to facilitate subsequent Task Orders for such Services.

Contractor is not obligated to make Task Order work releases to Subcontractor under this Subcontract and this Subcontract shall not be construed so as to imply that any minimum ordering requirement exists as a result of this Subcontract. Subcontractor acknowledges that Contractor may, at its sole discretion, elect to place orders or not place orders for Services described in this Subcontract with Subcontractor, other subcontractors with whom Contractor has negotiated basic ordering subcontracts or other subcontractors that Contractor has determined to be suitable for the particular task. Contractor may require Subcontractor and other subcontractors to competitively bid for Task Orders.

The Subcontractor shall furnish all labor, tools, equipment, supplies, material, and licenses and shall perform all other services necessary to complete the scopes of work detailed herein.

Site Access, Security, and Mobilization. Contractor (Parsons) will arrange for site access permission from the Client (Honeywell) and property owners and will inform Subcontractor of any site access restrictions and where the staging area will be located. Under no circumstances is Subcontractor to enter the site until written permission is received from Contractor.

The Subcontractor equipment and site security are the responsibility of the subcontractor.

Geophysical clearance for underground utilities in the Kaiser facility including notification to

USAlert prior to digging are the responsibility of the civil/electrical subcontractor.

Upon receipt of written permission to access the site, Subcontractor will mobilize in accordance with the Schedule requirements and provide services herein.

Fence Removal and Site Restoration. After site access has been obtained from the Client, the drilling Subcontractor will arrange for any temporary fence removal during the project and its subsequent replacement when the project is completed.

The site will be cleaned of debris and restored by the Subcontractor following completion of the project.

Daily housekeeping will be required.

Work Schedule. The bidder is to supply in their proposal the number of workdays required to complete each scope of work. The bidder shall also provide in their proposal a timeframe for their availability. The work schedule is anticipated to be approximately 0700 to 1700 hours weekdays. This schedule is subject to confirmation prior to beginning work. The start date will be determined after selection of a Subcontractor. The work is anticipated to take place between November and December 2000.

Waste Management. Any potentially hazardous wastes (solid and liquid), personal protective equipment (PPE), and decontamination wastes shall be segregated and temporarily stored in the staging area (to be determined) in roll-off bins to be supplied by the Well Installation Contractor. The Client will direct the off-site transportation and disposal of hazardous materials and will issue all manifests using Honeywell's EPA identification number.

Health and Safety Requirements. All on-site subcontractor personnel shall have completed the 40-hour HAZWOPER health and safety training as specified by the Occupational Safety and Health Administration (OSHA) in Title 29, Code of Federal Regulations, Part 1910.120, paragraph (e) (29 CFR 1910.120[e]) and shall have current 8-hour annual refresher certificates of training. All work at the site will be completed in compliance with the Parsons ES site specific Health and Safety Plan. Vapor monitoring during invasive operations will be completed by Parsons ES personnel. Additionally, site work will be in accordance with Honeywell's safety requirements, as well as those of the property owner's.

2. DEFINITIONS

A. Contractor's Authorized Releaser: Contractor designates the following Contractor representatives ("Authorized Releaser") as authorized to issue Task Orders pursuant to this Subcontract (S/C):

<u>Name</u>	<u>Telephone/Fax</u>	<u>S/C Amendment & Task Order Limit</u>
Steve Fiumano	(626) 440-2440/fax -6195	USD \$100,000
Larry Owens	(626) 440-6182/fax -6195	USD \$500,000
Jesse Harmon	(626) 440-2483/fax -6195	>USD \$500,000

Such delegation of authorization may be changed from time to time at Contractor's option with any such changes being confirmed by a unilateral change notice to this Subcontract issued by Contractor.

B. Changes: Pursuant to the Changes and Extra Work clause of this Subcontract, Change Order may pertain to this Subcontract or to an individual Task. Change Orders that pertain to a

task shall be documented and authorized on a Task Order Authorization Form or issued by a subcontract amendment.

C. Deliverable: Deliverable means the product or services to be delivered to the Contractor by the Subcontractor, including but not limited to such items as the following: supplies, materials, equipment, parts, services (all types of services – consulting, engineering, technical, construction, professional, business, administrative, etc.), labor hours, drawings, specifications, maps, lab test results, reports, manuals, articles, research efforts, analyses, computations, observations, presentations, meeting attendance, team participation, coordination activities, trips, a specified level of effort or end product, etc..

D. Task Order (TO): A written authorization issued pursuant to the Subcontract requirements herein, authorizing Subcontractor to proceed with Work or Services. Task Order types are as follows:

“Level-of-Effort (LOE) term form” type task order: Subcontractor shall not be obligated to perform and the Contractor shall not be obligated to pay costs in excess of the Subcontract or Task Order Compensation Amount or incurred beyond the period of performance. For purposes of this subcontract, under a LOE TO, the deliverable due is provided to the Contractor in the condition it exists at the time the TO schedule expires or price limit is reached (whichever event occurs first). The Subcontractor agrees, on a best effort basis, to provide such deliverable(s) in a satisfactory condition or performance level, to the extent practical.

“Completion form” type task order: Deliverable(s) are required by the schedule completion date in accordance with the requirements and quality level contemplated by the Section O “SOW” and other terms of this subcontract (e.g., warranty, insurance, indemnification, etc.). For purposes of this subcontract, the deliverable(s) are still due to Contractor even if the Subcontractor exceeds the subcontract or task order price, or overruns the schedule. The Contractor is not obligated to increase the subcontract or task order price, extend schedule of any task order, or modify any other requirements or terms & conditions of the subcontract or TO(s).

3. SUBCONTRACTOR RESPONSIBILITIES

A. Within the time specified in a Task Order proposal request, Subcontractor shall submit for review and approval of Contractor's Authorized Releaser a proposal for the required Services (including supplies, materials, equipment, if applicable). Subcontractor's proposal shall be submitted with the detail and in the format required by Contractor.

B. Unless otherwise required by the Task Order, Subcontractor shall commence Services immediately upon receipt of a fully executed Task Order.

C. Subcontractor shall professionally and expeditiously perform the Services in strict accordance with this Subcontract, all subsequent parts of this Subcontract, and direction as given in the Task Order Authorization Form.

D. Subcontractor shall not perform any Services not authorized by a fully executed Task Order or Notice-To-Proceed (NTP) or Subcontract Amendment. **Caution:** Subcontractor shall promptly notify the Contractor's Subcontract Administrator if, in any way, Subcontractor believes

that Contractor personnel have requested or directed Subcontractor to perform in a manner inconsistent with Subcontract or Task Order requirements herein or for which Subcontractor may make a claim for equitable adjustment (e.g., claim for payment that exceeds the subcontract price or schedule extension).

4. TASK ORDER AUTHORIZATION

The Services to be performed under the terms of this Subcontract will be authorized by means of a Subcontract Amendment or a Task Order Authorization Form (attached hereto as an Exhibit) issued and approved by Contractor's Authorized Releaser designated herein. Only Contractor's Authorized Releaser(s) are authorized to issue Task Orders hereunder and Subcontractor shall not perform Services that are not released in full compliance with the terms of this Subcontract. All Task Orders issued by Contractor's Authorized Releaser(s) shall be written and subject to the terms and conditions of this Subcontract. Subcontract terms and conditions may not be modified by a Task Order.

Following receipt of an un-executed Task Order Release Form or a request for Task Order proposal, but prior to commencement of Services, Subcontractor will submit for review and approval of Contractor's Authorized Releaser a priced proposal (e.g., LS, FFP, FUR, T&M, NTE, CPFF, etc.) to accomplish the requested Services. The Task Order proposal shall include a detailed cost breakdown by Work Breakdown Structure (WBS) for the Services including (1) all direct and indirect rates and fee/profit used to develop pricing (including labor billing rates) unless such pricing has previously been agreed upon and has been made part of the subcontract; (2) a detailed breakdown of labor hours and costs by labor classification by tasks using allowable direct labor rates and (3) a detailed breakdown by task of labor hours to be used and an Not-To-Exceed (NTE) allowance for Other Direct Costs (ODCs) which may include (but not limited to) travel & per diem, communications, reproduction, any lower tier subcontractor costs, and costs for materials, supplies, and equipment.

Task Orders shall fully describe the scope, schedule, deliverables, whether the TO is a "Level of Effort" (LOE) or "Completion" type, and price (e.g., T&M/NTE, FFP, etc.) of the Services being released. Drawings and specifications, if appropriate, shall be referenced in the release and such reference shall cause the incorporation of the drawings and or specifications into the Task Order. Once the Task Order is executed by Subcontractor and Contractor's Authorized Releaser, the Task Order shall become a Subcontract document.

5. PERIOD OF PERFORMANCE (SCHEDULE)

The term of this Subcontract, for purposes of issuing Task Order releases, shall commence on or about November 1, 2000 and terminate on December 31, 2001. Period of performance for Task Orders issued pursuant to this Subcontract shall be in accordance with the schedule set forth in the Task Order. Subcontractor shall pursue the services diligently and provide sufficient personnel, materials, supplies, tools, equipment, any other necessary items/activities, and shall complete the services/supplies during the Task Order period of performance cited.

- Task Order no. 1 "Supply SVE Equipment": 11-1-00 to 12-31-00 or TBD.
- Task Order no. 2 "Civil/Electrical Installation of SVE System": 11-1-00 to 12-31-00 or TBD.

EXHIBIT PROPOSAL REQUIREMENTS

Although Parsons requires no specific format, this section is intended to provide guidelines to Subcontractor regarding information that Parsons expects within the proposal.

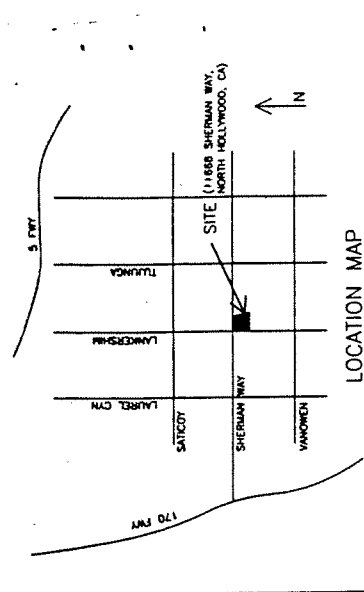
Content & Format

Organize and present Proposal in a neat and logical format, relevant to these services. Proposals shall be clear, accurate, and comprehensive. Excessive or irrelevant material, such as boilerplate promotional information, shall not be favorably received. Submit a separate Fee Proposal to contain only enough pages to clearly respond to the information that is requested. The proposal should include the following:

- a) Proposed availability,
- b) Estimated time to complete each scope of work;
- c) Anticipated quantity of wastes to be generated that will require disposal (i.e. decontamination fluids, and PPE/trash);
- d) Fee Proposal for each scope (if bidding on both)

Statement of Qualifications

- List three previous projects and references for projects with similar well installation.
- Provide evidence of hazardous waste certifications for the proposed on-site personnel.

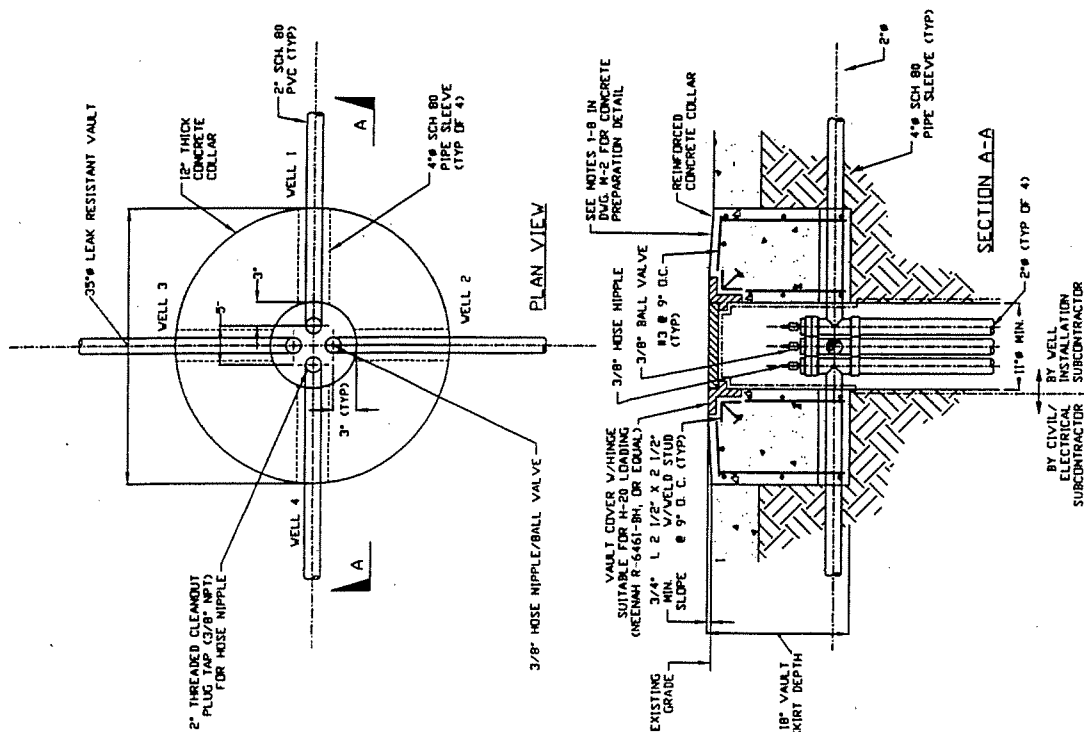
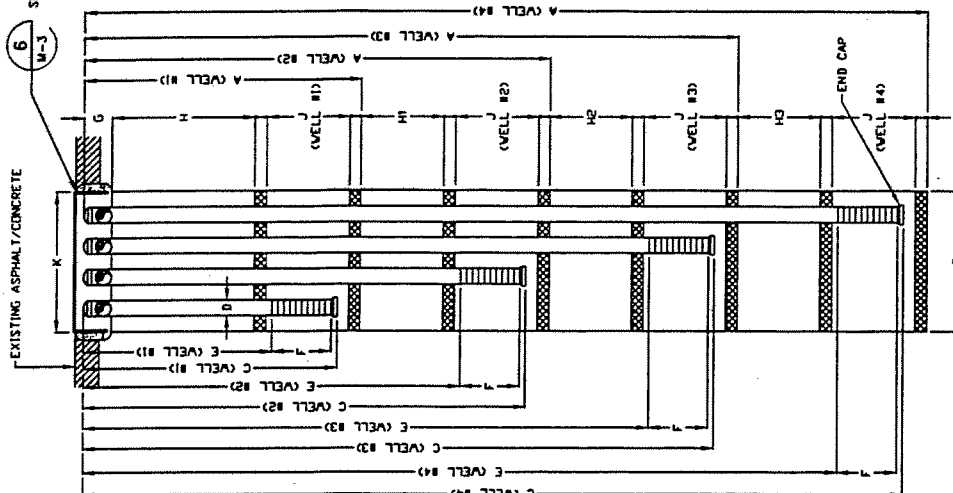


SEE SVE VAULT DETAIL

1. THE WELL INSTALLATION SUBCONTRACTOR SHALL PROVIDE TEMPORARY WELL HEAD BOX AND TEMPORARY CAP TO SEAL WELL OUTLETS UPON COMPLETION OF THE WELL INSTALLATION.

WELL SCHEDULE

WELL CONSTRUCTION			EXTRACTION WELLS			
			WELL-1	WELL-2	WELL-3	WELL-4
A	TOTAL DEPTH TO BOTTOM OF WELL SEAL (FT)		73	113	183	203
B	BOREHOLE DIAMETER (IN)		11	11	11	11
C	TOTAL CASING LENGTH		70	110	160	200
D	CASING MATERIAL		SCH. 80 PVC	SCH. 80 PVC	SCH. 80 PVC	SCH. 80 PVC
E	CASING INSIDE DIAMETER (IN)		2	2	2	2
F	DEPTH TO TOP PERFORATIONS		50	90	140	180
F	PERFORATED LENGTH (FT)		20	20	20	20
F	PERFORATED INTERVAL (FROM-TO)		50-70	90-110	140-160	180-200
F	PERFORATION TYPE		SLOT	SLOT	SLOT	SLOT
F	PERFORATION SIZE		0.04	0.04	0.04	0.04
G	SURFACE SEAL THICKNESS MINIMUM		1	1	1	1
G	SURFACE SEAL MATERIAL		CONCRETE	CONCRETE	CONCRETE	CONCRETE
H	BACKFILL THICKNESS		47	-	-	-
H	BACKFILL MATERIAL		1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS
H1	BACKFILL THICKNESS		-	14	-	-
H1	BACKFILL MATERIAL		1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS
H2	BACKFILL THICKNESS		-	-	23	-
H2	BACKFILL MATERIAL		1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS
H3	BACKFILL THICKNESS		-	-	-	14
H3	BACKFILL MATERIAL		1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS	1/4" VOLCLAY* TABLETS
I	SEAL THICKNESS MINIMUM		2	2	2	2
I	SEAL MATERIAL		CHIP BENTONITE	CHIP BENTONITE	CHIP BENTONITE	CHIP BENTONITE
J	FILTER PACK THICKNESS		23	22	22	22
J	FILTER MATERIAL		10-20 SAND MESH	10-20 SAND MESH	10-20 SAND MESH	10-20 SAND MESH
K	WELL COVER DIAMETER (IN)		11.5	11.5	11.5	11.5



WELL CONSTRUCTION SCHEMATIC

6 SVE VAULT DETAILS
SCALE: 1/8" = 1'-0"

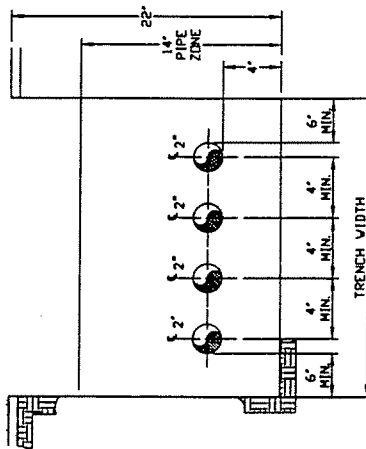
**PARSONS
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Pasadena, California

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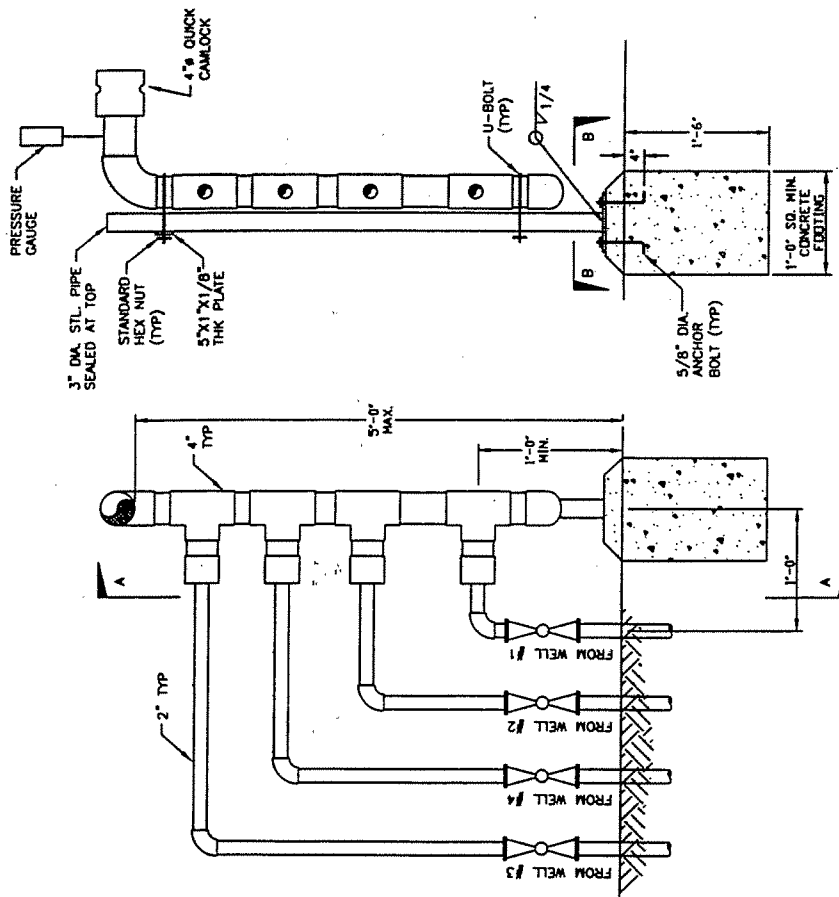
001602

1. SAW CUT EXISTING AC PAVEMENT AND REPAIR PER NOTE NO. 5.
2. MAINTAIN 2" MINIMUM DISTANCE BETWEEN ALL PIPES.
3. TRENCH BEDDING SHALL BE PEA GRAVEL OR OTHER ACCEPTABLE MATERIAL AND PLACED PER SSPWC 306-1.2.1. SAND HAVING COEFFICIENT OF PERMEABILITY GREATER THAN 0.001 CENTIMETERS PER SECONDS SHALL BE USED AS THE BEDDING MATERIAL IN THE PIPE ZONE.
4. BACKFILL AND COMPACT TRENCH AFTER PIPING IS INSTALLED PER SSPWC-306-1.3. COMPACT TO 90 PERCENT RC.
5. SURFACE SHALL BE RESTORED TO MATCH EXISTING GRADE. PLACE 4" AC PATCH COMPACTED ON 4" CRUSHED ROCK.
6. AC BITUMINOUS MATERIAL SHALL BE VISCOSITY GRADE AR-4000.

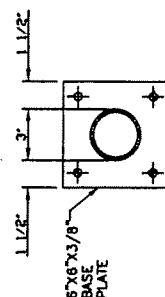
TRENCH WIDTH DATA		
NO. OF PIPES	SIZE	TRENCH WIDTH
4	2", 2", 2", 2"	26" (MIN.)
1	2"	18"



4 TRENCHING DETAIL SECTION
G-1 SCALE: N.T.S.



SECTION A-A



SECTION 8-B

1. CONCRETE SHALL BE PORTLAND CEMENT TYPE V CONFORMING TO ASTM C150. WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT. MINIMUM OF 85 PERCENT OF CEMENT BY WEIGHT SHALL PASS A 325 SCREEN.
2. CONCRETE SHALL HAVE THE ULTIMATE STRENGTH OF A MINIMUM OF 3000 PSI AT 28 DAYS.
3. AGGREGATES FOR CONCRETE SHALL CONFORM TO ASTM C33 AND SHALL BE COMBINED IN PROPORTIONS THAT WILL PROVIDE A MIXTURE WITHIN GRADING LIMITS.
4. POTABLE WATER ONLY SHALL BE USED FOR CONCRETE.
5. WATER-REDUCING ADMIXTURES SHALL BE TYPE A CONFORMING TO ASTM C494.
6. SET-CONTROL ADMIXTURES SHALL BE TYPE B RETARDING OR TYPE D WATER-REDUCING AND RETARDING.
7. CURING MATERIALS AND FORMS SHALL BE APPROVED PRIOR TO THEIR USE.
8. EXPOSED EDGES OF CONCRETE SHALL HAVE A 3/4" CHAMFER UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
9. PRESSURE GAUGE MOUNTED ON THE MANHOLE PIPE SHALL BE ASHPOFT 25-1490-026-200/0" H₂O OR EQUAL.
10. SSPWC - STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
11. SOC - SOCKET.

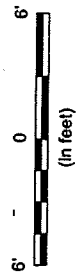
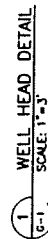
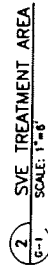
9 ABOVE GROUND PIPE SUPPORT
(FENCE ATTACHMENT)
W-1 SCALE: N.T.S.

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NOTES										MECHANICAL & STRUCTURAL DETAIL									
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DATE										DATE									
BY										BY									
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001603

1. SYSTEM TO BE FURNISHED BY EQUIPMENT SUPPLIER.
2. REFER TO SHEET 1-2 FOR SVE SYSTEM REQUIREMENTS.
3. SVE TREATMENT SYSTEM DIMENSIONS AND LAYOUT ARE APPROXIMATE. ACTUAL SYSTEM MAY VARY.



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[illegible]

001604

PROCESS SYMBOLS

BASIC SYMBOLS (CONT'D)



ITEMS MARKED & ARE INTEGRAL PART OF MECHANICAL COMPONENT SUBMITTED.

1A SUB-TITLE (MAY BE LETTER OR DIGIT OR BOTH)

MISCELLANEOUS SYMBOLS (CONT'D)



LINE CODES (CONT'D)



PROCESS SYMBOLS

MISCELLANEOUS_MECHANICAL_ITEMS

FUNCTION SYMBOL, SYMBOLICAL

LETTER	MEASURED OR MECHANICAL VARIABLE	FIRST LETTER	REASON OR PHYSICAL FUNCTION	SUCCESSING LETTERS	MODIFIER
A	AMPLITUDE	A	ALARM		
B	BURNER	B			
C	CONDUCTANCE (ELECTRICAL)	C			
D	DENSITY OR SPECIFIC GRAVITY	D	DIFFERENTIAL		
E	EXTENSION (ELECT.)	E		ENERGY ELEMENT	
F	FLOW RATE	F	FAULT (FUNCTION)		
G	GAS	G	CLASS		
H	HEAD (MECHANICALLY INDICATED)	H			
I	CURRENT (ELECTRICAL)	I	INDICATE		
J	POWER	J	SCAN		
K	THE TEMPERATURE	K	THE MADE OF CHOICE		
L	LEVEL	L	LIGHT (PHOTO)		CONTROL SECTION
M	MOTOR	M	MONITORING		
N		N	ENTER		
O	OPERATION	O	OFFSET		
P	PRESSURE (ELECTRICAL) VACUUM	P	ONCE (RESTRICTION)		
Q	QUANTITY OR COUNT	Q	INTERIOR OR OUTSIDE		
R	REACTION	R	RECORD OR PRINT		
S	SPEED OF FREQUENCY	S	SAFETY		SWITCH
T	TEMPERATURE	T			TRANSFORMER
U	UNUSUAL VARIABLE	U	UNIFORM		UNIFORM FUNCTION
V	VIBRATION	V			VARIABLE FUNCTION
W	WEIGHT FORCE OR PRESSURE	W			
X	UNCLASSIFIED VARIABLE	X	EXTRACTION (SEE SYSTEMS)		
Y		Y			YIELDING MATERIAL
Z	POSITION	Z			ZONE OR LIMIT OR UNCLASSIFIED (FUNCTIONAL ELEMENT)

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[illegible]

3. THE SVE TREATMENT EQUIPMENT SUPPLIER SHALL SUBMIT THE SVE TREATMENT PACKAGE PLAN FOR APPROVAL BY THE PROPOSED SYSTEM WARES WITH THE DESIGN AS SHOWN ON DRAWING I-2.
4. THE SVE TREATMENT EQUIPMENT SUPPLIER SHALL FURNISH SCANDIUM OXIDE PERMIT FOR THE SVE TREATMENT PACKAGE SYSTEM.
5. THE SVE TREATMENT PACKAGE SHALL BE DESIGNED TO TREAT 200 SCFM VAPOR CONTAINING TYPICAL CONTAMINANTS AS SHOWN IN THE CHEMICAL CONTAMINANT CONCENTRATION SUMMARY.
6. EACH ACTIVATED CARBON CANISTER SHALL CONTAIN A MINIMUM OF 1,000 POUNDS OF CARBON.
7. ELECTRICAL COMPONENTS OF THE SVE TREATMENT SYSTEM SHALL MEET THE MOST CURRENT INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) STANDARDS AND NATIONAL FIRE PREVENTION ASSOCIATION (NFPA) STANDARDS.
8. THE BLOWER IN THE SVE TREATMENT PACKAGE SHALL BE POSITIVE DISPLACEMENT BLOWER RATED 200 SCFM @60" H₂O VACUUM TO MEET PERMIT REQUIREMENTS AND BE CAPABLE OF TREATING CHEMICAL CONTAMINANTS AT THE DESIGN FLOW RATE.
9. THE AFTERCOOLER DISCHARGE TEMPERATURE SHALL NOT BE 10° F HIGHER THAN THE AMBIENT TEMPERATURE.
10. THE KNOCKOUT DRUM ON THE TRAILER SHALL BE EQUIPPED WITH ADEQUATE ELEVATION TO COMPLETELY DRAIN THE DRUM AND FILL THE DUST APPROVED 55 GALLON CONTAINER BY GRAVITY OR BY PROVIDING AN ADDITIONAL DRAIN PUMP.



SOIL VAPOR CHEMICAL CONTAMINANT CONCENTRATION SUMMARY
(ug/L)

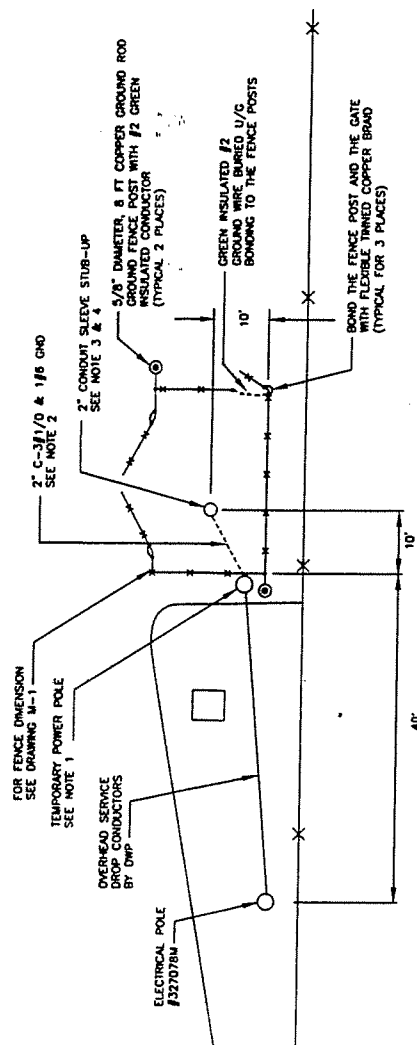
	cis-1,2-DCE	Chloroform	1,1,1-TCA	TCE	1,1,2-TCA	PCE	1,1-DCE	Benzene	Toluene	Elthylbenzene	m/p-Xylene	o-Xylene
	51	99	36	26,000	6.8	22	17	3.4	270	29	190	28

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[illegible]

001606

1. THE C/W ELECTRICAL SUBCONTRACTOR SHALL INSTALL A TEMPORARY 20 FT LONG POWER POLE. THE POWER POLE SHALL BE INSTALLED PER DWP STANDARD AND AT A LOCATION NOT EXCEEDING 50' FROM UTILITY POWER POLE. THE C/W ELECTRICAL SUBCONTRACTOR SHALL PROVIDE A SOCKET (PER DWP STANDARD) AND DISCONNECT SWITCH. THE Riser SHALL BE METALLIC CONDUIT.
2. 2" PVC CONDUIT RACEWAY SHALL BE ROUTED UNDERGROUND FROM THE DISCONNECT SWITCH TO THE STUB-UP LOCATION BY THE C/W ELECTRICAL SUBCONTRACTOR. THE BURIED CONDUIT RACEWAY SHALL BE MINIMUM 18" BELOW FINISH GRADE.
3. SLEEVE ELBOW AT THE POWER POLE AND STUB-UP LOCAL SHALL BE RIGID STEEL GALVANIZED. THE EXTENDED CONDUIT AT THE STUB-UP LOCATION SHALL BE MINIMUM 6" ABOVE GRADE AND CAPPED.
4. THE EQUIPMENT SUPPLIER SHALL EXTEND THE CONDUIT RACEWAY TO THE POWER PANEL SUPPLIED WITH THE EQUIPMENT AND PULL POWER CONDUCTORS FROM THE DISCONNECT SWITCH TO THE POWER PANEL.
5. THE EQUIPMENT SUPPLIER SHALL PROVIDE ONE WEATHER-PROOF TYPE 120 VAC RECEPTACLE OUTLET AND ONE 4" COMPACT FLUORESCENT FIXTURE AND SWITCH IN WEATHERPROOF ENCLOSURES MOUNTED ON THE TRAILER.
6. THE LIGHTING FIXTURE SHALL BE MOUNTED ABOVE THE CONTROL PANEL.
7. ALL CONDUCTORS SHALL BE TYPE THW.



SINGLE LINE DIAGRAM

SCALE: NO SCALE

001607

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October 3, 2000

Mr. Ron Newquist
Kaiser Permanente
11626 Sherman Way
North Hollywood, CA 91605

Subject: Soil Vapor Extraction System Design

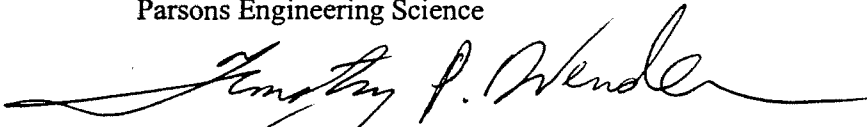
Dear Mr. Newquist:

Attached are the design drawings for the soil vapor extraction system to be installed at your facility. We will see you at 8:00 a.m. on October 10, 2000 for a site walk. Our potential subcontractors will be on site at 9:00 a.m. for their own site walk and for us to answer their questions.

If you have any questions or comments regarding this request, please call me at 626-440-6229.

Sincerely,

Parsons Engineering Science



Timothy P. Wendler
Project Manager

**QUARTERLY GROUNDWATER
MONITORING REPORT
Second Quarter 2003**

**Honeywell North Hollywood
11600 Sherman Way
North Hollywood, California**

PREPARED FOR:

Honeywell

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Torrance, California

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July 15, 2003

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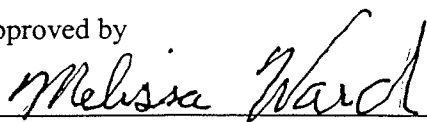
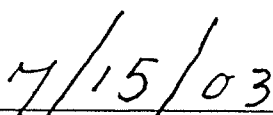

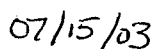
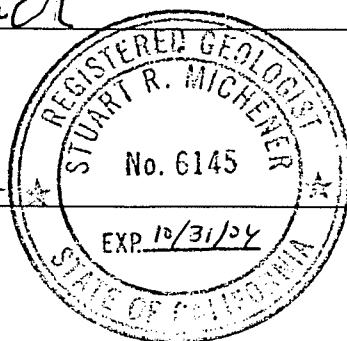
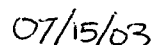
SIGNATURE PAGE

for

**Quarterly Groundwater
Monitoring Report****Second Quarter 2003****Honeywell North Hollywood
11600 Sherman Way
North Hollywood, California**

July 15, 2003

Approved by

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ACRONYMS AND ABBREVIATIONS

1,2,3-TCP	1,2,3-trichloropropane
Bgs	below ground surface
CAO	Cleanup and Abatement Order
DO	dissolved oxygen
LCS	laboratory control sample
MCL	Maximum Contaminant Level
mg/L	milligram per liter
MS	matrix spike
MSD	matrix spike duplicate
Msl	mean sea level
NDMA	n-nitrosodimethylamine
ORP	oxidation-reduction potential
QA/QC	quality assurance/quality control
RWQCB	Regional Water Quality Control Board
ULARA	Upper Los Angeles River Area
VOC	volatile organic compound

EXECUTIVE SUMMARY

Second Quarter 2003 groundwater monitoring for the Honeywell North Hollywood site, located at 11600 Sherman Way, North Hollywood, California, was conducted during the period June 10 to June 16, 2003. Field activities included water level measurement, purging, and sampling of the ten wells that comprise the monitoring network at the site. The primary objective of quarterly monitoring is to periodically re-evaluate total and hexavalent chromium and other so-called "emerging chemicals" in groundwater, including perchlorate, n-nitrosodimethylamine (NDMA), 1,4-dioxane, and 1,2,3-trichloropropane (1,2,3-TCP). The monitoring followed the methods and protocols outlined in the March 31, 2003 Assessment Workplan Addendum (Parsons, 2003a) and were intended to meet the requirements of the Regional Water Quality Control Board (RWQCB) Cleanup and Abatement Order (CAO) No. R4-2003-037 dated February 21, 2003 (RWQCB, 2003a) and the RWQCB's recent May 27, 2003 letter (RWQCB, 2003b). The results of the Second Quarter 2003 monitoring event are summarized below:

- Groundwater elevations in the unconfined aquifer ranged from 471.04 ft to 472.30 ft msl, representing an approximate 3 foot rise since the First Quarter 2003 monitoring event (Parsons, 2003b).
- Perchlorate concentrations were non-detect (i.e., <2.0 ug/L) in eight of the wells. Detectable concentrations in the remaining two wells were 2.3 ug/L (GW-9) and 4.4 ug/L (GW-3). The concentrations were very similar to the levels documented in the First Quarter 2003.
- NDMA was non-detect (i.e., <0.002 ug/L) in four of the wells. Detectable concentrations in the remaining wells ranged from 0.0022 ug/L (GW-1) to 0.025 ug/L (GW-2 and GW-5). The concentrations were very similar to the levels documented in the First Quarter 2003.
- Detectable 1,2,3-TCP was present in seven of ten wells, where the concentrations ranged from 0.0054 ug/L (GW-6) to 0.013 ug/L (GW-5). The concentrations were very similar to the levels documented in the First Quarter 2003.
- 1,4-Dioxane was detected in all wells sampled, at concentrations ranging from 1.2 ug/L (GW-9) to 20 ug/L (GW-3). With the exception of well GW-3, where the concentration of 1,4-dioxane increased from 5.2 ug/L in the First Quarter 2003 to 20 ug/L in the Second Quarter 2003, the levels of this emerging chemical were comparable to the First Quarter 2003.
- Detectable total chromium was present in eight of the ten wells. Detectable concentrations ranged from 14 ug/L (GW-9) to 3,800 ug/L (GW-3).
- Hexavalent chromium was detected in seven of the ten wells, where its concentration ranged from 1.3 ug/L (GW-9) to 3,800 ug/L (GW-3).

- Chromium concentrations in well GW-3 showed the greatest change compared to the First Quarter 2003, with total chromium increasing from 0.85 mg/L to 3.8 mg/L and hexavalent chromium increasing from 0.83 mg/L to 3.8 mg/L. Chromium concentrations did not change appreciably in wells GW-7, GW-8, GW-9, and GW-10 whereas the concentrations increased slightly in wells GW-1, GW-2, and GW-5 and decreased slightly in wells GW-4 and GW-6.
- The highest concentrations of chromium in groundwater were found in the south-central portion of the site in the Western Parcel and the Kaiser Parcel.
- In general, total and hexavalent chromium concentrations are lower than the levels reported in February 2001, but somewhat higher than the concentrations documented during the First Quarter 2003.

SECTION 1

INTRODUCTION

This report, which was prepared on behalf of Honeywell International, Inc. (Honeywell), presents the results of the groundwater monitoring for the Second Quarter 2003 at the Honeywell North Hollywood site located at 11600 Sherman Way, North Hollywood, California (Figure 1). The primary objective of the work was to monitor groundwater for the presence of total and hexavalent chromium and other so-called "emerging chemicals", including perchlorate, n-NDMA, 1,4-dioxane, and 1,2,3-TCP.

The monitoring field work and analytical procedures followed the methods and protocols outlined in the March 31, 2003 Assessment Workplan Addendum (Parsons, 2003) and was intended to meet the requirements of the Regional Water Quality Control Board (RWQCB) Cleanup and Abatement Order No. R4-2003-037 dated February 21, 2003 (RWQCB, 2003a) and their recent latter dated May 27, 2003 (RWQCB, 2003b).

1.1 SITE DESCRIPTION

The Honeywell North Hollywood site is located in the eastern portion of the San Fernando Valley at an approximate elevation of 735 to 740 feet above mean sea level. The site is bordered by Sherman Way to the north, and by the Southern Pacific Railroad Right of Way to the south (Figure 1). The present-day on-site land use is commercial, including office buildings, a self-storage business, and a retail hardware store.

From 1941 to 1992 the site was used by Bendix Corporation and later AlliedSignal/Bendix Electrodynamics (Bendix was purchased by AlliedSignal, Inc., now known as Honeywell International, Inc.) for the manufacture of hydraulic and pneumatic valves. Prior to its demolition in 1993, the Honeywell facility consisted of two main building complexes. Plant 1, constructed in 1941, the larger of the two, was located in the west and central portions of the site. Plant 2, constructed in 1949, occupied the eastern portion of the site. The site was subsequently subdivided and re-developed as three separate parcels. The western portion of the site, which served as the facility parking lot and is now known as the "Kaiser Property," was sold to Kaiser Permanente in 1991. The middle portion of the site, referred to as the "Western Parcel," was sold to Public Storage, Inc. in 1999. The eastern part of the site, known as the "Eastern Parcel," was sold to Home Depot, Inc. in 1995. Figure 2 shows the present-day layout of the Eastern and Western Parcels, as well as the approximate location of former Plants 1 and 2. Manufacturing operations at the site ceased in February 1992 and the facility was demolished the following year.

1.2 PREVIOUS INVESTIGATION AND REMEDIATION

The site has been the subject of multiple, significant subsurface investigations since the early 1980s. A brief summary of investigations and remedial actions related to chromium is presented below.

1993 Soil Investigation

In July 1993, fifty-two soil borings were drilled and sampled to depths up to 55 ft bgs as part of a site-wide chromium investigation (GTI, 1993). Soil samples were analyzed for total chromium and selected samples were analyzed for hexavalent chromium. A maximum total chromium concentration of 1,700 mg/kg was found at a depth of 5 feet bgs beneath the west-central part of Plant 1. Total chromium concentrations decreased with depth beneath this impacted part of the former facility. Hexavalent chromium concentrations in soil ranged from non-detect to 370 mg/kg. Hexavalent chromium concentrations also decreased with depth, but remained above 50 mg/kg at depths of 40 to 55 ft bgs. The concentrations of hexavalent chromium in soil beneath the former Plant 2 were significantly lower; the maximum concentration in this area was 0.9 mg/kg at a depth of 20 ft bgs (GTI, 1993).

Chromium Soil Remediation

As a requirement for the RWQCB's 1997 soil closures, chromium-impacted soil was removed from chromium "hot spots" beneath Plant 1 using a bucket auger. These bucket auger excavations extended to depths of 10 ft bgs in seven areas where chromium impacts had been previously identified. Once the excavations were complete, confirmation soil samples were collected from the bottom of each borehole to document the effectiveness of the removals (Earth Tech, 1997).

Between December 1999 and March 2000, an additional 230 tons of chromium-impacted soil was removed from Plant 1 during the redevelopment of the site by Public Storage. These soil removals extended to an approximate depth of 15 ft bgs and were located in areas of previously defined chromium-impacted soil.

In October 1994, approximately 120 cubic yards of chromium-impacted soil was removed from the former Plant 2 area (Hydrologue, 1995). The removals extended to an approximate depth of 10 ft bgs and confirmation soil samples from the bottom of the excavation demonstrated that the remaining total chromium concentrations were less than 50 mg/kg.

Chromium Groundwater Assessment

In 1991, six groundwater monitoring wells were installed in the Eastern and Western Parcels (GW-1, -2, and -3 in the Western Parcel and GW-4, -5, and -6 in the Eastern Parcel). In 1993, four additional wells were installed in the adjacent Kaiser Property (GW-7, -8, -9, and -10). Table 1 summarizes construction details for these monitoring wells. The first groundwater monitoring for chromium was conducted in selected wells in August 1993. The concentrations at that time ranged from <0.010 mg/L to 0.012 mg/L, levels below applicable regulatory thresholds.

At the RWQCB's request, groundwater samples were collected from wells GW-3 and GW-4 and analyzed for total and hexavalent chromium in July 1997 and February 1998. Honeywell voluntarily performed additional groundwater monitoring for total and hexavalent chromium in July 1998, July 1999, and February 2001, and in March 2003, formal quarterly groundwater monitoring commenced at the direction of the RWQCB. A summary of historical analytical data including the results of these sampling events is presented in Appendix D. The maximum reported total chromium concentration was 5.81 mg/L in the February 2001 sample from well GW-3.

During the July 1998 event, samples were collected using different sampling methods to evaluate the effect of these techniques on the analytical results. No consistent difference was noted between filtered and unfiltered samples. Samples collected from a submersible pump placed near the bottom of the well screen contained lower concentrations of chromium than those collected with a bailer. These results could be due to vertical variations in chromium concentration.

1.3 SITE REGULATORY HISTORY

In coordination with RWQCB, Honeywell conducted site investigations and remedial actions to mitigate chromium-impacted soil, as described in the previous section. In response, the RWQCB granted soil closure for both the Eastern and Western Parcels in August 1997 (RWQCB, 1997a and 1997b). Groundwater monitoring for chromium was conducted in July 1997 and February 1998 at the request of the RWQCB. In March 2001, information regarding previous historical chromium usage at the site was submitted to the RWQCB, at their request (RWQCB, 2001a). The RWQCB requested that a technical report be prepared and submitted (RWQCB, 2001b and 2001c). Honeywell developed a technical report and workplan for chromium assessment, which was submitted to the Board in December 2001 (Parsons, 2001b). In February 2003, the RWQCB issued a Cleanup and Abatement Order (CAO) for the site, requiring among other things, additional soil and groundwater assessment (RWQCB, 2003a). Most recently, the RWQCB presented review comments on the December 2001 workplan and additional investigation requirements in their letter dated May 27, 2003 (RWQCB, 2003b). This groundwater monitoring report is intended to satisfy relevant RWQCB requirements.

SECTION 2

GEOLOGY AND HYDROGEOLOGY

2.1 GEOLOGY

The site is located in the San Fernando Valley Basin which is bounded on the north and northwest by the Santa Susanna Mountains; on the north and northeast by the San Gabriel Mountains; on the east by the San Rafael Hills, on the south by the Santa Monica Mountains, and on the west by the Simi Hills.

The Basin is a Holocene-age sedimentary basin that covers approximately 122,800 acres. The maximum depth of the alluvium is about 1,000 feet. In the west part of the basin, the alluvium primarily consists of clayey sediments derived from the surrounding hills that are composed of Tertiary sedimentary rocks. The site is located in the eastern part of the valley, where sandy and gravelly alluvium was deposited by large streams originating in the nearby San Gabriel Mountains (GSA, 1986).

Soil encountered during previous drilling at the site indicates that the alluvium varies somewhat in composition and texture across the site; such variation is expected in this depositional setting. In general, the alluvial stratigraphy that comprises the unsaturated zone is dominated by interbedded sand, gravelly sand, sandy gravel and gravel. Local coarse gravel beds were also mapped during the previous logging efforts.

2.2 HYDROGEOLOGY

The site is located in the San Fernando Groundwater Basin, an important part of the water management area known as the Upper Los Angeles River Area (ULARA, 1983). Water rights in the basin were adjudicated by court decree in 1968. Since that time, groundwater extraction by water rights holders has been administered by a court-appointed basin watermaster. In the court decree, the City of Los Angeles was granted an exclusive right to extract and utilize the so-called "native water" (i.e., non-imported water) from the basin, an amount that is equivalent to 43,660 acre-feet per year. Groundwater in the basin is replenished by percolation/infiltration from rainfall, surface runoff, and from recharge utilizing imported water and detained stormwater. Significant amounts of groundwater are extracted from the basin through dewatering projects, groundwater supply wells, and groundwater remediation projects. The dewatering projects are necessary where the water table is in close proximity to the ground surface, and continuous dewatering is needed to maintain subsurface structures. Groundwater supply wells, such as the various well fields operated by the City of Los Angeles, comprise an important source of drinking water. Finally, groundwater remediation projects frequently rely on extraction and

aboveground treatment to address nearly basin wide contamination due to volatile organic compounds (VOC), nitrate, and chromium.

The general direction of groundwater flow in the basin is toward east-southeast, in the direction of the Los Angeles River Narrows. Groundwater extraction activities can locally influence, and in some circumstances, reverse the otherwise natural direction of groundwater flow due to municipal well field(s) extraction.

Based on the regional groundwater contour map prepared by the Upper Los Angeles River Area (ULARA) Watermaster, the water table in the vicinity of the site was approximately 470 feet above mean sea level when measured in September 2000. The water table in the vicinity of the site was approximately 463 feet above mean sea level when measured in April 2000 showing a seasonal fluctuation of approximately 7 feet. However, during the period 1991 through the 2003, the water table beneath the site fluctuated as much as 60 feet with more typical year-to-year variations in the range of 15 to 20 feet. Figure 3 depicts hydrographs for monitoring wells GW-1 through GW-10 based on the available data from July 1991 through July 2003.

Groundwater flow patterns at the site are heavily influenced by regional pumping. The associated supply wells operate on demand and their combined effect on the water table is difficult to predict. The North Hollywood Well Field, an east-west array of supply wells located immediately south of the site, consists of 29 extraction wells with a combined extraction capacity of 129 cubic feet per second (cfs) or approximately 20,000 acre-feet per year. The Rinaldi-Toluca Well Field, located northwest of the site, has an extraction capacity of approximately 30,000 acre-feet per year. Historical fluctuations in groundwater beneath the site are mainly due to extraction in the aforementioned well fields.

Data collected in the Second Quarter 2003 indicate that the average water table elevation is approximately 471 feet above mean sea level (approximately 265 feet bgs to 274 feet bgs). A simulated groundwater contour map for the Fall 2005, prepared by the ULARA Watermaster, predicts an approximate water elevation of 465 feet above mean sea level for the site (an approximately 5 foot draw down compared with Fall 2000).

The aquifer beneath the site is productive. Based on aquifer pumping tests conducted by ULARA Watermaster in several extraction wells located near the site, the transmissivity of the upper aquifer ranges from 4,950 to 8,560 ft²/day and the hydraulic conductivity ranges from 30 to 140 ft/day. The pumping test in nearby supply well #3810U yielded a transmissivity of 7,220 ft²/day and hydraulic conductivity of 100 ft/day assuming an aquifer thickness of 72 ft (JMM, 1992).

SECTION 3

FIELD ACTIVITIES

The purpose of groundwater monitoring is to better understand the hydrogeological conditions at the site and to periodically re-evaluate chromium and other so-called “emerging chemicals” in groundwater. The Second Quarter 2003 field work was conducted in accordance with the Technical Report and Remedial Investigation Workplan for Chromium (Parsons, 2001b) and the related Assessment Workplan Addendum (Parsons, 2003a)

Field activities for the Second Quarter 2003 monitoring event took place between June 10 and 16, 2003. They included water level measurement, purging, and sampling of the ten wells that comprise the current monitoring network (Figure 4). In addition, vertical profile groundwater samples were collected from the lower part of the screened intervals in monitoring wells GW-3, GW-7, and GW-10.

3.1 GROUNDWATER DEPTH MEASUREMENTS

The depth to groundwater from the top of the casing was measured in each well on June 10, 2003. To ensure consistent groundwater level measurement, a State-licensed surveyor from Calvada Surveying, Inc. surveyed the horizontal locations and vertical elevations of the wells on June 9 and 10, 2003. The new survey data, including the revised casing elevations presented in Table 2, was used to calculate water table elevations and evaluate groundwater flow direction and gradient, as discussed elsewhere in this report. Second Quarter 2003 groundwater elevations are summarized in Table 3 and a water table contour map based on the June 10, 2003 measurements is presented as Figure 5.

During the Second Quarter 2003 monitoring event, groundwater elevations ranged from 471.04 ft in well GW-4 to 472.30 ft in well GW-8. In general, groundwater elevations rose approximately three feet since the First Quarter 2003 monitoring event (Parsons, 2003b). Nevertheless, the present elevations are significantly lower than the historical high levels that were recorded during the 1994 to 1996 timeframe (Figure 3).

3.2 WELL PURGING AND DECONTAMINATION

Well purging was accomplished using a 2-inch submersible Grundfos® Redi-Flo II® pump. The pump was equipped with a check valve to prevent backflow into the well. Purged groundwater was temporarily contained in a holding tank or 55-gallon drum and transferred to an on-site tank prior to off-site disposal under an appropriate manifest. Decontamination of the hose and pump

was performed prior to purging according to the procedures described in the workplan (Parsons, 2001b and 2003a). Specific purging techniques are described below.

3.2.1 Conventional Purging

During this sampling event, the wells were purged based on a minimum target of three submerged casing volumes. Casing volume calculations were based on the measured depth to water and total well depth at the time of sampling. To ensure the removal of stagnant water in the well casing, the pump was initially positioned at a depth of approximately four feet below the water surface. As purging progressed, the pump inlet was carefully raised to a depth between 2 and 3 feet below the water surface. Drawdown in the well was periodically measured and recorded to ensure that the pump did not run dry.

Groundwater parameters such as temperature, pH, conductivity, turbidity, oxidation/reduction potential (ORP), and dissolved oxygen (DO) were monitored during purging. These measurements as well as visual observations were recorded on well sampling forms (Appendix A). Repeated measurements of temperature, pH, and conductivity (when successive measurements taken 1-to-3-minutes apart were within 10 percent of one another) were used to indicate stable groundwater conditions within the well, whereupon representative samples could be collected. Once purging was complete, the wells were sampled using disposable Teflon® bailers.

3.2.2 Deep Samples

During the Second Quarter 2003 sampling event, groundwater samples were collected from the lower part of the screened intervals in monitoring wells GW-3, GW-7, and GW-10 to evaluate potential vertical concentration gradients for total and hexavalent chromium. These so-called "deep" samples were purged and sampled using modified low-flow techniques at the completion of purging and sampling of regular samples using the conventional procedures described above in Section 3.2.1. Prior to purging, the submersible pump (previously discussed in this section) was carefully lowered to a point approximately five feet above the bottom of well, taking care to ensure that the pump did not contact the well bottom and any accumulated sediment. Once the pump was lowered into position, purging commenced at the lowest possible flow rate without inducing cavitation or erratic discharge. Given the nearly 300-foot lift requirements at the site and the equipment employed, the lowest sustainable flow rate ranged from approximately 0.5 to 1.0 liters per minute (L/m). Water levels were periodically sounded during purging to ensure that well purging was not producing significant drawdown.

During deep sample purging, groundwater parameters including temperature, pH, conductivity, turbidity, oxidation/reduction potential (ORP), and dissolved oxygen (DO) were monitored as discussed above. Stabilization of all these parameters (when successive measurements taken at least 5 minutes apart were within 10 percent of one another) purging was sufficient to ensure the collection of representative groundwater samples. After purging, the deep samples from wells GW-3, GW-7, and GW-10 were collected directly from the pump discharge line.

3.3 GROUNDWATER SAMPLING

The ten monitoring wells were sampled following purging as described above. With the exception of the deep samples from wells GW-3, GW-7, and GW-10, groundwater samples were obtained using disposable Teflon® bailers equipped with bottom-draining devices. Groundwater samples designated for 1,2,3-TCP analysis were collected in laboratory-supplied 40-milliliter VOA vials that were preserved with hydrochloric acid. Samples for NDMA and 1,4-dioxane analyses were collected in 1-liter amber bottles with no preservatives. Samples for perchlorate analysis were collected in 500-ml plastic bottles with no preservatives. Samples for total metals and hexavalent chromium analyses were collected in 500-ml plastic bottles preserved with nitric acid and sodium hydroxide, respectively.

Sample handling and management was performed according to the procedures outlined in the RWQCB-approved workplan (Parsons, 2001b and 2003a). All samples were labeled, sealed, and placed in an ice-filled, insulated cooler to maintain a shipping temperature of 4 degrees Centigrade. A trip blank consisting of two VOA vials filled with reagent-grade water were submitted to evaluate the effect of transport to and from the laboratory. Chain-of-custody forms were completed in the field and accompanied all samples during shipment.

SECTION 4

GROUNDWATER ANALYTICAL RESULTS

This following section describes the results of laboratory analysis for RWQCB-specified chemicals of potential concern (COPCs) for the Second Quarter 2003. Laboratory analytical reports are presented in Appendix B. The field component of the QA/QC program included the collection of duplicate samples, and submittal of trip blanks. The laboratory QA/QC program included calibration against internal standards, surrogate recoveries, and matrix spike/matrix spike duplicate samples. A discussion of the QA/QC results for this event is provided in Appendix C.

4.1 GROUNDWATER ANALYTICAL PROGRAM

All groundwater samples were analyzed by Del Mar Analytical, a fixed-location laboratory in Irvine, California that is certified by the State of California Department of Health Services. The groundwater samples from the ten on-site monitoring wells were analyzed for Title 22 metals (including total chromium) by EPA Methods 6010B and 7470A, hexavalent chromium by EPA Method 7199, 1,4-dioxane by EPA Method 8270C Modified, 1,2,3-TCP by EPA Method 8260B Modified, perchlorate by EPA Method 314.0, and NDMA by EPA Method 1625C Modified. In addition, the deep samples from wells GW-3, GW-7, and GW-10 were analyzed for Title 22 metals and hexavalent chromium by the relevant methods discussed above. To support the development of an Interim Groundwater Remedial Action Plan (IGWRAP) for the site, additional tests were performed on selected groundwater samples; the results of those tests are discussed separately in the IGWRAP document (Parsons, 2003c).

4.2 ANALYTICAL RESULTS

Tables 3 and 4 summarize the analytical results for groundwater samples collected during the Second Quarter 2003 monitoring event. Total chromium was detected in eight of the ten wells at concentrations ranging from 14 ug/L (GW-9) to 3,800 ug/L (GW-3). Hexavalent chromium was detected in seven of the ten wells sampled at concentrations ranging from 1.3 ug/L (GW-9) to 3,800 ug/L (GW-3). In general, the highest chromium concentrations in groundwater were found in the south-central portion of the site in the south part of the Western Parcel and the southeast part of the Kaiser Parcel (Figure 6). The chromium concentrations in source area well GW-3 showed the greatest change compared to the previous monitoring event (i.e., First Quarter 2003), with total chromium increasing from 0.85 mg/L to 3.8 mg/L and hexavalent chromium increasing from 0.83 mg/L to 3.8 mg/L. Chromium concentrations did not change appreciably in wells GW-7, GW-8, GW-9, and GW-10 whereas the concentrations increased slightly in wells GW-1, GW-2, and GW-5 and decreased slightly in well GW-4 and GW-6.

The levels of total and hexavalent chromium in deeper groundwater samples collected from the lower part of the screened intervals in wells GW-3, GW-7, and GW-10 were similar to, or in the case of sample GW-3-D, somewhat less than the bailer-collected samples from the upper portion of the (submerged) screen interval. The depth-discrete results for source area well GW-3 suggest that chromium concentrations decrease with increasing depth in the saturated zone beneath that part of the site. In wells GW-7 and GW-10, the results for the so-called shallow and deep samples were very similar, suggesting that significant concentrations gradients for chromium are not likely to be present.

Figure 7 presents a graphical representation of the results of emerging chemical analysis. All ten wells contained detectable, albeit low-level concentrations of 1,4-dioxane ranging from 1.2 ug/L (GW-9) to 20 ug/L (GW-3). With the exception of well GW-3, where the concentration of 1,4-dioxane increased from 5.2 ug/L in the First Quarter 2003 to 20 ug/L in the Second Quarter 2003, the levels of this emerging chemical were comparable to the previous monitoring event. 1,2,3-TCP was detected in seven wells at concentrations ranging from 0.0054 ug/L (GW-6) to 0.013 ug/L (GW-5) whereas NDMA was detected in six wells at concentrations ranging from 0.0022 ug/L (GW-1) to 0.025ug/L (GW-2 and GW-5). Perchlorate was detected in two wells at concentrations of 2.3ug/L (GW-9) and 4.4ug/L (GW-3). The concentrations of 1,2,3-TCP, NDMA, and perchlorate were very similar to the levels reported for the previous First Quarter 2003 monitoring event (Parsons, 2003b).

SECTION 5

CONCLUSIONS AND RECOMMENDATIONS

The results of the Second Quarter 2003 monitoring event are summarized below:

- Groundwater elevations in the unconfined aquifer ranged from 471.04 ft to 472.30 ft msl, representing an approximate 3 foot rise since the First Quarter 2003 monitoring event.
- Perchlorate concentrations were non-detect (i.e., <2.0 ug/L) in eight of the wells. Detectable concentrations in the remaining two wells were 2.3 ug/L (GW-9) and 4.4 ug/L (GW-3). The concentrations were very similar to the levels documented in the First Quarter 2003.
- NDMA was non-detect (i.e., <0.002 ug/L) in four of the wells. Detectable concentrations in the remaining wells ranged from 0.0022 ug/L (GW-1) to 0.025 ug/L (GW-2 and GW-5). The concentrations were very similar to the levels documented in the First Quarter 2003.
- Detectable 1,2,3-TCP was present in seven of ten wells, where the concentrations ranged from 0.0054 ug/L (GW-6) to 0.013 ug/L (GW-5). The concentrations were very similar to the levels documented in the First Quarter 2003.
- 1,4-Dioxane was detected in all wells sampled, at concentrations ranging from 1.2 ug/L (GW-9) to 20 ug/L (GW-3). With the exception of well GW-3, where the concentration of 1,4-dioxane increased from 5.2 ug/L in the First Quarter 2003 to 20 ug/L in the Second Quarter 2003, the levels of this emerging chemical were comparable to the First Quarter 2003.
- Detectable total chromium was present in eight of the ten wells. Detectable concentrations ranged from 14 ug/L (GW-9) to 3,800 ug/L (GW-3).
- Hexavalent chromium was detected in seven of the ten wells, where its concentration ranged from 1.3 ug/L (GW-9) to 3,800 ug/L (GW-3).
- Chromium concentrations in well GW-3 showed the greatest change compared to the First Quarter 2003, with total chromium increasing from 0.85 mg/L to 3.8 mg/L and hexavalent chromium increasing from 0.83 mg/L to 3.8 mg/L. Chromium concentrations did not change appreciably in wells GW-7, GW-8, GW-9, and GW-10 whereas the concentrations increased slightly in wells GW-1, GW-2, and GW-5 and decreased slightly in wells GW-4 and GW-6.
- In general, total and hexavalent chromium concentrations are somewhat higher than the concentrations documented during the First Quarter 2003. This change could be

associated with fluctuations in water table elevations, which rose approximately 3 feet between March 2003 and June 2003. Such trends will be evaluated through continued monitoring.

The next groundwater monitoring event will be performed in the Third Quarter 2003 and a report documenting the results of that work will be submitted to the RWQCB on October 15, 2003. As proposed in the recent Revised Remedial Investigation Workplan (Parsons, 2003d), the need for continued monitoring of emerging chemicals will be determined once the Fourth Quarter 2003 monitoring results have been received and reviewed. As proposed in that workplan, additional depth-discrete groundwater sampling is planned in wells GW-1, GW-3, GW-7, and GW-10 to further evaluate vertical chromium concentration gradients within the saturated zone.

SECTION 6

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Tables

Table 1
Well Construction Details
Honeywell North Hollywood Site

Well ID	Well Installation Date	Screen Length (feet)	Screen Interval (ft bgs)	Total Depth (ft bgs)	Well Diameter (inches)	Screen Slot Size (inches)	Screen Type
GW-1	07/12/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-2	07/01/91	60	241-301	301	4	0.030	Sch 80 PVC
GW-3	07/09/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-4	07/03/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-5	06/27/91	60	248-308	308	4	0.030	Sch 80 PVC
GW-6	07/16/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-7	07/01/93	80	230-310	310	4	0.030	Steel
GW-8	07/19/93	80	225-305	305	4	0.030	Steel
GW-9	07/23/93	80	223-303	303	4	0.030	Steel
GW-10	07/12/93	80	230-310	310	4	0.030	Steel

Table 2
Groundwater Elevations - 2nd Quarter 2003
Honeywell North Hollywood Site

Well ID	Date Measured	Top of Casing Elevation (ft msl) ^{1/}	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
GW-1	06/10/03	741.90	270.11	471.79
GW-2	06/10/03	741.11	268.86	472.25
GW-3	06/10/03	738.99	266.78	472.21
GW-4	06/10/03	742.90	271.86	471.04
GW-5	06/10/03	742.23	270.22	472.01
GW-6	06/10/03	745.06	273.71	471.35
GW-7	06/10/03	736.95	264.72	472.23
GW-8	06/10/03	744.28	271.98	472.30
GW-9	06/10/03	743.05	270.77	472.28
GW-10	06/10/03	739.91	267.78	472.13

^{1/} Based on June 2003 survey, Calvada Surveying
ft msl = Feet Above Mean Sea Level
ft btoc = Feet Below Top of Casing

Table 3
Summary of Metals Analytical Data - 2nd Quarter 2003
Honeywell North Hollywood Site

Well ID	Sample Date	(ug/L)																	
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium, total	Chromium, +6	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
GW-1	06/16/03	<10	<5	130	<4	<5	260	220	<10	<10	<5	<0.2	<20	<10	<5	<10	<5	<10	<20
GW-2	06/10/03	<10	<5	120	<4	<5	29	26	<10	<10	<5	<0.2	<20	<10	<5	<10	<5	<10	<20
GW-3	06/11/03	<10	<5	150	<4	<5	3,800	3,800	<10	<10	<5	<0.2	<20	<10	<5	<10	<5	<10	<20
GW-3-D*	06/11/03	<10	<5	100	<4	<5	2,700	2,700	<10	<10	<5	<0.2	<20	<10	<5	<10	<5	<10	<20
GW-4	06/13/03	<10	<5	120	<4	<5	<5	<1	<10	<10	<5	<0.2	<20	<10	<5	<10	<5	<10	<20
GW-5	06/13/03	<10	<5	140	<4	<5	27	22	<10	<10	<5	<0.2	<20	<10	<5	<10	<5	<10	<20
GW-6	06/10/03	<10	<5	150	<4	<5	<5	<1	<10	<10	<5	<0.2	<20	<10	<5	<10	<5	<10	<20
GW-7	06/11/03	<10	<5	140	<4	<5	530	310	<10	<10	<5	<0.2	<20	16	<5	<10	<5	<10	<20
GW-7-D*	06/11/03	<10	<5	130	<4	<5	340	280	<10	<10	<5	<0.2	<20	12	<5	<10	<5	<10	<20
GW-8	06/10/03	<10	<5	140	<4	<5	32	<1	<10	<10	<5	<0.2	<20	<10	<5	<10	<5	<10	<20
GW-9	06/16/03	<10	<5	210	<4	<5	14	1.3	<10	<10	<5	<0.2	<20	<10	<5	<10	<5	<10	<20
GW-10	06/11/03	<10	<5	140	<4	<5	120	85	<10	<10	<5	<0.2	<20	10	<5	<10	<5	<10	28
GW-10-D*	06/11/03	<10	<5	160	<4	<5	450	84	<10	<10	<5	<0.2	<20	58	<5	<10	<5	<10	21
																			<20

*Sample from lower part of well

*Sample from lower part of well screen interval.

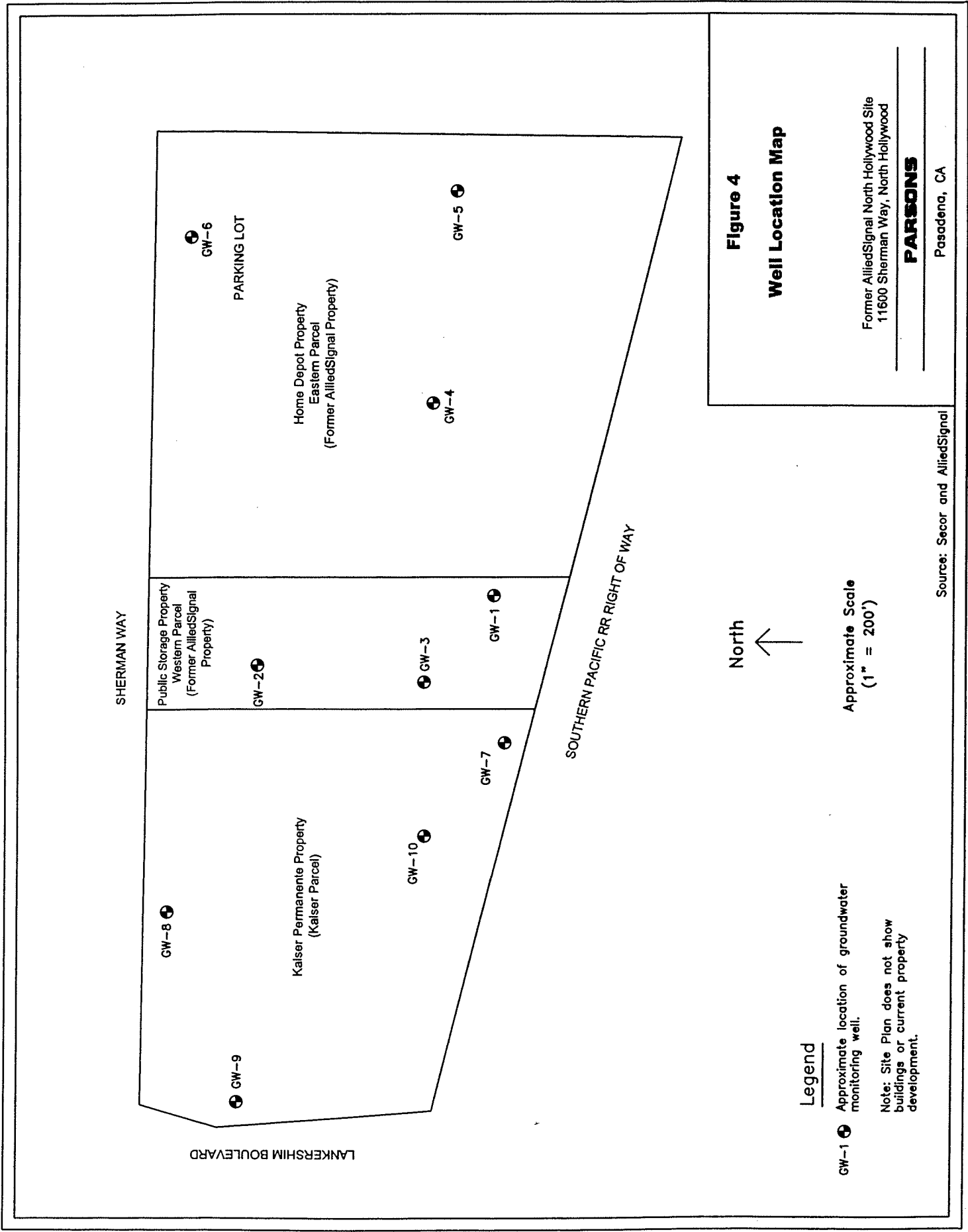
All metals were analyzed using EPA Method 6010B with the exception of chromium 6+ (EPA Method 7199) and mercury (EPA Method 7470A)

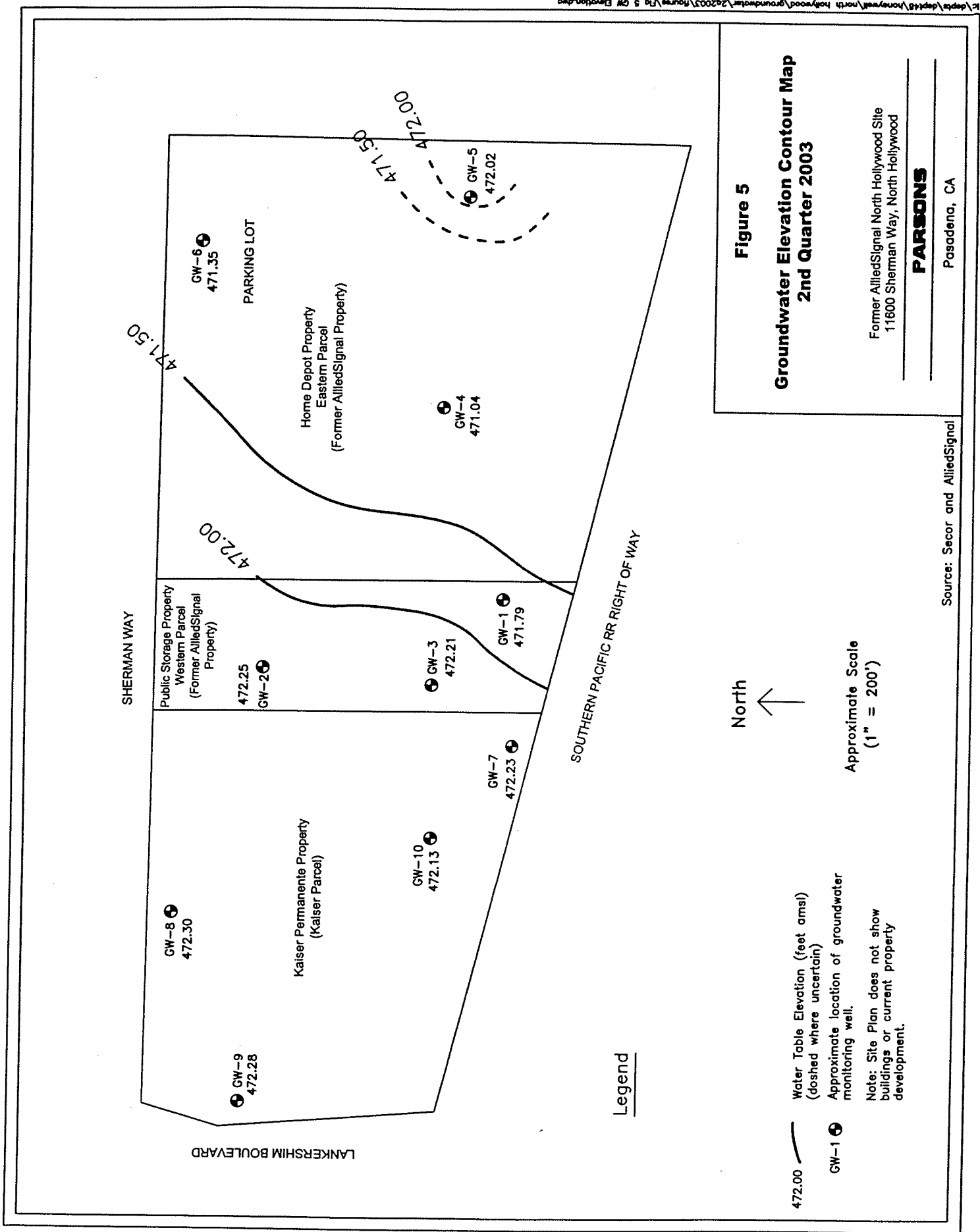
Table 4
Summary of Emerging Chemicals Analytical Data - 2nd Quarter 2003
Honeywell North Hollywood Site

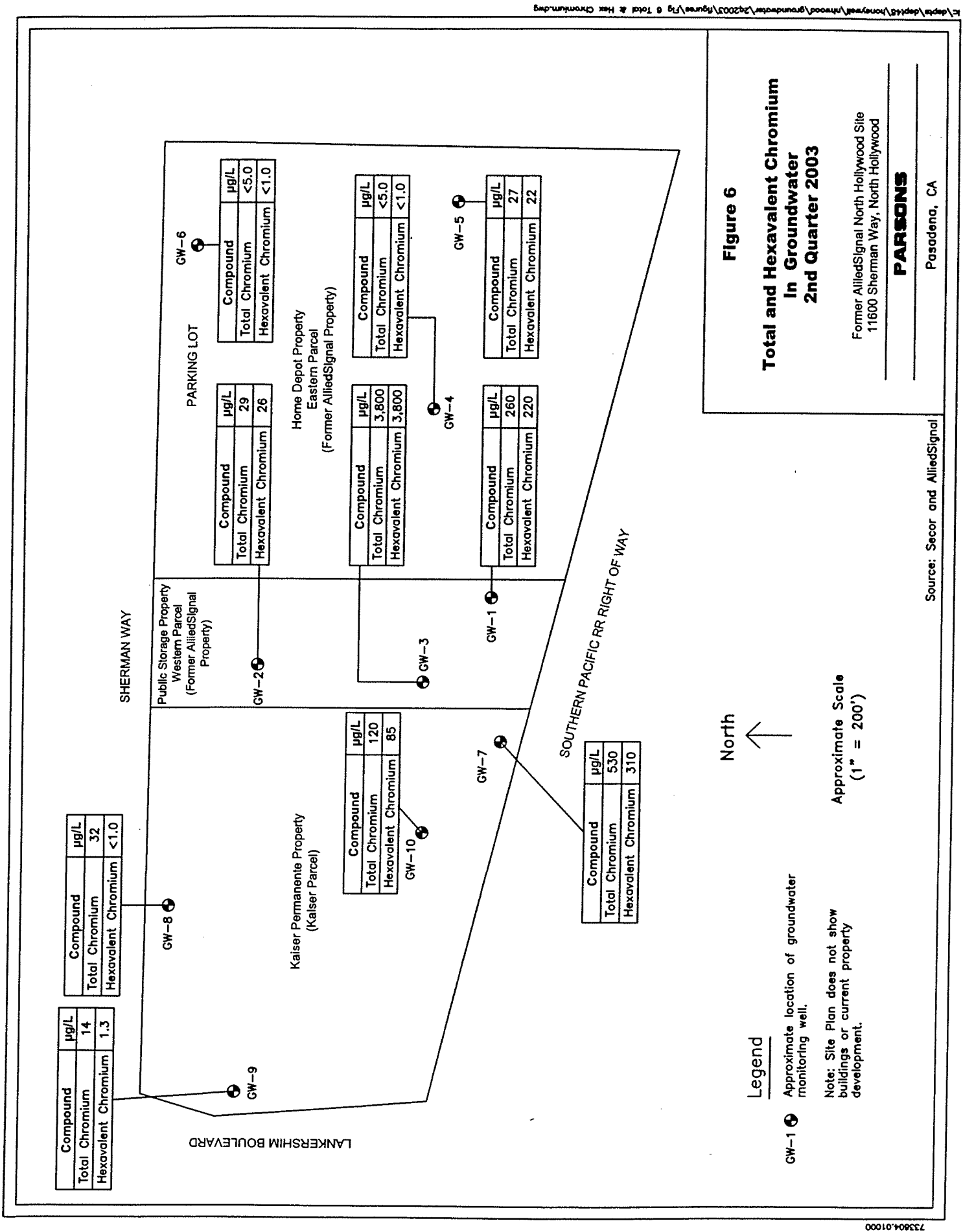
Well ID	Sample Date	ug/L			
		Perchlorate (EPA Method 314.0)	n-Nitrosodi- methylaniline (EPA Method 1625)	1,4-Dioxane (EPA Method 8270C)	1,2,3- Trichloropropane (EPA Method 8260B)
GW-1	06/16/03	<2.0	0.0022	4.6	0.007
GW-2	06/10/03	<2.0	0.025	4.0	0.011
GW-3	06/11/03	4.4	<0.002	20	0.0084
GW-4	06/13/03	<2.0	0.018	4.7	0.0069
GW-5	06/13/03	<2.0	0.025	6.4	0.013
GW-6	06/10/03	<2.0	0.0032	5.2	0.0054
GW-7	06/11/03	<2.0	<0.002	6.5	0.0097
GW-8	06/10/03	<2.0	<0.002	5.3	<0.005
GW-9	06/16/03	2.3	0.0096	1.2	<0.005
GW-10	06/11/03	<2.0	<0.002	6.5	<0.005

Figures

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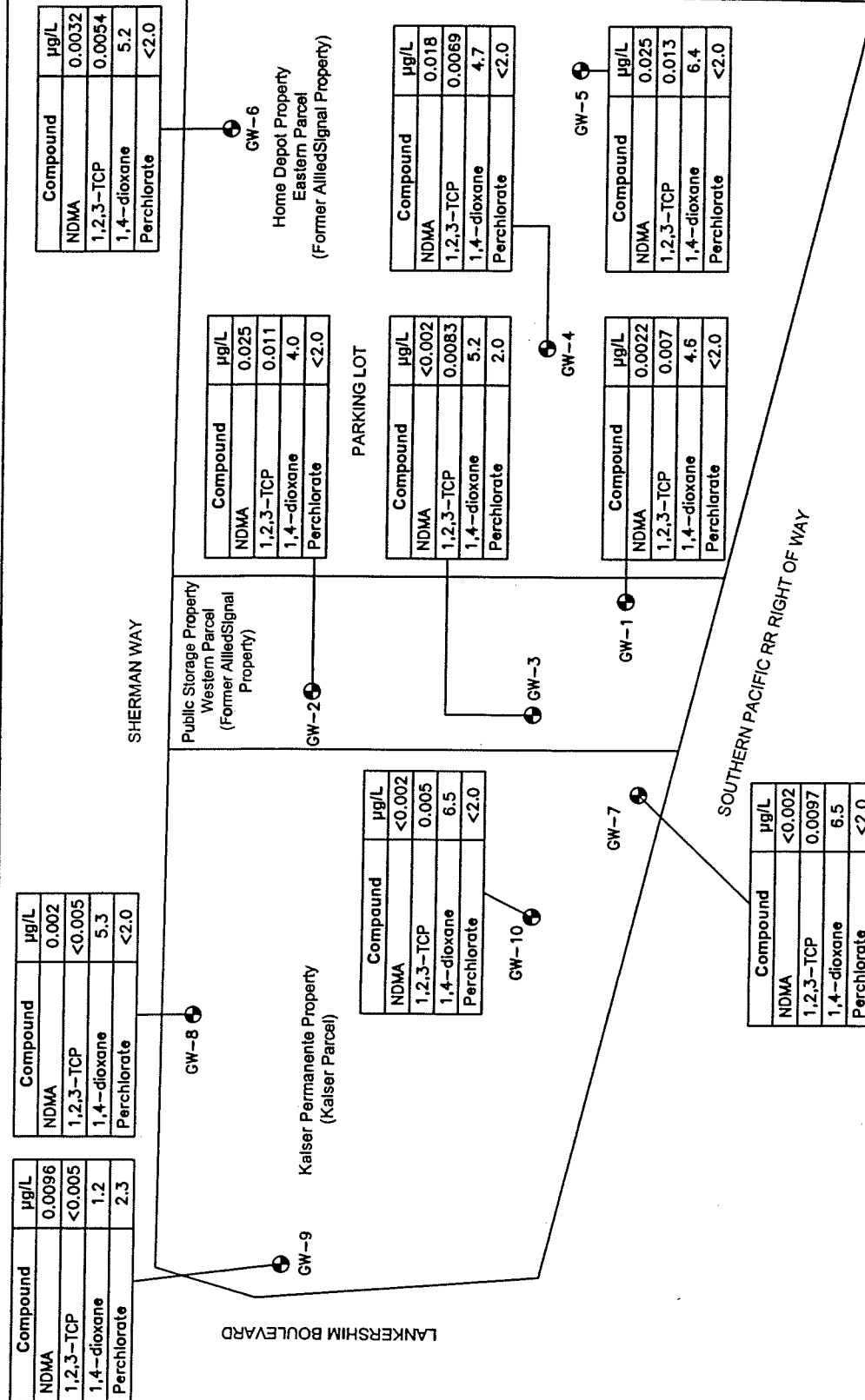


Figure 7
Emerging Chemicals
in Groundwater
2nd Quarter 2003

Former AlliedSignal North Hollywood Site
 11600 Sherman Way, North Hollywood

PARSONS

Pasadena, CA

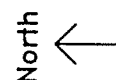
Source: Secor and AlliedSignal

Legend

GW-1 ● Approximate location of groundwater monitoring well.

Note: Site Plan does not show buildings or current property development.

Approximate Scale
 (1" = 200')



Appendix A

Groundwater Monitoring Field Forms

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW

Monitoring Well: GW-1

Project Number: 741531.02300

Equipment: 2nd Grounds

Date: 6/14/03

Personnel: M. Ward / Quentin + Morgan of Blaine

Weather: Sunny

Prior to Purge

Depth to Water (ft bTOC): 270.08

After Purge

Depth to Bottom (ft bTOC): 297.55

Diameter of Casing (in): 4"

Water Column (ft): 27.47

27.47 ft water column x 0.66

$$1CV = 18,15 \quad 3CV = 54,45$$

PID Reading Downhole: 0.0

PID Reading Breathing Zone: 0.0

Began Purging At: 10:42

Stop Purging / Purged Dry At: 11:40

Total Volume Purged (gals): 58

Well Volume

Casing	gal./linear ft.
2"	0.17
4"	0.66

[illegible][illegible]

Notes:

Pump set @ 274' bgs
pump raised to 273' @ 11:20

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW

Monitoring Well: GW-2

Project Number: 741531.02300

Equipment: 2" Grundfos

Date: 6/10/03

Personnel: M. Ward / Dave + Justin - Blaine

Weather: Overcast / Drizzling

Prior to Purge

Depth to Water (ft bTOC): 268, 86

After Purge

268.90

Depth to Bottom (ft bTOC): 298.57

Diameter of Casing (in): 4"

Water Column (ft): 29.71

29.71 ft water column x 0.66

$$1CV = 19.6 \quad 3CV = 58.83$$

PID Reading Downhole:

PID Reading Breathing Zone: 0, 0

Began Purging At: 10:47

Stop Purging / Purged Dry At: 11:54

Total Volume Purged (gals): 70

Well Volume

Casing	gal./linear ft.
2"	0.17
4"	0.66

[illegible][illegible]

Notes:

Pump initially set @ 273' BGS
raised pump to 270' BGS pump stopped had to remove it to get it restarted
reset pump @ 272.5 @ 11:46 @ 11:33

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW
Project Number: 741531.02300
Date: 6/11/03
Personnel: M. Ward / Justin + Dave

Monitoring Well: GW-3
Equipment: 2" Grundfos
Weather: Sunny

	Prior to Purge
Depth to Water (ft bTOC):	<u>266.80</u>
Depth to Bottom (ft bTOC):	<u>301.19</u>
Diameter of Casing (in):	<u>4'</u>
Water Column (ft):	<u>34.39</u>
<u>34.39</u> ft water column x <u>0.66</u>	

After Purge

PID Reading Downhole: 0.0
PID Reading Breathing Zone: 0.0

Began Purging At: 13:45
Stop Purging / Purged Dry At: 14:44
Total Volume Purged (gals): 73

$$1CV = 22.7 \quad 3CV = 68.1$$

Well Volume	
Casing	gal./linear ft.
2"	0.17
4"	0.66

[illegible][illegible]

Notes: Pump set @ 270' BGS
raised pump to 268.75' BGS @ 14:23

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW

Monitoring Well: GW-3 (deep)

Project Number: 741531.02300

Equipment: 2" ~~2~~ Ground

Date: 6/11/03

Personnel: M. Ward / Dave + Justin of Blaine Weather: partly cloudy

Weather: Partly cloudy

Prior to Purge

After Purge

Depth to Water (ft bTOC): 266.81

Depth to Bottom (ft bTOC): 301.19

Diameter of Casing (in): 4"

Water Column (ft): _____

_____ ft water column x 0.66

PID Reading Downhole: 0.0

PID Reading Breathing Zone: 0.0

Began Purging At: 15:16

Stop Purging / Purged Dry At: _____

Total Volume Purged (gals):

Well Volume	
Casing	gal./linear ft.
2"	0.17
4"	0.66

[illegible]

Time	Analyses							Sample Number
15:55								GW-3-D

Notes: Pump set @ 295' bgs for microsurge.
24 minutes to remove 3 gallons in the line

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW

Monitoring Well: GW-4

Project Number: / 741531.02300

Equipment: 2" Ground Rod

Date: 6/13/04

Personnel: M. Ward / Dave + Ruston of Blaine Weather: _____

Prior to Purge

After Purge

Depth to Water (ft bTOC): 271.86

Depth to Bottom (ft bTOC): 296.14

Diameter of Casing (in): 4"

Water Column (ft): 24.28

24.28 ft water column x 0.66

$$1CV=16 \quad 3CV=48$$

PID Reading Downhole:

PID Reading Breathing Zone: 0.0

Began Purging At: 0246

Stop Purging / Purged Dry At: 0.327

Total Volume Purged (gals):

Well Volume	
Casing	gal./linear ft.
2"	0.17
4"	0.66

[illegible][illegible]

Notes:

Pumps set @ 2.76

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW

Monitoring Well: GW-5

Project Number: , 741531.02300

Equipment: 2" Grundfos

Date: 6/12/03

Personnel: Mr. Ward / Justin + Dave of Blawie

Weather:

Prior to Purge

After Purge

Depth to Water (ft bTOC): 270.24

Depth to Bottom (ft bTOC): 300.75 ~~assumed based on 1/4" construction obstruction~~

Diameter of Casing (in): 4"

Water Column (ft): 40.51

ft water column x 0.66

PID Reading Downhole: 0.3

PID Reading Breathing Zone: 0.0

Began Purging At: 11:05

Stop Purging / Purged Dry At: 00:46

Total Volume Purged (gals): 82 gal

Well Volume

Casing	gal./linear ft.
2"	0.17
4"	0.66

[illegible][illegible]

Notes:

Pumps set @ 274' BGS
Pump stopped @ 23:43 restarted 00:24
Pumps set @ 276' BGS

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW

Monitoring Well: GW-6

Project Number: 741531.02300

Equipment: 2" Grounds

Date: 6/10/03

Personnel: M. Ward / Justin + Dave of Blainetech

Weather: Overcast / Cool / slight drizzle

Prior to Purge

Depth to Water (ft bTOC): 273.71

Depth to Bottom (ft bTOC): 290.04

Diameter of Casing (in): 4"

Water Column (ft): 16.33

16.33 ft water column x 0.66

PID Reading Downhole: 0.0

PID Reading Breathing Zone: 0.0

After Purge

$$1CV = 10.8 \quad 3CV = 32.4$$

Well Volume	
Casing	gal./linear ft.
2"	0.17
4"	0.66

Began Purging At: 13:16

Stop Purging / Purged Dry At: 13:50

Total Volume Purged (gals): 34

[illegible]

Time	Analyses						Sample Number
	Title 22 Metals	Cr VI	NDMA	1,3,2-TCF	1,4-dioxane	perchlorate	
14:10							GW-6

Notes: *Pump @ 277' BGS*

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW
 Project Number: 741531.02300
 Date: 6/11/03
 Personnel: M. Ward / Dave + Justin of Blaine

Monitoring Well: GW-7
 Equipment: 2" Grundfos
 Weather: overcast / cool

Prior to Purge After Purge

Depth to Water (ft bTOC): 264.77

Depth to Bottom (ft bTOC): 264.72 ^{ft} 301.50

Diameter of Casing (in): 4"

Water Column (ft): 36.78

36.78 ft water column x 0.66 1CV=24.3 3CV=73

PID Reading Downhole: _____

PID Reading Breathing Zone: 0.9

Began Purging At: 7:49

Stop Purging / Purged Dry At: 8:40

Total Volume Purged (gals): 75 gallons

Well Volume	
Casing	gal./linear ft.
2"	0.17
4"	0.66

Time	pH	Conductivity (mS/cm)	Temp (°C)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Volume (gals)	Flow Rate (gpm)	Comments
7:48									
7:49	<u>7.19</u>	<u>836.7</u>	<u>19.2</u>	<u>3</u>		<u>102</u>	<u>0.50</u>	<u>1.5</u>	
7:57	<u>7.19</u>	<u>907.7</u>	<u>19.0</u>	<u>6</u>	<u>3.21</u>	<u>74</u>	<u>12</u>	<u>1.5</u>	
8:05	<u>7.25</u>	<u>907.7</u>	<u>18.9</u>	<u>7</u>	<u>3.31</u>	<u>76</u>	<u>24</u>	<u>1.5</u>	<u>264.85</u>
8:13	<u>7.21</u>	<u>906.0</u>	<u>19.0</u>	<u>7</u>	<u>3.32</u>	<u>76</u>	<u>36</u>	<u>1.5</u>	
8:21	<u>7.29</u>	<u>904.7</u>	<u>18.9</u>	<u>8</u>	<u>3.32</u>	<u>79</u>	<u>48</u>	<u>1.5</u>	<u>264.85</u>
8:30	<u>7.21</u>	<u>904.1</u>	<u>18.8</u>	<u>5</u>	<u>3.32</u>	<u>72</u>	<u>60</u>	<u>1.5</u>	<u>264.86</u>
8:40	<u>7.25</u>	<u>902.4</u>	<u>18.7</u>	<u>7</u>	<u>3.32</u>	<u>7582</u>	<u>75</u>	<u>1.5</u>	<u>264.86</u>

Time	Analyses								Sample Number
9:10									<u>GW-7</u>

Notes: Pump set @ 2.68
pump raised to 266.75 @ 8:31

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW
Project Number: 741531.02300
Date: 6/11/93
Personnel: M. [Signature]

Monitoring Well: GW-7 (Deep)
Equipment: 2" Grundfos
Weather: partly cloudy

Prior to Purge

Depth to Water (ft bTOC): 264.78

Depth to Bottom (ft bTOC): 301.50

Diameter of Casing (in): 4"

Water Column (ft): _____

ft water column x _____ 0.66

After Purge

PID Reading Downhole: _____
PID Reading Breathing Zone: 0.0

Began Purging At: 9:20
Stop Purging / Purged Dry At: 10:05
Total Volume Purged (gals): 5.6

Well Volume	
Casing	gal./linear ft.
2"	0.17
4"	0.66

[illegible][illegible]

Notes: Pump @ 294' 24 minutes to clear 3 gallons in sample line

Monitoring Well: GW-8
Equipment: 2" Grundfos

Date: 6/10/03
Personnel: M. Ward / Justin + Dave of Bkine

Weather: overcast / cool

Prior to Purge

Depth to Water (ft bTOC): 271.98

Depth to Bottom (ft bTOC): 297.61

Diameter of Casing (in): 4"

Water Column (ft): 25.63

25.63 ft water column x 0.66

PID Reading Downhole:

PID Reading Breathing Zone: 0,0

Began Purging At: 16:40

Stop Purging / Purged Dry At: 18:09

Total Volume Purged (gals): 53

After Purge

Well Volume	
Casing	gal./linear ft.
2"	0.17
4"	0.66

[illegible][illegible]

Notes: Pump set @ 276' BGS
pump stopped @ 17:54
restarted @ 17:30

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW
 Project Number: 741531.02300
 Date: 6/16/03
 Personnel: M. Ward / Morgan + Quentin of Blawie

Monitoring Well: GW-9
 Equipment: 2" Grundfos
 Weather: sunny

Prior to Purge
 Depth to Water (ft bTOC): 270.90
 Depth to Bottom (ft bTOC): 291.82
 Diameter of Casing (in): 4"
 Water Column (ft): 20.92

After Purge

20.92 ft water column x 0.66

1 CV = 13.8 3 CV = 41.4

PID Reading Downhole: 0.3
 PID Reading Breathing Zone: 0.0

Began Purging At: 8:27
 Stop Purging / Purged Dry At: 9:13

Total Volume Purged (gals): _____

Well Volume	
Casing	gal./linear ft.
2"	0.17
4"	0.66

Time	pH	Conductivity (mS/cm)	Temp (°C)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Volume (gals)	Flow Rate (gpm)	Comments
8:25		<u>Pump</u>	<u>barrel on</u>						
8:28	6.85	776.6	19.9	3	9.08	90	0	1.0	270.90
8:35	7.12	784.1	20.2	6	8.0	68	7	1.0	270.97
8:42	7.12	821.0	20.1	10	8.50	61	14	1.0	270.99
8:49	7.23	833.0	20.2	7	8.48	71	21	1.0	270.99
8:56	7.19	839.1	19.9	12	8.35	58	28	1.0	270.98
9:05	7.22	852.0	22.1	9	8.36	75	35	1.0	270.99
9:12	7.27	842.8	20.6	9	8.37	69	42	1.0	270.99

Time	Analyses							Sample Number
	Title 12 Metals	CrVI	1,4-dioxane	NOMA	1,2,3-TP	perchlorate		
9:55								GW-9

Notes: Pump set @ 274' bgs
pump raised to 273' bgs @ 8:58 flow rate dropped and pump started to overheat. Lowered pump back to 274"
9.00

WELL SAMPLING LOG

Project Name: Honeywell North Hollywood - GW

Monitoring Well: GW-10 (deep)

Project Number: 741531.02300

Equipment: 2" Grundfos

Date: 6/11/03

Personnel: M. Ward / Dave + Justin of Blaine

Weather: Partly cloudy

Prior to Purge

Depth to Water (ft bTOC): 267.71

After Purge

Depth to Bottom (ft bTOC): 302.67

Diameter of Casing (in): 4"

Water Column (ft): _____

ft water column x 0.66

PID Reading Downhole:

PID Reading Breathing Zone: 0.0

Began Purging At: 12:14

Stop Purging / Purged Dry At: 12:55

Total Volume Purged (gals): 10.25

Well Volume	
Casing	gal./linear ft.
2"	0.17
4"	0.66

[illegible][illegible]

Notes: Pump set @ 294' BGS for micro-purge sampling
12 ga minutes to remove 3 gallons in line

Appendix B
Laboratory Reports and
Chain-of-Custody Forms



Del Mar Analytical

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LABORATORY REPORT

Prepared For: Parsons, Pasadena
100 W. Walnut
Pasadena, CA 91124
Attention: Stuart Michener

Project: Honeywell, North Hollywood

Sampled: 06/10/03

Received: 06/10/03

Issued: 06/20/03

NELAP #01108CA CA ELAP #1197

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LABORATORY REPORT

Prepared For: Parsons, Pasadena
100 W. Walnut
Pasadena, CA 91124
Attention: Stuart Michener

Project: Honeywell, North Hollywood

Sampled: 06/10/03-06/11/03

Received: 06/11/03

Issued: 06/26/03

NELAP #01108CA CA ELAP #1197

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LABORATORY REPORT

Prepared For: Parsons, Pasadena
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Pasadena, CA 91124
Attention: Stuart Michener

Project: Honeywell, North Hollywood

Sampled: 06/11/03
Received: 06/11/03
Issued: 06/26/03

NELAP #01108CA CA ELAP #1197

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LABORATORY REPORT

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100 W. Walnut
Pasadena, CA 91124
Attention: Stuart Michener

Project: Honeywell, North Hollywood

Sampled: 06/11/03
Received: 06/11/03
Issued: 06/25/03

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LABORATORY REPORT

Prepared For: Parsons, Pasadena
100 W. Walnut
Pasadena, CA 91124
Attention: Stuart Michener

Project: Honeywell, North Hollywood

Sampled: 06/11/03
Received: 06/11/03
Issued: 06/20/03

NELAP #01108CA CA ELAP #1197

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LABORATORY REPORT

Prepared For: Parsons, Pasadena
100 W. Walnut
Pasadena, CA 91124
Attention: Stuart Michener

Project: Honeywell, North Hollywood

Sampled: 06/11/03
Received: 06/11/03
Issued: 06/16/03

NELAP #01108CA CA ELAP #1197

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LABORATORY REPORT

Prepared For: Parsons, Pasadena
100 W. Walnut
Pasadena, CA 91124
Attention: Stuart Michener

Project: Honeywell, North Hollywood

Sampled: 06/13/03
Received: 06/13/03
Issued: 06/26/03

NELAP #01108CA CA ELAP #1197

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LABORATORY REPORT

Prepared For: Parsons, Pasadena
100 W. Walnut
Pasadena, CA 91124
Attention: Stuart Michener

Project: Honeywell, North Hollywood

Sampled: 06/16/03
Received: 06/16/03
Issued: 06/26/03

NELAP #01108CA CA ELAP #1197

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Appendix C

Data Quality

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APPENDIX C

DATA QUALITY

C.1 Quality Assurance/Quality Control (QA/QC)

C.1.1 Procedure

The overall QA/QC objective for field activities and laboratory analyses was to produce data of sufficient quality to support an evaluation of the environmental conditions. Standard procedures were conducted so that known and sufficiently acceptable levels of accuracy, precision, completeness, representativeness, and comparability were achieved. The QA/QC procedures are summarized in the following subsections.

C.1.2 Documentation

At a minimum, the following field information was recorded in ink in a bound logbook:

- (1) Date and time of entries
- (2) Personnel onsite (including subcontractors)
- (3) Activity and location
- (4) Field observations (i.e., soil descriptions, direct instrument readings, weather, unusual occurrences, water levels, volume, and types of materials used)
- (5) Sample information (time, depth, location, type of sample, container preservation, and analyses)
- (6) Equipment calibration records

C.2 DATA QUALITY METHOD

The QA/QC program for the groundwater sampling and analysis for the Second Quarter 2003 included the collection of thirteen groundwater samples with three trip blanks and one field duplicate on June 10 through 16, 2003. The groundwater samples were submitted to Del Mar Analytical in Irvine, California for analysis by one or more of the following methods: 1,2,3-Trichloropropane (EPA Method 8260SIM); 1,4-Dioxane (EPA Method 8270SIM); Metals (EPA Methods 6010B and 7144), Hexavalent Chromium (EPA Method 7199); n-Nitrosodimethylamine (EPA modified Method 1625C), and Perchlorate (EPA Method 314.0). The results are reported in Del Mar's log number as IMF0530, IMF0565, IMF0597, IMF0602, IMF0713 and IMF0831. The following summary provides a discussion of the analytical results

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associated with the designated samples, the integrity of their QA/QC analysis, and details of the data verification.

C.2.1 Blanks

Trip Blanks are used to evaluate potential environmental contamination during sample collection and transport to the laboratory. Trip blanks accompanied shipments of project samples to the laboratory on June 10, 11 and 13, 2003. Target compounds were not detected in any trip blanks.

Laboratory Daily Method Blanks are used to evaluate contamination introduced by the laboratory via chemical reagents, glassware, or sample storage. Method blanks were analyzed with each analytical batch. Target compounds were not detected in any associated method blanks.

C.2.2 Matrix Spike/Matrix Spike Duplicates

Matrix Spike/Matrix Spike Duplicates (MS/MSDs) are analyzed with original samples to ensure precision and accuracy of the analytical method and equipment. They also serve to monitor the analytical results for sample matrix effects. Insufficient sample volume was available for MS/MSD analysis of NDMA batches 3F20074 and 3F13053; 1,4-dioxane in batches 3F11061, 3F12081 and 3F16054; hence, LCS/LCSD pairs were analyzed to assess method precision and accuracy. All MS/MSD recoveries and relative percent differences (RPDs) met acceptance criteria.

C.2.3 Laboratory Control Samples

The Laboratory Control Sample (LCS) is a measure of laboratory accuracy for a pristine matrix. All LCS recoveries demonstrate acceptable method accuracy.

Analytical accuracy and precision could also be determined from LCS/LCSD analysis when either the matrix recovery was outside the QC limit due to matrix effects or when insufficient sample prevented the analysis of matrix spike run. All LCS and LCSD results demonstrated acceptable accuracy and precision (LCS/LCSD pairs only).

C.2.4 Surrogate

Surrogates are non-naturally occurring organic compounds similar in chemical composition and properties to the target compounds. Surrogates are spiked into each sample prior to sample preparation and analysis to determine the overall laboratory performance (by the technician/analyst and applied instruments and equipment). All surrogate recoveries were within the QC limits.

C.2.5 Holding Time And Sample Preservation

All samples were extracted and analyzed within the required holding time for the designated tests. The cooler temperature of samples received by the laboratory on June 11, 2003 (report # IMP0565) was measured at 12°C, although the samples were stored in a cooler with ample conventional (i.e., cubed) ice from the time of collection through sample shipment to the

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laboratory. The laboratory also noted on the chain-of-custody that ice was present in the cooler upon receipt. Remaining shipments of samples were measured at temperatures within the $4 \pm 2^{\circ}\text{C}$ range. Volatile organic (VOC; 1,4-dioxane, NDMA and 1,2,3-TCP) results for samples reported in IMF0565 will be qualified as estimated values ("J" if detected, "UJ" if not detected).

C.2.6 Field Duplicates

Field duplicates are collected to ascertain field sampling procedure precision and sent "blind" to the laboratory for analysis. One field duplicate was collected during this monitoring event GW-11 (duplicate of GW-1). The RPD between primary and field duplicate sample results was acceptable for all detected compounds with the exception of NDMA and zinc. NDMA and zinc concentrations reported for these samples will be used as estimated values ("J" flag) for project purposes.

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Appendix D
Summary of Historical Analytical Data

Table D.1
Summary of Historical Chromium Groundwater Data
Honeywell North Hollywood Site

Well ID	Date	Sample type		Analytical Result	
				Total Chromium	Hexavalent Chromium
		Filtration	Collection	(mg/L)	(mg/L)
GW-1	02/08/01	NF	Pump	0.174	0.151
	03/25/03	NF	Bailer	0.085	0.081
	06/16/03	NF	Bailer	0.26	0.22
GW-2	Aug-93	NF	NS	<0.010	NA
	02/08/01	NF	Pump	0.0129	<0.001
	03/25/03	NF	Bailer	0.0063	<0.001
	06/10/03	NF	Bailer	0.029	0.026
GW-3	Aug-93	NF	NS	0.012	NA
	07/30/97	NF	Bailer	1.4	<2.0
	07/30/97	NF	Bailer (Dup)	0.93	1.4
	07/28/98	FF	Bailer	1.1	1.4
	07/28/98	FF	Bailer (Dup)	1.7	1.7
	07/28/98	NF	Bailer	0.98	0.99
	07/28/98	NF	Bailer (Dup)	0.88	0.57
	07/28/98	LF	Pump	0.17	0.17
	07/28/98	NF	Pump	0.17	0.18
	07/23/99	FF	Bailer	1.9	1.8
	07/23/99	FF	Bailer (Dup)	2.0	2.0
	02/08/01	NF	Pump	5.81	4.61
	03/26/03	NF	Bailer	0.85	0.83
	06/11/03	NF	Bailer	3.8	3.8
GW-3-D*	06/11/03	NF	Pump	2.7	2.7
GW-4	02/27/98	NF	Bailer	0.043	0.048
	02/27/98	FF	Bailer	0.021	0.019
	03/27/03	NF	Bailer	0.008	0.0011
	06/13/03	NF	Bailer	<0.005	<0.001
GW-5	03/24/03	NF	Bailer	0.009	<0.001
	06/13/03	NF	Bailer	0.027	0.022
GW-6	Aug-93	NF	NS	<0.010	NA
	02/09/01	NF	Pump	0.0157	0.001
	03/25/03	NF	Bailer	0.013	0.0012
	06/10/03	NF	Bailer	<0.005	<0.001

Table D.1
Summary of Historical Chromium Groundwater Data
Honeywell North Hollywood Site

Well ID	Date	Sample type		Analytical Result	
		Filtration	Collection	Total Chromium (mg/L)	Hexavalent Chromium (mg/L)
GW-7	02/09/01	NF	Pump	0.36	0.311
	03/26/03	NF	Bailer	0.44	0.17
	06/11/03	NF	Bailer	0.53	0.31
GW-7-D*	06/11/03	NF	Pump	0.34	0.28
GW-8	02/09/01	NF	Pump	0.00614	0.001
	03/24/03	NF	Bailer	0.029	<0.001
	06/10/03	NF	Bailer	0.032	<0.001
GW-9	02/09/01	NF	Pump	<0.005	0.001
	03/24/03	NF	Bailer	0.077	<0.001
	06/16/03	NF	Bailer	0.014	0.0013
GW-10	02/09/01	NF	Pump	0.617	0.691
	03/26/03	NF	Bailer	0.17	0.041
	06/11/03	NF	Bailer	0.12	0.085
GW-10-D*	06/11/03	NF	Pump	0.45	0.084

(Dup) - Duplicate sample collected

NF - Not Filtered; FF - Field-Filtered; LF - Laboratory-Filtered

NS - Not specified; NA - Not analyzed

*Sample from lower part of screen interval

Table D.2
Summary of Historical Emerging Chemical Groundwater Data
Honeywell North Hollywood Site

Well ID	Sample Date	ug/L			
		Perchlorate (EPA Method 314.0)	n-Nitrosodi- methylamine (EPA Method 1625)	1,4-Dioxane (EPA Method 8270C)	1,2,3- Trichloropropane (EPA Method 8260B)
GW-1	03/25/03	<2.0	<0.002	4.4	<0.005
	06/16/03	<2.0	0.0022	4.6	0.007
GW-2	03/25/03	<2.0	<0.002	3.6	0.016
	06/10/03	<2.0	0.025	4.0	0.011
GW-3	03/26/03	2.0	<0.002	5.2	0.0083
	06/11/03	4.4	<0.002	20	0.0084
GW-4	03/27/03	<2.0	<0.002	4.0	0.007
	06/13/03	<2.0	0.018	4.7	0.0069
GW-5	03/24/03	<2.0	<0.002	5.5	0.013
	06/13/03	<2.0	0.025	6.4	0.013
GW-6	03/25/03	<2.0	0.003	3.5	<0.005
	06/10/03	<2.0	0.0032	5.2	0.0054
GW-7	03/26/03	<2.0	<0.002	4.9	0.010
	06/11/03	<2.0	<0.002	6.5	0.0097
GW-8	03/24/03	<2.0	0.0037	7.3	<0.005
	06/10/03	<2.0	<0.002	5.3	<0.005
GW-9	03/24/03	<2.0	0.012	2.6	<0.005
	06/16/03	2.3	0.0096	1.2	<0.005
GW-10	03/26/03	<2.0	<0.002	5.2	0.0063
	06/11/03	<2.0	<0.002	6.5	<0.005

Honeywell
2525 West 190th Street
Torrance, CA 90505

June 30, 2003

Mr. Dennis Dickerson
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013

Re: Transmittal of Revised Remedial Investigation Workplan and Interim Groundwater Remedial Action Plan, Former Honeywell International, Inc. Facility, 11600 Sherman Way, North Hollywood, California. Cleanup and Abatement Order No. R4-2003-0037. RWQCB File No. 111.0180.

Dear Mr. Dickerson:

Honeywell International, Inc. is responding to the Regional Water Quality Control Board - Los Angeles Region's (RWQCB's) letter dated May 27, 2003, which requires the preparation and submittal of a revised Remedial Investigation (RI) Workplan and an Interim Groundwater Remedial Action Plan (IGWRAP) for the above-referenced site. Enclosed please find one original and two copies of each of these documents. The RI Workplan, which was originally submitted to the Regional Board on December 7, 2001 and modified by addendum on March 31, 2003, was revised to address the requirements for expanded assessment as discussed in the Board's May 27th letter. [Note: The investigative modifications in the previously submitted March 31st workplan addendum have also been incorporated in this document.]

The IGWRAP evaluates, screens, and recommends a proposed interim action for groundwater and related pilot testing. The data collected during operation of the interim remedy, together with additional data generated during the RI, will be used to re-evaluate and possibly modify the nature and scope of the proposed interim response and develop an appropriate remedy for the groundwater chromium cleanup project. As you are aware, treatability studies and pilot tests have yet to be performed; the interim nature of the proposed actions should be kept in mind as the document is reviewed.

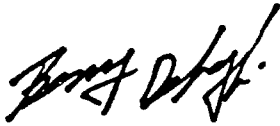
We recently received and reviewed a copy of the March 21, 2003 letter from the City of Los Angeles Department of Water and Power (LADWP) to the RWQCB, and were concerned to read the LADWP allegation that the former Honeywell facility is "the source site of chromium" that was detected in North Hollywood OU Well No. 2. Such a claim strikes us as premature, given the ongoing nature of the site characterization under the oversight of the RWQCB, the as-yet unproven relationship between shallow chromium contamination at the site and the underlying groundwater conditions, the complex and highly variable pattern of present-day and historical groundwater flow in the site vicinity, the many and varied industrial operations in site vicinity

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and the potential for different and unrelated sources for the chromium groundwater contamination. While we categorically disagree with LADWP interpretation, the data arising from the proposed RI and interim measures will help provide a clearer understanding of the nature and extent of contamination at the site and in the site vicinity.

Thank you for your attention to this matter; we trust the enclosed submittals are responsive to the RWQCB's requirements. If you have any questions, please contact the undersigned at (310) 512-2296.

Sincerely,



Benny DeHghi
Honeywell International, Inc.
Remediation & Evaluation Services Manager
Health, Safety, Environmental & Remediation

Enclosures

cc: Dixon Oriola - RWQCB (copy enclosed)
Mohammad Zaidi, R.G. - RWQCB (copy enclosed)
Carl Meier, Esq., Honeywell
A.J. Blanco, Assistant Manager, Home Depot
Barry Dunzer, Project Manager, Public Storage, Inc.
Ron Newquist, Chief Engineer, Kaiser Permanente
Melvin Blevins - ULARA Watermaster

REVISED REMEDIAL INVESTIGATION WORKPLAN FOR CHROMIUM AND EMERGING CHEMICALS

Honeywell International, Inc.
11600 Sherman Way
North Hollywood, California

PREPARED FOR:

Honeywell

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 **PARSONS**

June 30, 2003

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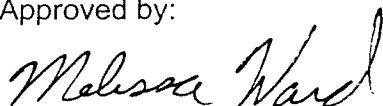
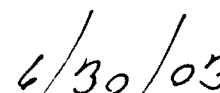
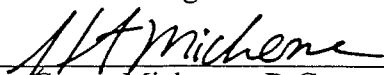
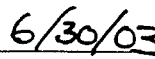
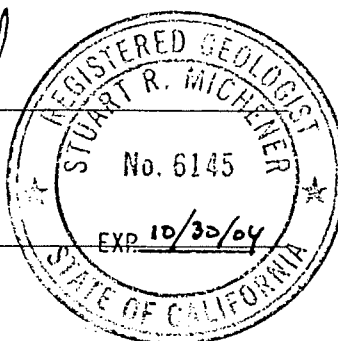
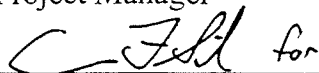
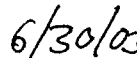
SIGNATURE PAGE

For

REVISED REMEDIAL INVESTIGATION WORKPLAN FOR
CHROMIUM AND EMERGING CHEMICALSHoneywell International, Inc.
11600 Sherman Way
North Hollywood, California

June 30, 2003

Approved by:

Melissa Ward
Task Manager
DateStuart Michener, R.G.
Project Manager
Date forTerry Feng, Ph.D., Ch.G., P.E.
Senior Technical Director
Date

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File

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SECTION 1

INTRODUCTION

The following revised workplan was prepared to address chromium and emerging chemicals in soil and groundwater at the former AlliedSignal facility located at 11600 Sherman Way in North Hollywood, California (hereinafter referred to as the "site") (Figure 1-1). This document was prepared by Parsons on behalf of Honeywell International, Inc. (Honeywell) in response to the Regional Water Quality Control Board (RWQCB) letter of May 27, 2003 (RWQCB, 2003b). It builds upon the previously submitted *Technical Report and Remedial Investigation Workplan for Chromium* dated December 7, 2001 (Parsons, 2001b) and *Assessment Workplan Addendum for Emerging Chemicals in the Unsaturated and Saturated Zones* dated March 31, 2003 (Parsons, 2003a) that were the subject of the RWQCB's May 27th review.

This report consists of five sections. Section 1 describes site history and regulatory status. Site stratigraphy, previous chromium soil investigations, and remediation activities are described in Section 2. Section 3 presents a summary of site hydrogeology and previous groundwater monitoring for chromium and emerging chemicals. Workplans for proposed soil and groundwater investigations are presented in Section 4. Section 5 lists references used.

1.1 SITE HISTORY AND DESCRIPTION

Figure 1-1 illustrates the site location and surrounding neighborhood. The Honeywell North Hollywood site is located in the east-central part of the San Fernando Valley, approximately 14 miles northwest of downtown Los Angeles, California (refer to Figure 1-1). It is bordered by Sherman Way to the north, Lankershim Boulevard to the west, various commercial/light industrial businesses to the east, and by the Southern Pacific Railroad right-of-way to the south.

The site was used by Bendix Corporation and later AlliedSignal/Bendix Electrodynamics (Bendix was purchased by AlliedSignal) for manufacturing hydraulic and pneumatic valves from 1941 to 1992. Process activities included equipment testing, painting, and plating. Prior to 1993, the Honeywell facility contained two main structures. Plant 1, constructed in 1941, was the larger building and was located on the west and central portions of the site. Plant 2, constructed in 1949, occupied the eastern portion of the site. Both plants involved chrome-plating operations. Figure 1-2 shows the approximate location and boundaries of the former chrome plating facilities at Plants 1 and 2.

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Operation at the site ceased on February 29, 1992. In 1993, the existing buildings were demolished and the site was left vacant until the Eastern Parcel was sold to Home Depot in 1995 (Figure 1-2) and was developed into an asphalt-covered parking lot and a Home Depot store. In 1999, the Western Parcel was sold to Public Storage and developed into a storage facility with asphalt-covered service roads, storage bays, and a warehouse.

1.2 REGULATORY STATUS

In close coordination with the Regional Water Quality Control Board (RWQCB), Honeywell has conducted site investigation and remedial actions to mitigate chromium-impacted soil, as described in Section 2.2. As a result of these activities, the RWQCB granted soil closure for both the Eastern and Western Parcels in August 1997 (RWQCB, 1997a and 1997b). Groundwater monitoring for chromium was conducted at the request of the RWQCB after the soil closure was approved. In March 2001, at the request of the RWQCB, information regarding previous chromium use at the site was submitted (RWQCB, 2001a). In October 2001 the RWQCB requested that a technical report be prepared and submitted by November 9, 2001 (RWQCB, 2001b) and was subsequently extended to December 9, 2001 (RWQCB, 2001c) to demonstrate that the residual chromium in the soil does not pose a threat to groundwater quality and to determine the extent of chromium in the groundwater beneath the site. On December 7, 2001, Honeywell submitted a *Technical Report and Remedial Investigation Workplan for Chromium* (Parsons, 2001b) to the RWQCB.

In late February 2003, the RWQCB issued Cleanup and Abatement Order No. R4-2003-0037 ("CAO"; RWQCB, 2003a) which, among other things, required the assessment of emerging chemicals and heavy metals (total and hexavalent chromium) in the unsaturated and saturated zones beneath the North Hollywood site. Because the RI Workplan addressed many of the assessment requirements contained in the CAO, Honeywell prepared an Assessment Workplan Addendum (Parsons, 2003a) to build on the RI Workplan and address the Board's new requirements. Quarterly monitoring, including sampling of all 10 on-site groundwater monitoring wells and testing for total and hexavalent chromium and emerging chemicals, commenced shortly after the issuance of the CAO and a monitoring report for the First Quarter 2003 was submitted on April 15, 2003 (Parsons, 2003b). Most recently, via letter dated May 27, 2003, the RWQCB (RWQCB, 2003b) transmitted comments on the December 7, 2001 Technical Report and Workplan and the March 31, 2003 Assessment Addendum Workplan. This document consolidates the changes embodied in the March 31st workplan addendum and is intended to address the RWQCB's May 27th requirement for the preparation and submittal of a revised RI workplan.

SECTION 2

CHROMIUM IN SOIL

In order to determine whether chromium in soil poses a continued threat to groundwater quality, available site stratigraphy and previous chromium investigations were evaluated. This section describes total chromium and hexavalent chromium identified in soil beneath Plant 1 and Plant 2 during previous site investigation activities and remedial actions conducted to date for chromium in the site soil. Additional data needs to address chromium in soil are also identified through this evaluation.

2.1 GEOLOGY AND SOIL

The site is located in the San Fernando Valley Basin (Basin). The Basin is bounded on the north and northwest by the Santa Susanna Mountains; on the north and northeast by the San Gabriel Mountains; on the east by the San Rafael Hills, which separates it from the San Gabriel Basin; on the south by the Santa Monica Mountains, which separates it from Los Angeles Coastal Plains; and on the west by the Simi Hills.

The Basin is comprised of a large Holocene age alluvial basin of approximately 122,800 acres. The maximum depth of alluvium is about 1000 feet and the volume of stored groundwater is about three million acre-feet. The western part of the valley alluvium consists of mainly clayey sediments derived from the surrounding hills of Tertiary sedimentary rocks. The site is located in the eastern part of the valley, where sand and gravel aquifers were deposited by large streams originating from the basement rocks of the San Gabriel Mountains (GSA, 1986).

Soil encountered during various drilling activities at the site indicates that the lithology varies rapidly throughout the site. Generally the alluvial deposits within the northern portion of the western parcel (Public Storage) consist of sand and gravelly sand to a depth of approximately 50 feet below ground surface (bgs), gravel and sandy gravel to approximately 80 feet bgs, sand and gravelly sand to approximately 140 feet bgs, gravel to approximately 150 feet bgs, sand and gravelly sand to approximately 275 feet bgs (with a 10-foot gravel layer from 135 to 145 feet bgs), and gravel and sandy gravel to approximately 305 feet bgs. Within the southern portion of the western parcel (Public Storage), the alluvial deposits consist of sand and gravelly sand to a depth of approximately 10 feet bgs, gravel and sandy gravel to approximately 205 feet bgs, sand and gravelly sand to approximately 260 feet bgs, gravel, sand, and gravelly sand to approximately 305 feet bgs.

Generally the alluvial deposits within the northern portion of the eastern parcel (Home Depot) consist of sand and gravelly sand to a depth of approximately 65 feet bgs, gravel and sandy gravel to approximately 200 feet bgs, sand and gravelly sand to approximately 140 feet bgs, gravel to approximately 150 feet bgs (with a 5-foot gravelly sand layer from 140 to 145 feet bgs), followed by sand and gravelly sand to approximately 305 feet bgs. Within the southern portion of the eastern parcel (Home Depot), the alluvial deposits consist of sand and gravelly sand to a depth of approximately 50 feet bgs, gravel and sandy gravel to approximately 180 feet bgs (with a 5-foot gravelly sand layer from 105 to 110 feet bgs), sand and gravelly sand to approximately 240 feet bgs, gravel, gravelly sand and sand to approximately 305 feet bgs.

The alluvial deposits within the Kaiser property generally consist of sand and gravelly sand to a depth of approximately 305 feet bgs, with occasional thin layers of gravel and sandy gravel 70 and 140 feet bgs in the northern portion of the property.

Cross sections of the lithology of the site, based on boring logs from groundwater well installations, are presented in Figures 2-1 through 2-4. Boring logs from well installations and explanations of soil type symbols used in the cross-sections are included in Appendix A.

2.2 PREVIOUS INVESTIGATIONS/REMEDIAL ACTIONS

The site has been the subject of extensive subsurface investigations since the 1980s. A brief summary of investigations and remedial actions related to chromium in soil is presented below.

2.2.1 1993 GTI Soil Investigation

In July 1993, Groundwater Technology, Inc. (GTI) drilled fifty-two borings ranging in depth from 1 to 55 ft bgs, as part of a chromium investigation. Soil samples were analyzed for total chromium and selected samples were analyzed for hexavalent chromium (GTI, 1993). A table summarizing the analytical results from the GTI Investigation is presented in Appendix B. Figure 2-5 depicts the locations of the GTI borings that were analyzed for chromium. Based on the results of the investigation, GTI identified and characterized two areas as having chromium-impacted soil. Figure 2-6 shows a close-up of the Plant 1 area, located near the western edge of the site, with cross-sections. Figure 2-7 shows a close-up of the Plant 2 area, located near the eastern edge of the site, with cross-sections.

Total chromium was detected at concentrations ranging from less than 1.5 mg/kg to 1,700 mg/kg. The highest concentration was detected in SBP1-037 at 5-ft bgs, located in the Plant 1 area. Total chromium concentrations decreased with depth in the impacted area of Plant 1, and no soil samples were obtained beyond 55 feet bgs. Cross-sections within the Plant 1 area are presented in Figures 2-8 and 2-9. Cross-sections within the Plant 2 area show concentrations decreasing to below 10 mg/kg at a depth of 20-ft bgs (Figure 2-10 and 2-11).

Hexavalent chromium was detected at concentrations ranging from less than 0.2 mg/kg to 370 mg/kg. The highest concentration was detected in SBP1-073 at 20-ft bgs, located in the plating area of Plant 1. Hexavalent chromium concentrations decreased with depth in the Plant 1 area, but remained above 50 mg/kg at depths of 40 to 55 ft bgs (Figures 2-12 and 2-13). In Plant 2, the highest concentration of hexavalent chromium detected was 0.9 mg/kg at a depth of 20 ft bgs (GTI, 1993).

Based on concentrations detected in SBP2-26 and SBP2-25, located outside the chromium-impacted area of Plant 2, the background concentration of total chromium was determined to be less than 10 mg/kg, hexavalent chromium was not found above the detection limit of 0.25 mg/kg in the same area (GTI, 1993).

2.2.2 Chromium Related Remedial Activities Since 1993

Plant 1 Area

As part of soil closure, in July 1997, chromium impacted soil was removed, using a 36-inch diameter bucket auger, to a depth of 10 ft bgs at the locations of SBP1-8, SBP1-36, SBP1-37, and SBP1-73 (Figure 2-14). A total of seven borings were drilled. Drilling activities produced approximately 20 cubic yards of soil, which was transported offsite for disposal. Confirmation soil samples were collected at the bottom of each borehole (Earth Tech, 1997). The results of confirmation sampling are presented in Table 2-1.

From December 1999 through March 2000, in support of Public Storage site redevelopment related construction work, chromium-impacted soil was excavated. These efforts were conducted to an approximate depth of 15-ft bgs within the previously defined chromium-impacted area (Figure 2-15). Approximately 230 tons of soil was removed and transported to an offsite disposal facility. The highest hexavalent chromium concentration identified during composite stockpile sampling was 540 mg/kg. The highest hexavalent chromium concentration identified during confirmation sampling at the bottom of the excavation was 22 mg/kg.

Plant 2 Area

In October 1994, soil with elevated levels of total chromium near SBP2-19 and SBP2-23B was excavated to a depth of approximately 7 ft bgs for off-site disposal (Figure 2-16). Soil excavated to approximately 3 ft bgs, presumed to be clean, was stockpiled for profiling. Soil excavated between 3-ft and 7-ft bgs was stored in roll-off bins. Analytical results of two soil samples collected in the excavation area indicated total chromium was still present at concentrations exceeding 50 mg/kg total chromium (ten times the STLC of 5 mg/L). Consequently, additional soil was excavated from the excavation. Soil sampling from the bottom of the excavation indicated the presence of total chromium at concentrations less than 50 mg/kg. The highest result for total chromium was 48.8 mg/kg at approximately 10 feet bgs. Approximately 120 cubic yards of excavated soils were transported offsite for disposal (Hydrologue, 1995).

2.3 SUMMARY

In Plant 2, soil characterized as having total chromium and hexavalent chromium above the industrial PRGs, were excavated to a depth of 7 ft bgs across the excavation area and to a depth of 12 ft bgs on the northern and eastern ends of the excavation. Soil in Plant 2, left in place, contained chromium concentrations ranging from ND to 24 mg/kg for total chromium (Hydrologue, 1995). The USEPA dilution-attenuation factor 20 (DAF 20), which corresponds to concentrations for groundwater protection (38 mg/kg), is a soil screening level derived using default values in standardized equations and accounts for natural processes that reduce contaminant concentrations in the subsurface (USEPA, 2000c). Chromium concentrations left in place in Plant 2 were below 38 mg/kg, which corresponds to the DAF 20. As a result, residual chromium in soil at Plant 2 does not pose a threat to groundwater. Consequently, no further action is recommended for soil at the Plant 2 area other than proposed groundwater monitoring as discussed in Sections 3 and 4.

In Plant 1, soil characterized as having total chromium and hexavalent chromium above the industrial preliminary remediation goals (PRGs) of 450 mg/kg and 64 mg/kg, respectively, was excavated to a depth of 10 ft bgs. Confirmation sampling in Plant 1 (at or below 10 ft bgs) indicated the presence of total chromium at concentrations ranging from 16 to 2,280 mg/kg and the presence of hexavalent chromium at concentrations ranging from ND to 37.5 mg/kg (Earth Tech, 1997). Chromium may be present below 50-ft bgs in the vicinity of Plant 1. The EPA dilution-attenuation factor 20 (DAF 20), which corresponds to concentrations for groundwater protection (38 mg/kg), is a soil screening level derived using default values in standardized equations and accounts for natural processes that reduce contaminant concentrations in the subsurface (USEPA, 2000c). The values are conservative, but provide a preliminary check for potential threat to groundwater. It is likely that chromium left in soils beneath Plant 1 area may still exceed the USEPA screening levels for groundwater protection. Additional soil characterization is recommended to fill the data gaps needed to delineate and/or verify the extent of chromium and emerging chemicals and determine whether concentrations in soil beneath Plant 1 pose a threat to groundwater quality.

To the extent the existing site improvements allow, soil samples will be collected below 50 feet bgs to further characterize the vertical extent of chromium concentrations in soil beneath Plant 1. Details of the proposed soil investigation at Plant 1 area are included in Section 4.1

SECTION 3

CHROMIUM AND EMERGING CHEMICALS IN GROUNDWATER

In order to determine the potential impact of chromium at the site on beneficial uses of the groundwater, available hydrogeology and previous groundwater monitoring data were evaluated. As part of this discussion, additional groundwater data needs are also described.

3.1 HYDROGEOLOGY

The site is located in the San Fernando Groundwater Basin (SFB) of the Upper Los Angeles River Area. The City of Los Angeles has an exclusive right to extract and utilize all the native safe yield water (43,660 acre-feet per year) from this basin. The groundwater in the SFB is replenished by deep percolation from rainfall, surface runoff, and from recharge utilizing imported water to the basin. However, considerable volumes of groundwater are extracted from the SFB through dewatering and groundwater extraction projects. The dewatering projects are either due to: 1) close proximity of the groundwater table to the ground surface, which necessitates continuous dewatering to maintain subsurface structures; 2) groundwater extraction from Extraction Well Fields by the City of Los Angeles; 3) or groundwater remediation projects to clean up the volatile organic compounds, nitrate, and chromium impacted groundwater throughout the SFB. The upper portion of the Los Angeles River passes through the basin and interacts with the SFB groundwater.

The general direction of the groundwater flow in the SFB is toward east-southeast. However, the dewatering and groundwater extraction activities within the SFB have a local influence on the direction of groundwater flow.

Based on the regional groundwater contour map prepared by the Upper Los Angeles River Area (ULARA) Watermaster, the water table in the vicinity of the site was approximately 470 feet above mean sea level when measured in September 2000. The water table in the vicinity of the site was approximately 463 feet above mean sea level when measured in April 2000 showing a seasonal fluctuation of approximately 7 feet. However, the observed historical groundwater table fluctuation beneath the site is up to 60 feet. Figure 3-1 depicts hydrographs for the existing ten (10) monitoring wells GW-1 through GW-10, based on the available data from July 1991 through June 2003.

Groundwater extraction in the San Fernando Basin, either for water supply or remedial purposes, exerts a strong influence on the pattern of groundwater flow. Although changes in basinwide extraction or recharge and/or variations in seasonal precipitation can result in water table fluctuations, the single largest influence on groundwater elevations and local flow

at the site is regional pumping. Water supply wells in the site vicinity often operate on demand and their combined effect on the water table can be difficult to predict. The North Hollywood Well Field, an east-west array of water supply wells located south of the site and one of ten designated production well fields in the San Fernando Valley, consists of 29 extraction wells with a combined extraction capacity of 129 cubic feet per second (cfs) or approximately 20,000 acre-feet per year (ULARA, 2001). The North Hollywood Operable Unit (NHOU) Treatment Facility (also referred to as the North Hollywood Aeration Facility) extracts and treats groundwater from a northwest-trending network of eight aeration wells that overlap the above-referenced North Hollywood Well Field and lie approximately 0.15 to 0.85 miles south and southeast of the site. Finally, the Rinaldi-Toluca Well Field, a production well field located northwest of the site, has an extraction capacity of approximately 30,000 acre-feet per year (ULARA, 2001).

Data generated in March 2003 indicate that the average elevation of the water table is approximately 469 feet above mean sea level (approximately 267 feet bgs to 276 feet bgs). A simulated groundwater contour map for the Fall 2005, prepared by the ULARA Watermaster, predicts an approximate water elevation of 465 feet above mean sea level for the site (approximately 5 feet lower compared to Fall 2000).

The aquifer beneath the site is fairly productive. Based on aquifer pumping tests conducted by ULARA Watermaster in several extraction wells located in the immediate vicinity of the site, the transmissivity of the upper aquifer in the vicinity ranges from 4,950 to 8,560 ft²/day and the hydraulic conductivity ranges from 30 to 140 ft/day. The pumping test from the closest extraction well #3810U yielded a transmissivity of 7,220 ft²/day and hydraulic conductivity of 100 ft/day assuming an aquifer thickness of 72 ft (Montgomery, 1992).

3.2 HISTORICAL CHROMIUM GROUNDWATER SAMPLING ACTIVITIES

In 1991, six groundwater monitoring wells were installed on the Eastern and Western Parcels (GW-1, -2, and -3 on the Western Parcel and GW-4, -5, and -6 on the Eastern Parcel). In 1993, four additional wells were installed off-site on the Kaiser Permanente property (GW-7, -8, -9, and -10). Table 3-1 shows the well construction details of the monitoring wells. Groundwater monitoring for chromium was conducted in selected wells in August 1993; all samples were well below accepted action levels for chromium (Figure 3-2).

In July 1997 and February 1998, groundwater samples were collected from GW-3 and GW-4, at the RWQCB's request, for chromium at the site. The samples contained 1.4 mg/L of total chromium in GW-3 and 0.043 mg/L of total chromium in GW-4. Honeywell has collected additional samples in July 1998, July 1999, February 2001, and March 2003. The data for these samples are presented in Table 3-2.

Samples were collected during the July 1998 event using various methods to determine if variations in sampling technique affected results. No consistent difference in concentrations based on the filtration method was identified; the variation between the duplicates is in some cases greater than the different filtration techniques. Samples collected directly from a submersible pump situated near the bottom of the water column were significantly lower than

those collected with a bailer after purging with a submersible pump. This is possibly due to vertical variations in the chromium concentration, since bailer samples are likely to be collected from near the top of the water column.

In the February 2001 sampling event, samples were collected from GW-1, -2, -3, -6, -7, -8, -9, and -10. Wells GW-4 and GW-5 were not accessible during this event (Figure 3-3). In the March 2003 sampling event, samples were collected from all ten wells and analyzed for total and hexavalent chromium in compliance with the CAO (Parsons, 2003b). The Second Quarter 2003 sampling event has just been completed; the results will be reported by July 15, 2003, in accordance with the CAO.

3.3 HISTORICAL EMERGING CHEMICALS GROUNDWATER SAMPLING ACTIVITIES

In response to the CAO, four emerging chemicals (1,4-dioxane, 1,2,3-trichloropropane [1,2,3-TCP], n-nitrosodimethylamine [NDMA], and perchlorate) were analyzed during the March and June 2003 quarterly sampling events (Parsons, 2003b). The March sampling results indicated that emerging chemicals were either non-detect or present at trace levels (Table 3-3).

3.4 SUMMARY

Ten groundwater monitoring wells have been installed and several rounds of sampling have been conducted at the site. Due to the dynamic nature of the aquifer system caused by variable pumping from several regional extraction well fields, available groundwater data is not sufficient to determine the precise groundwater flow direction and the lateral and vertical extent of chromium in groundwater. The ongoing quarterly groundwater sampling events from the existing wells will be used to assess the seasonal groundwater level fluctuations and the concentration trends for chromium and emerging chemicals. In addition, one of the deep soil borings proposed in the Plant 1 source area will be drilled into the saturated zone and converted to a groundwater monitoring well. In addition, locations of previously planned three off-site wells within the Union Pacific Railroad right-of-way will be adjusted to augment the existing monitoring well network. A detailed discussion of the proposed groundwater investigation is presented in Section 4.

SECTION 4

REMEDIAL INVESTIGATION WORKPLANS

The primary objective of the planned remedial investigation is to determine if the residual chromium in soil poses a threat to groundwater quality and to better understand the groundwater conditions and fate and transport of chromium beneath the site. A secondary goal is to assess the potential presence of so-called emerging chemicals, including 1,4-dioxane, 1,2,3-TCP, NDMA, and perchlorate in the unsaturated and saturated zone. This section describes the proposed soil and groundwater investigation activities at the site.

4.1 SOIL INVESTIGATION WORKPLAN

The purpose of the soil investigation is to determine if chromium in soil poses a threat to groundwater. Physical and chemical data required to support fate and transport evaluations will also be collected. Historical data collected during previous investigations, and evaluations of the data presented in Section 2 were used to define the scope of the soil investigation. Per the RWQCB's request, soil samples will also be tested for emerging chemicals and total metals.

4.1.1 Proposed Soil Investigation

As discussed in Section 2, further soil investigation will concentrate on the Plant 1 area because chromium in soil may potentially pose a threat to groundwater. Available soil data and groundwater monitoring data from wells in the vicinity of Plant 2 (i.e., wells GW-4, -5, and -6) indicate that additional characterization is not necessary in this part of the site.

At the Plant 1 area, the vertical limit of chromium in soil is not fully characterized although previous soil sampling adequately defined its general lateral extent. In order to characterize the vertical extent of chromium in soil within the previously defined chromium soil source area, and satisfy the RWQCB's recent request for additional lateral control, 12 additional soil borings will be drilled (Figure 4-1). Two deep borings and ten shallow borings are planned. One deep boring (PBP1-01) will be drilled to a total depth of approximately 310 feet to allow for the installation of a groundwater monitoring well (GW-14) in the vicinity of soil boring SBP1-73. Paired soil and groundwater samples will be collected below the water table in addition to the soil sampling from the vadose zone. A second deep boring (PBP1-02) will be advanced to groundwater (approximately 270 feet bgs). Well installation is discussed in Section 4.2.3.

Each of the ten shallow borings (PBP1-03, -04, -05, -06, -07, -08, -09, -10, -11 and -12 as shown on Figure 4-1) will be drilled to a target depth of 100 ft bgs. The locations of the proposed shallow borings fall into two categories. Borings PBP1-03 and PBP1-04 are located within the former Plant 1 chromium source area. Borings PBP1-05 through PBP1-12 are located outside the previously defined source area at locations requested by the RWQCB. Final boring/well locations will need to be approved by Public Storage and Home Depot and access/clearance will need to be confirmed in the field. The tentative locations of these borings are as follows:

- PBP1-05 in the former Above Ground Wastewater Clarifier area approximately 12 feet southeast of boring SPB1-06
- PBP1-06 in the former Cyanide Destruction, Chromium Reduction & Associated Chemical Tanks area, 10 feet east of boring SBP1-05
- PBP1-07 in the former Oil Quench Pit area, east of boring SBP1-58 and adjacent to the sewer lines
- PBP1-08 in the Sump area, 10 feet southeast of boring SBP1-34 (final location may be modified due to access limitations inside the Public Storage building)
- PBP1-09 northeast of Vapor Degreaser No. 2, 15 feet west of boring SBP1-39B
- PBP1-10 near Clarifier No. 2, 8 feet northwest of boring SBP1-63
- PBP1-11 at the location of the former above ground tank (AGT) No. 10, 8 feet north-northeast of boring SBP1-61
- PBP1-12 in the Gold Plating Area, approximately 60 feet east-southeast of boring SBP1-02

Due to the very coarse grained lithologies that are known to be present in the unsaturated zone (i.e., sandy gravel and occasional cobbles and boulders must be penetrated), the borings will be drilled using the air-rotary casing hammer or equivalent method (Section 4.3.4). Soil samples will be collected every ten feet for Title 22 metals and hexavalent chromium analyses using EPA Methods 6010B and 7199, respectively, by a California-certified laboratory. Boring PBP1-02 will be advanced until the water table is reached. Moisture content will be requested for all analytical samples. Because emerging chemicals were non-detect or present at trace levels in the March 2003 groundwater samples, they are not expected to be present at significant levels in soil. For confirmation purposes, soil samples will be collected every 40 feet for emerging chemical analysis. Emerging chemical analyses will include 1,4-dioxane by EPA Method 8270C, 1,2,3-TCP by EPA Method 8260B, NDMA by EPA Method 1625, and perchlorate by EPA Method 314.0.

Following a preliminary review of the laboratory data, selected soil samples from the vadose zone will be submitted for soluble threshold limit concentration (STLC) analysis using the California Waste Extraction Test (WET) Method. STLC results will provide information regarding the mobility of chromium in the soil and aid in the evaluation of chromium fate and transport assessment. In addition, selected samples will be analyzed for pH, total organic

carbon (TOC), bulk density, grain size, porosity, moisture content, cation exchange capacity (CEC), and total manganese (USEPA, 2000b).

In addition to samples from the unsaturated zone, paired soil and groundwater samples will be collected from the saturated zone every 10 feet to the targeted total depth of 310 feet bgs in PBP1-01. The analysis of the paired samples will be used to determine the site-specific partitioning characteristics of chromium between soil and groundwater. The analytical program for the soil samples is summarized in Table 4-1.

4.1.2 Soil Sampling Procedures/Methodology

Standard sampling procedures will be utilized for the soil borings. Qualified personnel trained in the conduct of subsurface investigation, record documentation, and chain-of-custody (COC) procedures will perform all sampling activities. In addition, sampling personnel will thoroughly review this workplan prior to sample acquisition and will have a copy of these procedures available onsite for reference. All field work will be conducted under the supervision of a California-registered geologist.

Standard field procedures are discussed in Section 4.3. The following serves as additional protocols specific to subsurface soil sampling at the site. The boring logs prepared by the field geologist during drilling activities will record the following sampling information:

- Boring number and location;
- Sample identification numbers;
- Date and time;
- Sample depth;
- Lithologic description in accordance with the Unified Soils Classification System (USCS); and
- Description of any visible evidence of soil contamination.

For borings that encounter groundwater, the following additional information will be recorded on the boring log:

- Depth to top of groundwater; and
- Stabilized static water level data (for PBP1-01).

Subsurface soil samples will be collected using a split-spoon sampler containing brass sample liners. Once a sample has been collected, the ends of each liner will be trimmed and sealed with Teflon® sheets held in place with plastic end caps. Sample handling procedures are discussed in Section 4.3.5. Exceptions to these procedures will be noted in the field notebook or on the boring logs.

4.2 GROUNDWATER INVESTIGATION WORKPLAN

The purpose of the groundwater investigation is to understand the hydrogeological conditions of the site and determine the current vertical and horizontal extent of chromium in

groundwater. A secondary objective is the assessment of emerging chemicals in groundwater. Historical groundwater monitoring data presented in Section 3 were used to define the scope of the groundwater investigation.

Groundwater field investigations, in addition to off-site and on-site well installation, include quarterly groundwater monitoring events and water level measurement. The following sections provide more details regarding proposed field activities.

4.2.1 Proposed Chromium Groundwater Investigation

Well Installation

Four new monitoring wells are proposed in addition to the existing network of 10 on-site groundwater monitoring wells. The locations of the proposed wells are shown on Figure 4-2. One well (GW-14) is proposed in the Plant 1 source zone, to be constructed in the borehole of deep soil boring PBP1-01. This additional well will provide critical information on the groundwater conditions and chromium concentrations directly beneath the source zone. The RWQCB's letter dated May 27, 2003 discusses the potential need for an additional groundwater monitoring well in the former Plant 2 area near boring SBP2-23B. Based on the location of existing well GW-5 approximately 180 feet southeast and presently downgradient from former Plant 2, and the low level of total chromium and lack of detectable hexavalent chromium in this well during the First Quarter 2003 groundwater monitoring event (i.e., 0.009 mg/L total chromium and <0.001 mg/L hexavalent chromium), such a well does not appear to be necessary. However, the need for an additional monitoring well in this area will be re-evaluated upon completion of the RI sampling program.

Three proposed off-site wells, referred to as GW-11, GW-12, and GW-13, are proposed within the Union Pacific Railroad right-of-way that lies south of the site as shown on Figure 4-2. Details for installation of these three wells were previously presented in the RWQCB-approved workplan dated 1994 (Hydrologue, 1994a and 1994c). Any revisions to the three proposed wells (GW-11, -12, and -13) within the Southern Pacific Railroad right-of-way requires concurrence by the USEPA and State of California. Section G of Part IV of the Consent Agreement signed between Honeywell (formerly AlliedSignal, Inc.) and the USEPA/State of California identifies installation of these monitoring wells as "Additional Obligations of Alliedsignal, Inc." under the Consent Agreement, per previously approved workplan. Upon Regional Board obtaining USEPA/State of California concurrence for such deviations, Honeywell will be prepared to install these wells the same way as other wells proposed.

Due to repeated difficulty in gaining legal access, these wells have not yet been installed. Honeywell has requested RWQCB assistance in securing access from the railroad (Honeywell, 2001). Honeywell will initiate the effort to gain access from the railroad, and respectfully reiterates its request to the RWQCB for support in securing the needed access permit from the railroad in order to complete the well installation.

As requested in the RWQCB's May 27, 2003 letter, the location of proposed off-site well GW-12 has been relocated southward and further away from existing well GW-7. The currently proposed location is on the opposing side of the railroad right-of-way, as shown on Figure 4-2. Relocation further south is not recommended at present because it would place the well on one of the industrial properties that lie between the railroad right-of-way and Hart Street, where the potential exists for encountering contamination unrelated to historical operations at the former Honeywell facility. For example, the Bobrick, Inc. manufacturing plant at 11625 W. Hart St. has been engaged in industrial operations such as metal parts fabrication and finishing since the early 1960s. The continued need for an additional well in this area will be jointly discussed with the RWQCB once the proposed RI data has been received and reviewed.

Groundwater Monitoring

As part of the chromium groundwater investigation for the site, four quarterly sampling events will be conducted at GW-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, and other wells as they are installed, and water levels will be measured in all wells monthly for 12 months. After one year, the frequency of the monitoring program will be re-evaluated based on the overall level and variability of seasonal fluctuations. All samples will be analyzed for Title 22 metals and hexavalent chromium. Initially all samples will be analyzed for emerging chemicals including 1,4-dioxane by EPA Method 8270C, 1,2,3-TCP by EPA Method 8260B, NDMA by EPA Method 1625, and perchlorate by EPA Method 314.0. Continued quarterly monitoring for emerging chemicals will be conducted only if the chemicals are detected at levels above the applicable regulatory thresholds (i.e., Action Levels, etc.) during the initial three quarterly monitoring events. At the end of this period (i.e., anticipated to be December 2003), if the emerging chemical concentrations are non-detect or do not exceed the aforementioned thresholds, testing for emerging chemicals will be discontinued.

Geochemical parameters will be performed during selected events in accordance with guidelines from USEPA (USEPA, 2000b). The analytical program for the groundwater samples is summarized in Table 4-2. During the two quarterly monitoring events corresponding to low and high water season, additional samples will be collected from three different depths in GW-1, -3, -7, -10, and -14 (proposed new well) to assess the vertical distribution of chromium in the aquifer. All site monitoring wells were installed with long screen intervals to accommodate significant water level fluctuations. All proposed new monitoring wells, once installed, will be included in the quarterly groundwater monitoring program.

Prior to the commencement of the groundwater sampling program, the functionality of all existing wells will be verified and the total depth of wells measured to determine if significant siltation is present. Siltation may impact the functionality of monitoring wells and if necessary, steps such as redevelopment will be taken to remove silt in the bottom of the monitoring wells.

4.2.2 Groundwater Sampling Procedures

Standard procedures will be utilized for purging and sampling groundwater monitoring wells. In addition to the samples collected for laboratory analyses, field parameters will be measured. The general groundwater-indicator parameters, pH, temperature, electrical conductivity, and turbidity will be measured during each sampling event. The groundwater geochemical parameters, dissolved oxygen (DO), oxidation-reduction potential (ORP), ferrous iron (Fe[II]), alkalinity, and CO₂, will also be measured. Some of the parameters will be measured with a direct-reading meter, while others will be measured using a Hach® portable colorimeter in accordance with specific Hach® analytical procedures.

Qualified field personnel trained in the conduct of groundwater sampling, record documentation, and COC procedures will perform all sampling activities. In addition, sampling personnel will have thoroughly reviewed this workplan prior to sample acquisition and will have a copy of these procedures available onsite for reference.

The following paragraphs and Section 4.3 present the procedures to be followed for groundwater sample collection from groundwater monitoring wells. Exceptions to these procedures will be noted in the field logbook or on the groundwater sampling record.

Groundwater Monitoring Procedures

In general, groundwater sampling will include:

- (1) water level measurements;
- (2) calculation of proper purge volume and well purging;
- (3) collection of a groundwater sample;
- (4) proper field documentation; and
- (5) proper delivery of chilled samples under chain-of-custody (COC) to the laboratory.

All equipment to be used for sampling will be assembled, decontaminated, and calibrated (if required) prior to arriving in the field. All non-dedicated sampling and test equipment that will contact groundwater will be decontaminated before each use. This includes the water-level probe and cable, test equipment for onsite use, and other equipment that will contact the samples. The decontamination protocol will be:

- Wash with potable water and phosphate-free laboratory detergent;
- Rinse with potable water;
- Rinse with distilled or deionized water; and
- Air dry.

Procedures will be documented in the field notebook and on the groundwater sampling record forms.

Laboratory-supplied sample containers and lids will be new and sealed by the laboratory prior to receipt by Parsons. The project laboratory will add any necessary chemical preservatives to sample containers prior to shipping the containers to Parsons. The type of

container provided and the method of container decontamination will be documented in the project laboratory's permanent record of the sampling event.

As required, field analytical equipment will be calibrated according to the manufacturers' specifications prior to field use. This applies to equipment used for onsite measurements of dissolved oxygen (DO), pH, conductivity, temperature, oxidation-reduction potential (ORP), Fe(II), and carbon dioxide.

Prior to removing water from the monitoring well, an electronic water-level indicator will be used to measure the static water level to the nearest 0.01 feet. Additionally, the depth to the bottom of the well will be measured by slowly lowering the water-level probe to the bottom and taking the measurement to the nearest 0.01 foot.

A portable Grundfos® Redi-Flo II® will be used for purging the monitoring wells. The volume of water contained within the well casing at the time of sampling will be calculated, and at least three times the calculated well casing volume will be removed from the well. If a well is evacuated to a dry state during purging, the well will be allowed to recharge to 80 percent of static water level, and then a sample will be collected. The pump intake will be placed as close as possible to the top of water column to ensure all stagnant water is removed.

After purging, with groundwater pH, temperature, and conductivity measurements stabilized to within 10 percent during three consecutive readings taken at least five minutes apart, the pump discharge will be reduced to the minimal flow rate possible without generating cavitation and samples will be collected, the target flow rate is about 100 ml/min. However, due to the pump lift requirements (>250 feet), too low a purge rate could cause cavitation. The precise purge rate will be adjusted for each well such that pumping will not result in cavitation or inconsistent flow, or significant drawdown (<0.3 feet) during sampling. Alternatively, samples will be collected from disposable bailers.

Where multiple-depth samples for vertical chromium profiling need to be collected (as previously discussed in Section 4.2.1), the depth of the pump intake can be carefully re-adjusted once conventional purging has been completed. At each target depth beneath the water table, depth-specific groundwater samples will be collected only after all field parameters have stabilized.

The water will be carefully poured down the inner walls of the laboratory-supplied sample containers to minimize aeration of the sample. Excess water collected during sampling will be disposed of in the same manner as purge water. Field quality assurance and quality control protocols are discussed in Section 4.4.

In order to provide complete documentation of the sampling event, records will be maintained by field personnel in a field logbook (Section 4.3.1). In addition, the following information will be recorded on the well sampling log:

- Sample location (facility name),
- Sample identification,
- Date and time of sampling,
- Sampling/purge method,

- Field observations of sample appearance and color,
- Weather conditions,
- Water level prior to purging,
- Total monitoring well depth,
- Purge volume,
- Monitoring well condition,
- Sampler's identification,
- Field measurements of pH, temperature, specific conductivity, and DO; and
- Any other relevant information.

Groundwater Parameter Measurement

Some groundwater chemical parameters will be measured onsite. Some of the measurements will be made with direct-reading meters, while others will be made using a Hach® portable colorimeter in accordance with specific Hach® analytical procedures. These procedures are described in the following subsections.

All glassware or plasticware used in the Hach® analyses will have been cleaned prior to sample collection by thoroughly washing with a solution of laboratory-grade, phosphate-free detergent and water, and rinsing with isopropyl alcohol and deionized water to prevent interference or cross-contamination between measurements. If concentrations of an analyte are above the range detectable by the titrametric or colorimetric methods, the analysis will be repeated by diluting the groundwater sample with distilled water until the analyte concentration falls to a level within the range of the method. All rinseate and sample reagents accumulated during groundwater analysis will be collected, labeled, and carefully stored for proper disposal.

pH, Temperature, and Conductivity: Because the pH, temperature, and conductivity of a groundwater sample can change significantly within a short time following sample acquisition, these parameters will be measured in the field in unfiltered, unpreserved, "fresh" water. The measurements will be made at regular intervals during purging in a flow-through cell or a clean container separate from those intended for laboratory analysis. The wells will be purged until the readings stabilize to within $\pm 10\%$ of consecutive readings. The measured values will be recorded in the groundwater sampling record.

Turbidity Measurements: Turbidity will be measured in the field at regular intervals during purging using a portable turbidity meter. The wells will be purged in such a manner as to minimize turbidity, with a goal of less than 5 NTUs prior to sampling. The measured values will be recorded in the groundwater sampling record. In the event that the turbidity cannot be reduced to a level of less than 5 NTUs, the sample will be filtered (either in the field or by the off-site laboratory) prior to analysis.

Dissolved Oxygen Measurements: DO is the most thermodynamically favored electron acceptor used by microbes for the biodegradation of organic carbon. DO measurements will be made using a meter with an oxygen sensor in a flow-through cell at regular intervals during purging. DO readings will be recorded in the groundwater sampling record.

Oxidation/Reduction Potential: The ORP of groundwater is an indication of the relative tendency of a solution to accept or transfer electrons. ORP reactions in groundwater are usually biologically mediated; therefore, the ORP of a groundwater system depends on and influences rates of biodegradation.

The ORP will be measured in the field at regular intervals during purging and immediately before sample acquisition in a clean container separate from those intended for laboratory analysis or in a flow-through cell.

Iron (II) Measurements: Iron is an important trace nutrient for bacterial growth, and different states of iron can affect the ORP of the groundwater and act as an electron acceptor for biological metabolism under anaerobic conditions. Fe(II) concentrations will be measured in the field via colorimetric analysis with a Hach® DR/700 Portable Colorimeter after appropriate sample preparation. Hach® Method 8146 (or similar) for Fe(II) (0 to 3.0 mg/L) will be used to prepare and analyze the samples.

Alkalinity Measurements: Alkalinity concentrations will be measured in the field via titrametric analysis with a Hach® kit.

Carbon Dioxide Measurements: Carbon dioxide concentrations will be measured in the field using a CHEMetrics® portable titration kit. The method uses a sodium hydroxide titrant with a pH indicator.

4.2.3 Groundwater Monitoring Well Design and Installation

The construction of the three proposed off-site wells, GW-11, GW-12, and GW-13, will be largely based on the RWQCB-approved 1994 workplan (Hydrologue, 1994a,b) and modifications noted below. In order to prevent the possibility of metals leaching from the casing, PVC screen will be used instead of stainless steel screen as specified in the 1994 workplan. Wells will be constructed with new, decontaminated, 4-inch outside-diameter, flush-jointed and threaded, Schedule 80 polyvinyl chloride (PVC) casing and screen. The proposed slot size for screened intervals will be 0.020 inch, as opposed to the 0.030-inch slot specified in the 1994 workplan, to prevent potential siltation, which has been observed in some existing wells with 0.030-inch slot. Instead of the single well screen proposed in the 1994 workplan, three separate well screen intervals, each 15 feet in length and separated by 15 feet of blank casing, will be employed. The proposed screen intervals will extend from approximately 230 to 245 feet bgs, 260 to 275 feet bgs, and from 290 to a total depth of 305 feet bgs. The filter packs will be composed of Lonestar #2-16 silica sand or equivalent and separated by a suitable high-solids bentonite grout. If differences in lithology are found

during drilling, modifications to the proposed screen intervals, screen slot size, and filter pack specifications may need to be made in the field.

Proposed on-site well GW-14 will be completed as a 6-inch well to allow for future aquifer testing or remediation if needed. The well will be constructed with new, decontaminated, 6-inch outside diameter, flush-jointed and threaded, Schedule 80 PVC casing and screen. The proposed slot size for screened intervals will be 0.020 inch. The well screen interval will be as described above for proposed off-site wells GW-11, GW-12, and GW-14. The annular filter pack will be composed of Lonestar #2-16 silica sand or equivalent. If differences in lithology are found during drilling, modifications to the slot size and filter pack design will be made in the field. Depending on the outcome of the assessment, proposed on-site well GW-14 may need to function as an injection or extraction well (for in-situ treatment or active extraction). For this reason, and to preserve flexibility in implementing any future response actions that may become necessary, a casing/screen diameter of six inches is recommended. Detailed well specifications for proposed on-site well GW-14 are shown on Figure 4-2.

The proposed screen intervals for groundwater monitoring wells GW-11, GW-12, GW-13, and GW-14 is based on water table fluctuations as great as 60 feet during the past 10 years. The existing wells at the site have screen lengths of either 60 feet (GW-1, -2, -3, -4, -5, and -6) or 80 feet (GW-7, -8, -9, and -10). In order to maintain consistency with the existing monitoring well network, and accommodate anticipated fluctuations in the water table, an overall screened interval of similar length has been proposed.

In their May 27th letter, the RWQCB recommended that the proposed groundwater monitoring wells be completed as nested wells with three screened intervals not more than 30 feet in length each. Honeywell shares the RWQCB's interest in assessing the vertical distribution of chromium in the saturated zone and proposes to collect depth-discrete samples in the wells as follows:

- If the source of chromium in the groundwater is the overlying soil, it is likely that the highest concentrations may be found in the upper part of the saturated zone, close to the water table. To assess this potential, the proposed groundwater purging and sampling will typically target the upper part of the saturated zone to ensure the collection of representative samples. With the existing well design and construction, the collection of depth-specific samples (with which to assess the vertical distribution of chromium in the saturated zone) is feasible using a carefully positioned submersible pump and low-flow or modified low-flow purging and sampling techniques. As discussed in Section 4.2.1, discrete-depth samples at three depths in wells GW-1, -3, -7, and -10 and proposed well GW-14 are planned. For the existing wells with a single screen interval, at least three casing volume of water will be purged prior to sample collection by pumping near the top of water column using a submersible pump. Once purging has removed all stagnant water in the well casing, the pump intake will be lowered to the target sampling depths whereupon a modified micro-purge technique (i.e., minimum flow rate possible without inducing cavitation or erratic discharge) will be used to purge the wells. Samples will then be collected

directly from the discharge line of the pump. For proposed well GW-14, which will be constructed with three separate screened intervals as discussed above, an inflatable packer assembly will be used to isolate each target screen interval prior to purging and sampling. Purging and sampling methods will be comparable to the low-flow or modified low-flow methods described above. Three discrete sampling depths are proposed for wells GW-1, -3, -7, -10 and one sample per screen interval (where the screen interval intercepts groundwater) is envisioned for proposed monitoring well GW-14.

- The installation of nested wells is technically difficult due to the nearly 300 foot-thick vadose zone. In order to lift water 300 feet, the well casing diameter must be at least 4 inches in diameter to allow the use of a submersible pump of suitable size and lift capacity. The installation of three nested 4-inch diameter casings, soil gas monitoring probes and associated tubing, and the necessary centralizers in a single borehole would require a minimum 16-inch diameter borehole. The installation of nested 6-inch diameter casing strings, which could be more readily used for injection or extraction purposes, would require an even larger diameter borehole. The only drilling method capable of drilling 16-inch diameter or larger borehole to 300 ft is the reverse-circulation mud rotary method, which would require the use of a more numerous and larger equipment, potentially including a mud-rotary drill rig (with mast height typically exceeding 40 feet); large-capacity trailer-mounted mud tank, mud pump, and shale shaker; roll-off-bin, tilt-hopper, and fork-lift for containing and disposing of the spent drilling mud; support vehicles including a water truck and chase truck; and drill pipe lay-down and staging area. Given the on-site space limitations at the Public Storage parcel, and safe working distances and protocols dictated by the railroad, this drilling method is not feasible given these logistical considerations. Another difficulty frequently experienced during the installation of nested wells via the mud rotary drilling method is the removal of mud filtercake during well development. With more numerous well casing strings and borehole diameters of 16 inches or greater, the distal borehole wall often is 10 or more inches away from the well screen. Due to the greater distance involved, uniform well development including removal of accumulated filtercake on the opposite side of the borehole wall is increasingly difficult to achieve, with lasting and adverse impacts on the groundwater sample quality.

In lieu of the nested wells recommended by the RWQCB, a multiple-zone or multi-port design employing three comparatively short well screens connected by blank casing is proposed (see preceding discussion in Section 4.2.3). The annular space separating the filter packs will be sealed with a bentonite grout. Where depth-discrete sampling is necessary, the individual screened intervals can be hydraulically isolated through the use of inflatable packers. Honeywell welcomes the opportunity to meet with the RWQCB to discuss multi-port well construction/sampling and share successful results from other sites with similar aquifer characteristics.

4.3 STANDARD FIELD PROTOCOLS

Work on all phases of the remedial investigation will be conducted according to the following standard field protocols.

4.3.1 Field Log Book

All field activity information will be recorded in a permanently bound notebook with sequentially numbered pages. The date and initials will be recorded at the top of each page. Minimum information required for each entry includes:

- Time (recorded in the column under the date);
- Weather conditions during previous 24 hours;
- Persons performing the drilling, sampling, testing, or other activity;
- Drilling and well construction information;
- Sample location map or detailed sketch,
- Site identification;
- Photograph numbers and description;
- Equipment decontaminated and procedures utilized;
- Equipment serial numbers;
- Calibrations;
- Field measurements not recorded on other data sheets;
- Records of pertinent conversations;
- Names, titles, and organization of any visitors entering the site; and
- Comments (suitable for reconstructing incident without memory).

All entries will be made in waterproof ink. Any errors will be corrected by drawing a single line through the mistake, and all corrections will be initialed and dated. Blank spaces will be crossed out and initialed and dated.

4.3.2 Utility Clearance

All boring locations will be cleared for underground utilities and other obstacles by a geophysical survey prior to drilling. All proper state and local agencies, including DIG ALERT, will be notified in advanced of drilling operations.

4.3.3 Survey

Parsons will contract a licensed surveyor to survey all boring and well locations for future reference and comparison to previously collected data.

4.3.4 Air Rotary Casing Hammer Drilling

The proposed air rotary casing hammer drilling method will use a tri-cone bit for drilling and compressed air to remove soil cuttings from the drill casing. In this method, air is directed through the hollow drilling rod down to the drill bit, where soil cuttings and entrained groundwater are blown up the drill casing. The drill casing will be advanced behind the tri-cone bit as the borehole is being drilled. Then the drill cuttings are brought up inside the inner drive tube into a cyclone at the surface. The cyclone slows the movement of the soil and water and drops them into a 55-gallon drum or a large roll-off type dump box. Water that accumulates in the drums and bins will be pumped off to a portable water tank for offsite disposal. In order to collect soil samples a split-spoon sampler will be inserted through the hollow center of the drill stem and hammered out beyond the end of the lead auger drill bit into undisturbed sediments. These samples will be retrieved by the driller and handed to the on-site geologist who will log the stratigraphy.

4.3.5 Sample Handling

All samples collected will be labeled in a clear and precise way for proper identification in the field and for tracking in the laboratory. The samples will have preassigned, identifiable, and unique numbers.

- Project location/name;
- Sample identification number;
- Sampling date;
- Sampling time;
- Preservatives added;
- Sample collector's initials; and
- Analyses requested.

After the samples are sealed and labeled, they will be packaged for shipment to the project laboratory. Every effort will be made to protect the samples against shipment breakage. All glass sample bottles will be wrapped in bubble pack and taped. The cooler will be filled with double-bagged ice, to maintain a maximum shipping temperature of 4°C.

After the cooler has been filled with samples and bagged ice, any remaining space will be filled with bubble pack. This will help prevent sample movement during shipment. The lid and the drain port will be taped shut. The cooler will then be taped closed by taping around the cooler at least twice on each side of the cooler. Samples will be either shipped via an overnight service to the project laboratory or picked up by courier and delivered the same day.

Chain-of-custody forms will be completed in the field and will accompany all samples during shipment. The forms will be placed in a locking plastic bag and taped to the inside lid of the shipping cooler.

The chain-of-custody form will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is either in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorized personnel. Until the samples are shipped, the custody of the samples will be the responsibility of Parsons. The site leader or designee will sign the chain-of-custody form.

4.4 FIELD QUALITY ASSURANCE/QUALITY CONTROL

As a check on field sampling, quality assurance/quality control (QA/QC) samples will be collected during each sampling event. Definitions for field QA/QC samples are presented below.

4.4.1 Field Duplicates

Field duplicate samples will be collected and analyzed to evaluate sampling and analytical precision. A field duplicate is defined as two or more samples collected independently at the same sampling location during a single act of sampling. The laboratory will be unable to distinguish which samples are field duplicates. Each of the field duplicates will be uniquely identified with a coded identifier, which will be in the same format as other sample identifiers. Duplicate sample results are used to assess the precision of the sample collection process. Field duplicates will be collected from ten percent of all samples. Field duplicate analysis is not required for geochemical parameters.

4.4.2 Equipment Rinseate Blank

Equipment rinseate blanks (field blanks) are used to measure contamination introduced to a sample set from improperly decontaminated sampling equipment. Equipment rinseate blanks consist of ASTM Type II water (or equivalent) poured into or pumped through the sampling device following decontamination. The rinseate is transferred to a sample bottle appropriate for the analysis and transported to the laboratory for analysis. One equipment rinseate sample will be collected per sampling event for each type of sampling equipment used (disposable bailers excluded). The equipment rinseate samples are analyzed for the same laboratory parameters as the site samples. Equipment rinseate blanks need not be analyzed for geochemical parameters.

4.4.3 Other QA/QC Samples

Other QA/QC samples including trip blanks, matrix spike and matrix spike duplicates, and method blanks will be used to confirm the quality of the laboratory data. The trip blank, consisting of 40-milliliter glass vial filled with analyte-free reagent-grade water (ASTM Type II or equivalent) is used to indicate potential contamination by VOCs during sample shipping and handling. The blank accompanies the empty sample bottles to the field and is placed in a cooler returning to the laboratory that contains water or soil matrix VOC samples. The trip blank is not opened until it is analyzed along with the corresponding site samples.

Method blanks are designed to detect contamination of the field samples in the laboratory environment. Method blanks verify that interferences caused by contaminants in solvents, reagents, glassware, or in other sample processing hardware are known and minimized.

Matrix spike (MS) samples are designed to check the accuracy of the analytical procedures for the sample matrix by analyzing a field sample spiked at the laboratory with a known standard solution containing all the target analytes. A matrix spike duplicate (MSD) is the second of a pair of laboratory matrix spike samples. The MSDs are designed to check the precision and accuracy of analytical procedures by sample matrix.

4.5 INVESTIGATION DERIVED WASTE (IDW) MANAGEMENT PLAN

In the process of conducting subsurface investigations, well installation, and groundwater monitoring various types of potentially contaminated investigation-derived waste (IDW) will be generated. Possible IDW includes:

- Used personal protective equipment (PPE);
- Purge water;
- Disposable sampling equipment;
- Decontamination fluids; and
- Soil cuttings from soil borings.

Used PPE and disposable equipment will be double bagged and placed in a municipal refuse dumpster on site. These wastes are not considered hazardous and may be sent to a municipal landfill. Any waste PPE and disposable equipment which can still be reused will be rendered inoperable before disposal in the refuse dumpster.

Soil cuttings generated during the subsurface sampling will be stored in 55-gal drums or bins on site. Profiling of soil cuttings will be done to ensure appropriate disposal. Purge water and decontamination fluids will be stored in 55-gal drums or a polyethylene tank on-site until they can be profiled and disposed of properly.

4.6 SITE SPECIFIC HEALTH AND SAFETY PLAN

All remedial investigations will be conducted in accordance with the provisions of the site-specific health and safety plan for the North Hollywood site (Parsons, 2001). After this workplan is approved by the RWQCB, the site-specific health and safety plan will be updated to include all the elements of the planned work.

4.7 PROJECT SCHEDULE

In response to the February 2003 CAO, quarterly groundwater monitoring and reporting was initiated in the First Quarter 2003. Quarterly groundwater monitoring will continue for a total of four quarters following the schedule of the CAO, with reports due on April 15, July 15, October 15, and January 15. After the completion of four quarters of monitoring, the data will be evaluated and the necessity and frequency of future monitoring will be determined.

Upon RWQCB approval of this workplan, Parsons will proceed on behalf of Honeywell to schedule and coordinate all fieldwork. Subsurface soil investigations are anticipated to begin in the third quarter of 2003, contingent upon site operation schedule and requirements. On-site groundwater well installation will occur concurrent with the soil investigation. Off-site well installation will be dependant upon approval of the work by Union Pacific.

A data report will be prepared after the completion of the proposed soil investigation to summarize the findings of soil investigation.

SECTION 5

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TABLES

Table 2-1
Earth Tech 1997 Soil Confirmation Sampling Results

Boring	Total Chromium (mg/kg)		Hexavalent Chromium (mg/kg)	
	Confirmation Soil Sampling	1993 Soil Investigation Sampling	Confirmation Soil Sampling	1993 Soil Investigation Sampling
SBP1-8A	16	583.0 (5')	0.34	28.6 (5')
SBP1-36A	859	1140.0 (5')	0.99	68.2 (5')
SBP1-37A	30.7	1700.0 (5')	ND	33.7 (5')
SBP1-73A	850	340.0 (10')	31	170.0 (10')
SBP1-500	2,280	NA	21.5	NA
SBP1-501	26.6	NA	3.2	NA
SBP1-502	1,650	NA	37.5	NA

Note:

ND = Below Detection Limit

NA = Not Available

Source: Earth Tech, 1997

Table 3-1
Existing Well Construction Details
Honeywell North Hollywood Site

Well ID	Well Installation Date	Screen Length	Screen Interval (ft bgs)	Total Depth (ft bgs)	Well Diameter (inches)	Screen Size	Screen Type
GW-1	07/12/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-2	07/01/91	60	241-301	301	4	0.030	Sch 80 PVC
GW-3	07/09/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-4	07/03/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-5	06/27/91	60	248-308	308	4	0.030	Sch 80 PVC
GW-6	07/16/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-7	07/01/93	80	230-310	310	4	0.030	Steel
GW-8	07/19/93	80	225-305	305	4	0.030	Steel
GW-9	07/23/93	80	223-303	303	4	0.030	Steel
GW-10	07/12/93	80	230-310	310	4	0.030	Steel

Table 3-2
Summary of Historical Chromium Groundwater Data
Honeywell North Hollywood Site

Well ID	Date	Sample type		Analytical Result	
		Filtration	Collection	Total Chromium (mg/L)	Hexavalent Chromium (mg/L)
GW-2	Aug-93	NF	NS	<0.010	NA
GW-3	Aug-93	NF	NS	0.012	NA
GW-6	Aug-93	NF	NS	<0.010	NA
GW-3	07/30/97	NF	Bailer	1.4	<2.0
GW-3	07/30/97	NF	Bailer (Dup)	0.93	1.4
GW-4	02/27/98	NF	Bailer	0.043	0.048
GW-4	02/27/98	FF	Bailer	0.021	0.019
GW-3	07/28/98	FF	Bailer	1.1	1.4
GW-3	07/28/98	FF	Bailer (Dup)	1.7	1.7
GW-3	07/28/98	NF	Bailer	0.98	0.99
GW-3	07/28/98	NF	Bailer (Dup)	0.88	0.57
GW-3	07/28/98	LF	Pump	0.17	0.17
GW-3	07/28/98	NF	Pump	0.17	0.18
GW-3	07/23/99	FF	Bailer	1.9	1.8
GW-3	07/23/99	FF	Bailer (Dup)	2.0	2.0
GW-1	02/08/01	NF	Pump	0.174	0.151
GW-2	02/08/01	NF	Pump	0.0129	<0.001
GW-3	02/08/01	NF	Pump	5.81	4.61
GW-6	02/09/01	NF	Pump	0.0157	0.001
GW-7	02/09/01	NF	Pump	0.36	0.311
GW-8	02/09/01	NF	Pump	0.00614	0.001
GW-9	02/09/01	NF	Pump	<0.005	0.001
GW-10	02/09/01	NF	Pump	0.617	0.691
GW-1	03/25/03	NF	Bailer	0.085	0.081
GW-2	03/25/03	NF	Bailer	0.0063	<0.001
GW-3	03/26/03	NF	Bailer	0.85	0.83
GW-4	03/27/03	NF	Bailer	0.008	0.0011
GW-5	03/24/03	NF	Bailer	0.009	<0.001
GW-6	03/25/03	NF	Bailer	0.013	0.0012
GW-7	03/26/03	NF	Bailer	0.44	0.17
GW-8	03/24/03	NF	Bailer	0.029	<0.001
GW-9	03/24/03	NF	Bailer	0.077	<0.001
GW-10	03/26/03	NF	Bailer	0.17	0.041

(Dup) - Duplicate sample collected

NF - Not Filtered; FF - Field-Filtered; LF - Laboratory-Filtered;

NS - Not specified; NA - Not analyzed

Note:

All bailer samples were collected after proper purging with a submersible pump

Table 3-3
Summary of Historical Emerging Chemicals Groundwater Data
Honeywell North Hollywood Site

Well ID	Sample Date	Perchlorate (EPA Method 314.0)	n-Nitrosodi- methylaniline (EPA Method 1625)	1,4-Dioxane (EPA Method 8270C)	1,2,3- Trichloropropane (EPA Method 8260B)
GW-1	03/25/03	<2.0	<0.002	4.4	<0.005
GW-2	03/25/03	<2.0	<0.002	3.6	0.016
GW-3	03/26/03	2.0	<0.002	5.2	0.0083
GW-4	03/27/03	<2.0	<0.002	4.0	0.007
GW-5	03/24/03	<2.0	<0.002	5.5	0.013
GW-6	03/25/03	<2.0	0.003	3.5	<0.005
GW-7	03/26/03	<2.0	<0.002	4.9	0.010
GW-8	03/24/03	<2.0	0.0037	7.3	<0.005
GW-9	03/24/03	<2.0	0.012	2.6	<0.005
GW-10	03/26/03	<2.0	<0.002	5.2	0.0063

Table 4-2
Revised Groundwater Sampling and Analysis Program

Analytical Parameter	Analytical Method	Monitoring Frequency*										Sampling Objective
		GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10	
Title 22 Metals (including Chromium)	EPA 6010B	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Chemical Characterization
Hexavalent Chromium	EPA 7199	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Chemical Characterization
1,4-Dioxane	EPA 8270C	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Emerging Chemical Characterization
1,2,3-Trichloropropane	EPA 8260B SIM	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Emerging Chemical Characterization
N-Nitrosodimethylamine (NDMA)	EPA 1625C Mod	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Emerging Chemical Characterization
Perchlorate	EPA 314	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Qi	Emerging Chemical Characterization
Total Organic Carbon	EPA 415.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Dissolved Organic Carbon	EPA 415.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Total Dissolved Solids	EPA 160.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Total Suspended Solids	EPA 160.2	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
pH	EPA 150.1	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Alkalinity	SM 2320B	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Iron	EPA 7380	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Manganese	EPA 200.7	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis
Total Phosphate	EPA 365.2	A	-	A	A	-	-	A	-	-	A	Geochemical Analysis
Total Kjeldahl Nitrogen	EPA 351.3	A	-	A	A	-	-	A	-	-	A	Geochemical Analysis
Total Heterotrophic Microbes	SM 9215C	A	-	A	A	-	-	A	-	-	A	Geochemical Analysis
Chloride, Nitrate, and Sulfate	EPA 9056	A	A	A	A	A	A	A	A	A	A	Geochemical Analysis

Notes:

* Monitoring frequency: A = Annual, Q = Quarterly, Qi = Initial, Continued Quarterly Depending on Results (see Text), - = Not Planned

FIGURES

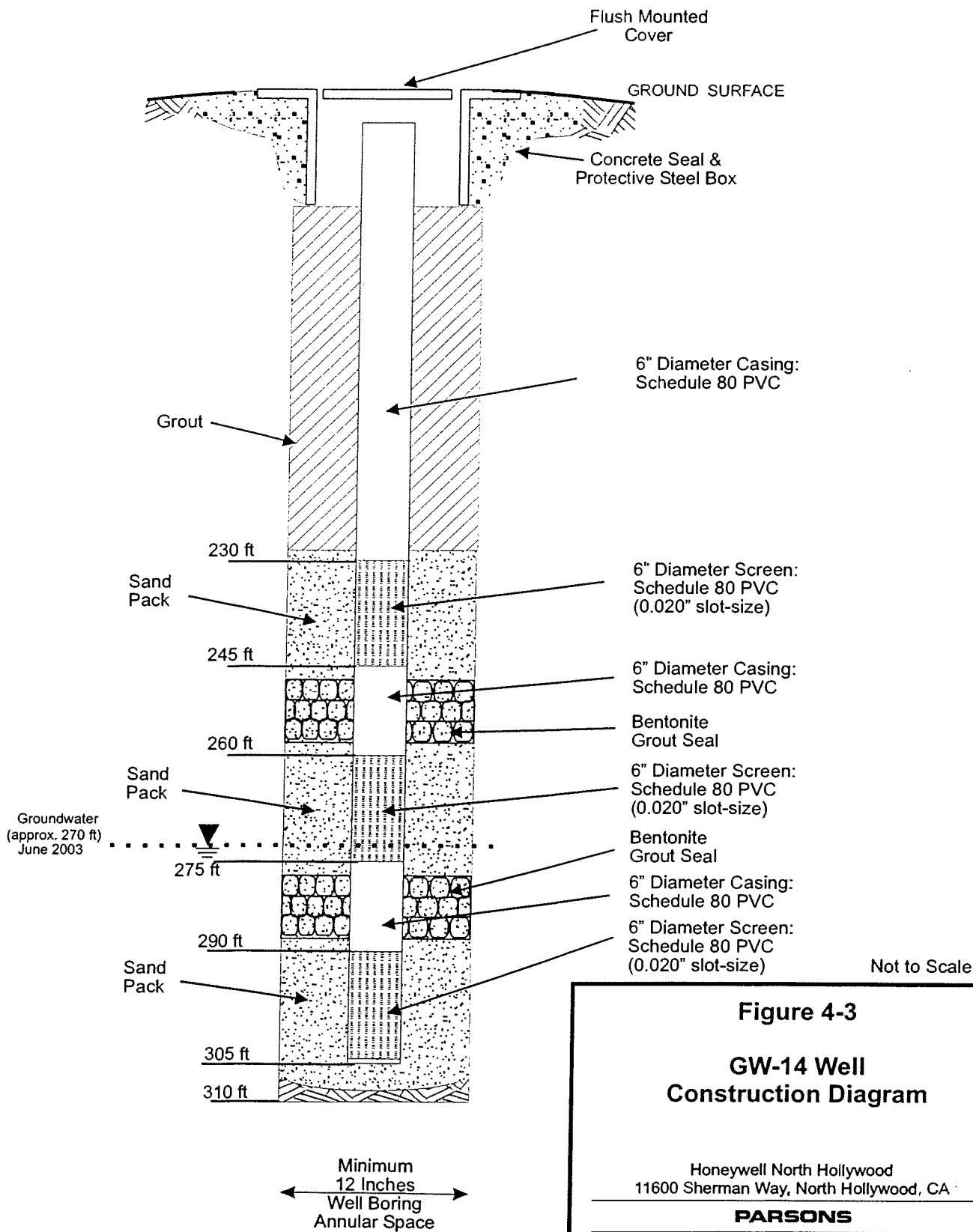


Figure 4-3

**GW-14 Well
Construction Diagram**

Honeywell North Hollywood
11600 Sherman Way, North Hollywood, CA

PARSONS

Pasadena, CA

APPENDIX A

**BORING LOGS AND WELL CONSTRUCTION
DIAGRAMS FOR GROUNDWATER
MONITORING WELLS**

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		LTR	Description	Major Divisions		LTR	Description
Coarse Grained Soils	Gravel and Gravelly Soils	GW	Well-graded gravels or gravel-sand mixtures, little or no fines	Fine Grained Soils	Silts and Clays LL<50		Inorganic silts and very fine-grained sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines			ML	
		GM	Silty gravels, gravel-sand-silt mixtures				Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		GC	Clayey gravels, gravel-sand-clay mixtures			CL	
	Sand and Sandy Soils		Well-graded sands or gravelly sands, little or no fines		Silts and Clays LL>50	OL	Organic silts and organic silt-clays of low plasticity
		SW					Inorganic silts, micaceous or diatomaceous fine-grained sandy or silty soils, elastic silts
		SP	Poorly graded sands or gravelly sands, little or no fines			MH	
		SM	Silty sands, sand-silt mixtures			CH	Inorganic clays of high plasticity, fat clays
		SC	Clayey sands, sand-clay mixtures			OH	Organic clays of medium to high plasticity
				Highly Organic Soils		Pt	Peat and other highly organic soils

**SURFACE
ELEVATION**

734.42

WELL NO. GW 1-305

734.42
REF. ELEV.

TEST BORING INSTALLATION

Date Comp. : 07/11/91
Hole Diameter: 8.75 in.
Drill. Method: Dual Wall Percussion
Samp. Method: CA Mod. Sampler
Company Rep. : R. Terravachia

WELL CONSTRUCTION

Date Comp. : 07/12/91
Hole Diameter: 8.625 in.
Drill. Method: Dual Wall Percussion
Company Rep. : R. Terravachia

WELL CASING

Material : Sch 80 PVC
Diameter : 4 in.
Joints :

WELL SCREEN

Material : Sch 80 PVC
Diameter : 4 in.
Joints :
Opening : 0.030

SAND PACK : #3 Sand

ANNULUS SEAL : Bentonite

SURFACE CASING

Material :
Diameter :
Cap :

WATER LEVEL MEASUREMENTS

Surface Elevation: 734.42

Well No. : GW 1-305

Stick-Up :

Ref. Elev.: 734.42

Dep. Water:

Water Lev.:

Mass. On :

Survey By :

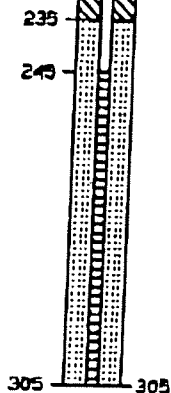
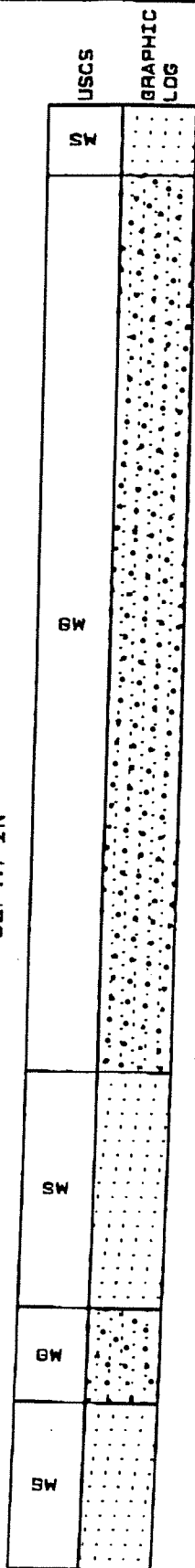
Date :

NOTES:

001820

ELEVATION (FEET ABOVE MEAN SEA LEVEL)

DEPTH IN



AS000089731

Geoson
Associates

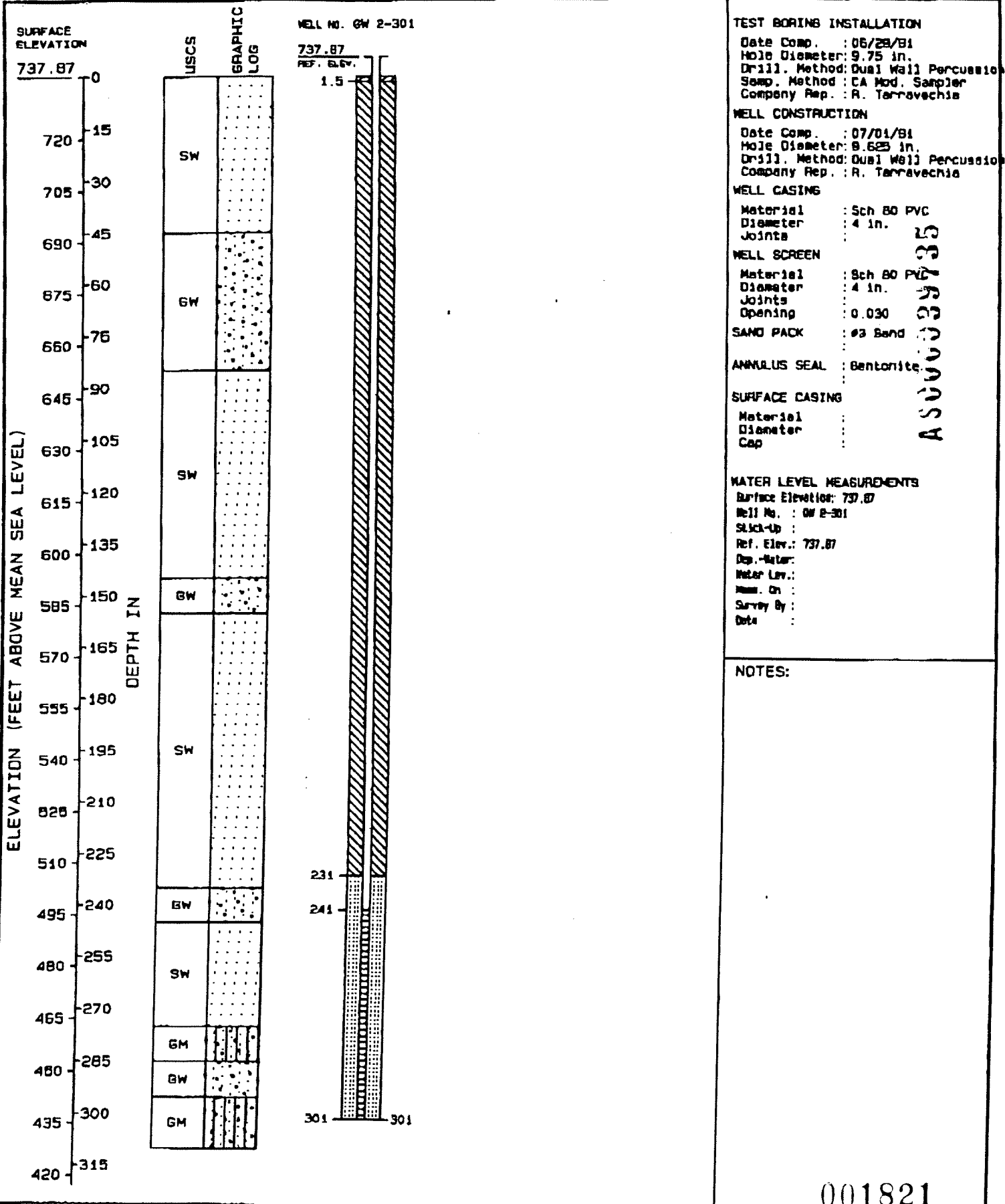
Environmental and Geotechnical Services

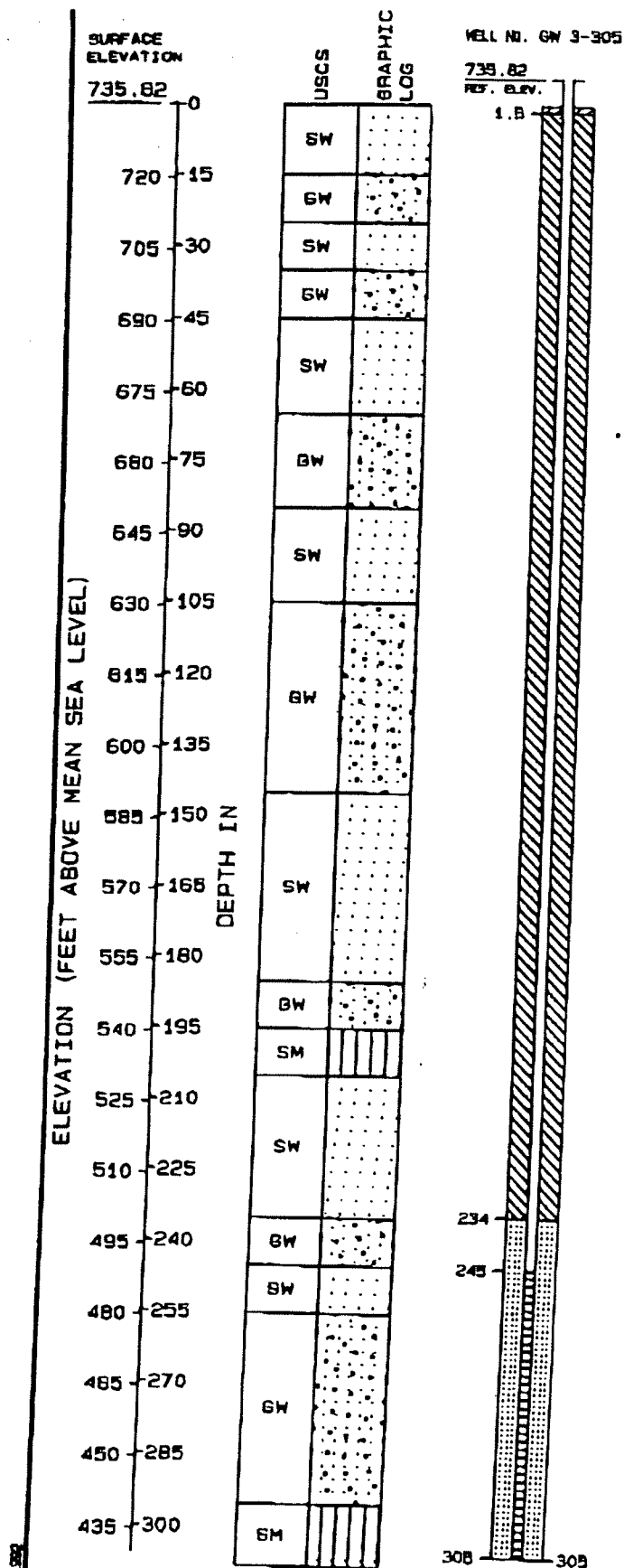
ALLIED-SIGNAL AEROSPACE CO.

North Hollywood Site
North Hollywood, California
PROJECT # ASASO NHCA 004

WELL GW 1-305

Date Completed : 07/12/91
Company Rep. : R. Terravachia
Drilling Method: Dual Wall Percussion
Hole Diameter : 8.625 in.





TEST BORING INSTALLATION

Date Comp. : 07/08/91
Hole Diameter: 9.75 in.
Drill Method: Dual Wall Percussion
Samp. Method : CA Mod. Sampler
Company Rep. : R. Tarravechia

WELL CONSTRUCTION

Date Comp. : 07/09/91
Hole Diameter: 9.825 in.
Drill. Method: Dual Wall Percussive
Company Rep. : R. Terravecchia

WELL CASING

Material : Sch 80 PVC
Diameter : 4 in.
Joints :

WELL SCREEN

Material	: Sch 80 PVC
Diameter	: 4 in.
Joints	:
Opening	: 0.030

BAND PACK : #3 Band

ANNULUS SEAL : Bentonite

SURFACE CABING

Material
Diameter
Cap

WATER LEVEL MEASUREMENTS

Surface Elevation: 735.62
Well No. : GW 3-303
Stick-Up :
Ref. Elev.: 735.62
Dep. Water:
Water Lev.:
Hose, On :
Survey By :
Date :

NOTES:

ASSOCIATION

001822

WELL GW 3-305

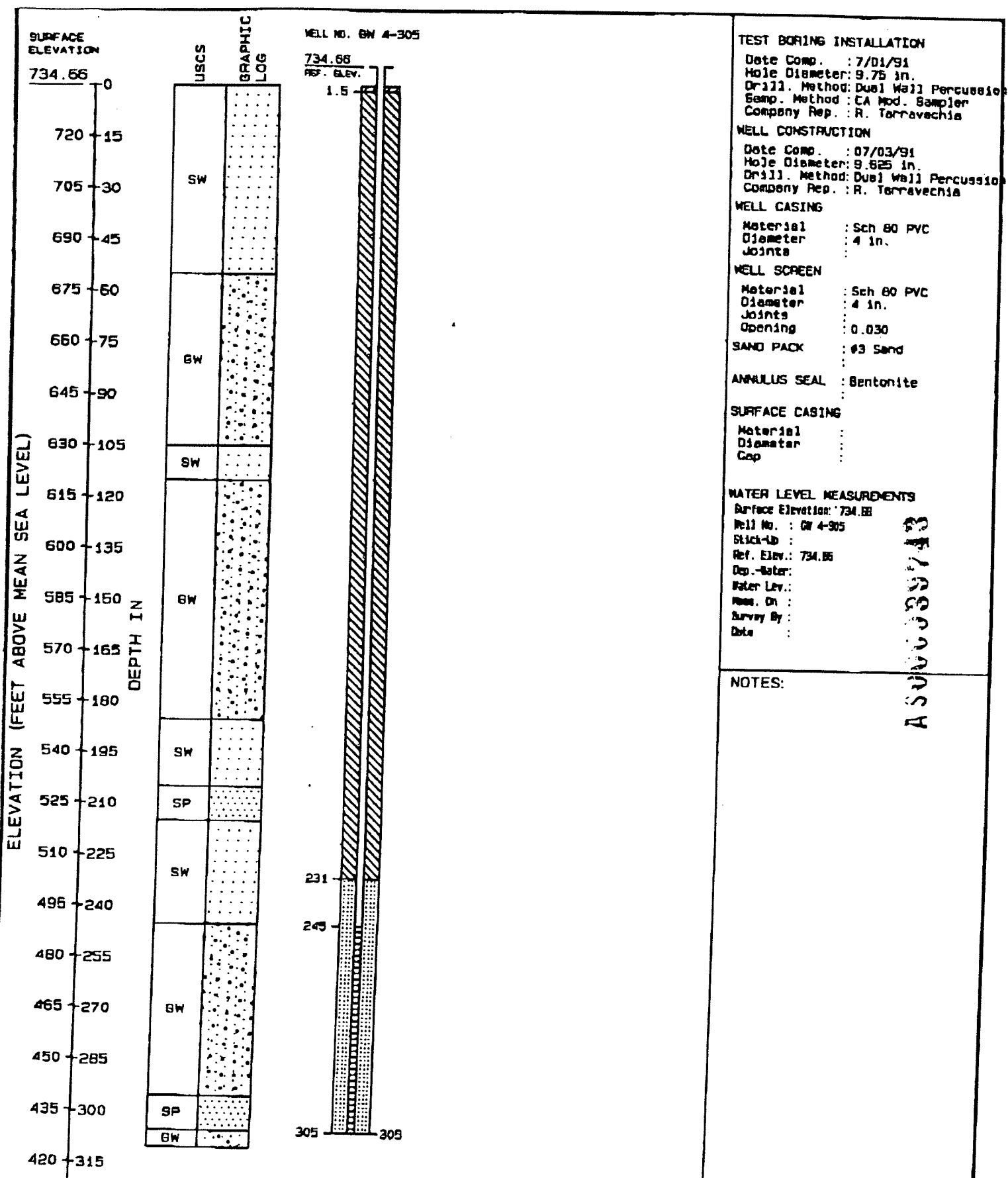
Date Completed : 07/09/81
Company Rep. : A. Tarraevich
Drilling Method: Dual Wall Percussion
Hole Diameter : 9.825 in.

**1 a gleason
associates**

Environmental and Geotechnical Services

ALLIED-SIGNAL AEROSPACE CO.

North Hollywood Site
North Hollywood, California
PROJECT # ABABO NHCA 004



AS000339743

001823

Id geason
associates
Environmental and Geotechnical Services

ALLIED-SIGNAL AEROSPACE CO.
North Hollywood Site
North Hollywood, California
PROJECT # ASASD NHCA 004

WELL GW 4-305
Date Completed : 07/03/91
Company Rep. : R. Tarravecchia
Drilling Method: Dual Wall Percussion
Hole Diameter : 9.825 in.

SURFACE
ELEVATION

735.73

USCS

GRAPHIC
LOG

WELL NO. GW 5-308

735.73
REF. ELEV.

1.5

ELEVATION (FEET ABOVE MEAN SEA LEVEL)

DEPTH IN

GW	
SW	
GW	
SW	
GW	
SW	
GW	
GM	
GP	
SP	
SW	
GW	
SW	
SP	
GM	
SW	
GW	
SP	
GP	

237

245

308

308

TEST BORING INSTALLATION

Date Comp. : 6/25/91
Hole Diameter: 9.75 in.
Drill. Method: Dual Wall Percussion
Samp. Method: CA Mod. Sampler
Company Rep. : R. Tarrovecchia

WELL CONSTRUCTION

Date Comp. : 06/27/91
Hole Diameter: 9.825 in.
Drill. Method: Dual Wall Percussion
Company Rep. : R. Tarrovecchia

WELL CASING

Material : Sch 80 PVC
Diameter : 4 in.
Joints :

WELL SCREEN

Material : Sch 80 PVC
Diameter : 4 in.
Joints :
Opening : 0.030

SAND PACK

: #3 Sand

ANNULUS SEAL

: Bentonite

SURFACE CASING

Material :
Diameter :
Cap :

WATER LEVEL MEASUREMENTS

Surface Elevation: 735.73
Well No. : GW 5-308
Stick-Up :
Ref. Elev.: 735.73
Dep. Meter:
Water Lev.:
Moss. On :
Survey By :
Date :

NOTES:

ASU00089747

001824

for geoson
associates

Environmental and Geotechnical Services

ALLIED-SIGNAL AEROSPACE CO.

North Hollywood Site
North Hollywood, California
PROJECT # ASASO NMCA 004

WELL GW 5-308

Date Completed : 06/27/91
Company Rep. : R. Tarrovecchia
Drilling Method: Dual Wall Percussion
Hole Diameter : 9.825 in.

02-10-1992

ELEVATION (FEET ABOVE MEAN SEA LEVEL)

SURFACE ELEVATION

739.93

725 - 15

710 - 30

695 - 45

680 - 60

665 - 75

650 - 90

635 - 105

620 - 120

605 - 135

590 - 150

575 - 165

560 - 180

545 - 195

530 - 210

515 - 225

500 - 240

485 - 255

470 - 270

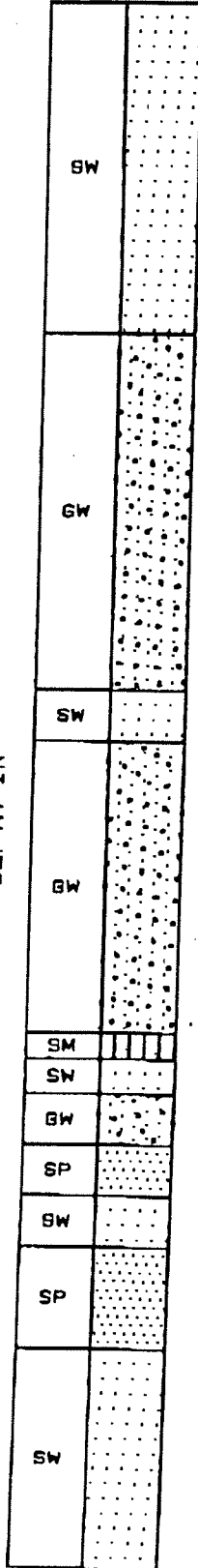
455 - 285

440 - 300

DEPTH IN

USCS

GRAPHIC LOG



WELL NO. GW 6-305

739.93
Ref. Elev.

1.5

235

245

305

305

TEST BORING INSTALLATION

Date Comp. : 07/13/91
Hole Diameter: 9.75 in.
Drill. Method: Dual Wall Percuss
Samp. Method: CA Mod. Sampler
Company Rep. : R. Terravecchia

WELL CONSTRUCTION

Date Comp. : 07/16/91
Hole Diameter: 9.825 in.
Drill. Method: Dual Wall Percuss
Company Rep. : R. Terravecchia

WELL CASING

Material : Sch 80 PVC
Diameter : 4 in.
Joints :

WELL SCREEN

Material : Sch 80 PVC
Diameter : 4 in.
Joints :
Opening : 0.030

SAND PACK

#3 Sand

ANNULUS SEAL

Bentonite

SURFACE CASING

Material :
Diameter :
Cap :

WATER LEVEL MEASUREMENTS

Surface Elevation: 739.93

Well No. : GW 6-305

Stick-Up :

Ref. Elev.: 739.93

Dep. Meter:

Water Lev.:

Meas. On :

Survey By :

Date :

NOTES:

A SUBG039751

001825

Geoson
associates

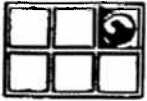
Environmental and Geotechnical Services

ALLIED-SIGNAL AEROSPACE CO.

Confirmation Borings
Former LAX Facility
Los Angeles, California
PROJECT # ASALAD LACA 080

WELL GW 6-305

Date Completed : 07/16/91
Company Rep. : R. Terravecchia
Drilling Method: Dual Wall Percussion
Hole Diameter : 9.825 in.



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-7

Project Allied Signal-N. Hollywood Owner Allied Signal
 Location North Hollywood Project No. 042500057/6502 Date drilled 8/22-7/1, 1983
 Surface Elev. 734.81 ft. Total Hole Depth 310 ft. Diameter 10.0 in.
 Top of Casing _____ Water Level Initial 251 ft. Static _____
 Screen: Dia 4 in. Length 80.0 ft. Type/Size (Steel) .030 in.
 Casing: Dia 4 in. Length 230 ft. Type 10' Steel and 220' PVC
 Filter Pack Material Sand Rig/Core Type _____
 Drilling Company Valley Well Drilling Method Percussion Permit # _____
 Driller Richard Perks Log By Louis Ramirez/Sal Sanchez
 Checked By Larry Higinbotham License No. RG 5487

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ & Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						
2						
4						
6						
8						
10					SM	SAND with minor Gravel.
12						
14						
16						
18						
20						Fine SAND with Gravel.
22						
24						
26						
28					SM	Fine SAND with Gravel.
30						
32						
34						
36						
38						
40						Medium SAND with minor Gravel, slightly moist, no odor.
42						
44					SM	
46						
48						
50						Fine SAND, damp, no odor. Vapor probe set at 50' below grade.
52						
54						
56					SM	Very fine SAND with Gravel, dry, no odor.
58						
60						
62						

001826



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-7

Project Allied Signal-N. Hollywood

Owner Allied Signal

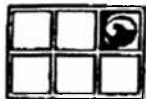
Location North Hollywood

Project No. 042500057/6502

Date drilled 6/22-7/1, 1993

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Flow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 60%
63						
65						
67					SM	Very fine SAND with coarse Gravel, dry, no odor.
69						
71						SAND with minor Gravel, damp, no odor.
73						
75						
77						
79						
81						Medium SAND with Gravel, light gray, dry, no odor.
83						
85						
87						
89						Medium SAND with fine Gravel, brown, damp, no odor.
91						
93						
95						
97						
99						
101						Medium SAND with Gravel, brown, damp, no odor.
103						
105					SM	
107						
109						SAND with medium Gravel, brown.
111						
113						
115						
117						
119						
121						SAND with medium Gravel, brown.
123						
125						
127						
129						
131						SAND with medium Gravel, brown.
133						
135						
137						
139						
141						SAND with medium Gravel, brown.
143						

001827



GROUNDWATER
TECHNOLOGY

Drilling Log

A5000082229

Monitoring Well GW-7

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/8502

Date drilled 8/22-7/1, 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
143						
145						
147						
149						
151						SAND with medium gravel, brown. Vapor probe set at 150' below grade.
153						
155						
157						
159						
161						SAND with medium Gravel, brown.
163						
165						
167						
169						
171					SM	SAND with medium Gravel, brown.
173						
175						
177						
179						
181						SAND with medium Gravel; brown.
183						
185						
187						
189						
191						SAND with minor Gravel, brown.
193						
195						
197						
199						
201						Fine SAND, brown.
203						
205						
207						
209						
211					SM	Fine SAND, brown.
213						
215						
217						
219						
221						Fine SAND, brown.
223						

001828



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082230

Monitoring Well GW-7

Project Alled Signal-N. Hollywood

Owner Alled Signal

Location North Hollywood

Project No. 042500057/B502 Date drilled 8/22-7/1, 1993

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
223						
225						
227						
229						
231		0	GTI-1-230			Fine SAND, brown. Undisturbed soil sample collected for sieve analyses.
233						
235						
237						
239						
241						Fine SAND, brown, no odor.
243						
245						
247					SM	
249						
251						Fine SAND, brown, damp initially, small amount of water after waiting 15 minutes.
253						Groundwater encountered at 251 feet below grade, 6/24/93
255						
257						
259						
261		0	GTI-1-260			Fine SAND with minor Gravel, brown, saturated. Undisturbed soil sample collected for sieve analysis.
263						
265						
267						
269						
271						SAND with minor Gravel, brown, saturated. Sampler broken off on bottom of boring. No sample retrieved.
273						
275						
277						
279						
281						SAND, brown, saturated.
283						
285						
287					SW	
289						
291						SAND, brown, saturated.
293						
295						
297						
299						
301						
303						SAND, brown, saturated



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-7

Project Allied Signal-N. Hollywood

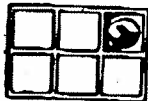
Owner Allied Signal

Location North Hollywood

Project No. 042500057/6502 Date drilled 8/22-7/4 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 60%
303						
305						
307					SW	
309						
311						SAND, brown, saturated.
313						Boring terminated at 310 feet below grade. Well completed to 310 feet below grade, screened to 230 feet below grade, and completed with solid casing to grade. Vapor probes installed at 50 feet below grade and 150 feet below grade. All soil cuttings were placed in bins, covered, and left on site for disposal. All soil types logged from drill cuttings. Soil samples collected at 230' and 260' below grade and submitted for sieve analysis.
315						
317						
319						
321						
323						
325						
327						
329						
331						
333						
335						
337						
339						
341						
343						
345						
347						
349						
351						
353						
355						
357						
359						
361						
363						
365						
367						
369						
371						
373						
375						
377						
379						
381						
383						

001830



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082232

Monitoring Well GW-1

Project Allied Signal-N. Hollywood Owner Allied Signal
 Location North Hollywood Project No. 042500057/8502 Date drilled 7/13-7/19
 Surface Elev. 742.14 ft. Total Hole Depth 320 ft. Diameter 10.0 in.
 Top of Casing _____ Water Level Initial 258 ft. Static _____
 Screen: Dia 4 in. Length 80.0 ft. Type/Size (Steel) .030 in.
 Casing: Dia 4 in. Length 225 ft. Type 10" Steel and 215" PVC
 Filter Pack Material Sand Rig/Core Type _____
 Drilling Company Valley Well Drilling Method Percussion Permit # _____
 Driller Richard Perks Log By Louis Ramirez/Sal Sanchez
 Checked By Larry Higinbotham License No. RG 5487

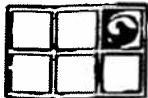
See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%. Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						
2						
4						
6						
8						
10						
12						SAND, brown, no odor.
14						
16						
18						
20						SAND, brown, no odor.
22						
24						
26						
28						
30						
32					SW	SAND, brown, no odor.
34						
36						
38						
40						
42						SAND, brown, no odor.
44						
46						
48						
50						
52						SAND, brown, no odor. Vapor probe installed at 50' below grade.
54						
56						
58						
60						
62						SAND, brown, no odor.

08/28/93 11:55 AM

001831



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-8

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/0502

Date drilled 7/13-7/19, 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 60%
63						
65						
67					SH	
69						
71						GRAVEL, light gray.
73					GM	
75						
77						SAND, brown
79						
81						
83						
85						
87						
89						
91						SAND with Gravel
93						
95						
97						
99						
101						SAND with minor Gravel.
103						
105						
107						
109					SH	
111						SAND with minor Gravel.
113						
115						
117						
119						
121						SAND with minor Gravel.
123						
125						
127						
129						
131						SAND with minor Gravel.
133						
135						
137						
139						GRAVEL, light gray.
141					GM	
143						

001832



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-8

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/6502 Date drilled 7/13-7/19, 1993

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
143						
145					GM	
147						
149						
151						SAND with minor Gravel. Vapor probe installed at 150' below grade.
153						
155						
157						
159						SAND with minor Gravel.
161						
163						
165						
167						
169						SAND with minor Gravel.
171						
173					SM	
175						
177						
179						SAND with minor Gravel.
181						
183						
185						
187						
189						SAND with minor Gravel.
191						
193						
195						
197						
199						
201					SM	Fine SAND with minor Gravel. Conductor casing broken and separated at approximately 100' below grade. Continued drilling, pushing casing down hole.
203						
205						
207						
209						
211						SAND with Gravel.
213						
215					SW	
217						
219						
221						SAND with Gravel.
223						

001833



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-8

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/B502 Date drilled 7/13-7/18, 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure)
						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
223						
225						
227						
229						
231			611-2-230			SAND with Gravel. Soil sample collected from drill cuttings and submitted for sieve analysis.
233						
235						
237						
239						
241						SAND with Gravel.
243						
245						
247						
249						
251						SAND with Gravel.
253						
255						
257						
259						Groundwater encountered at 258 feet below grade on 7/15/93
261			611-2-260			SAND with Gravel. Water on drill bit at approx. 258' below grade. Soil sample taken from drill cuttings and submitted for sieve analysis.
263					SW	
265						
267						
269						
271			611-2-270			SAND with Gravel, saturated. Soil sample taken from drill cuttings and submitted for sieve analysis.
273						
275						
277						
279						
281						SAND with large Gravel, saturated.
283						
285						
287						
289						
291						SAND with large Gravel, saturated.
293						
295						
297						
299						
301						SAND with Gravel, saturated.
303						

001834



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082236

Monitoring Well GW-8

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/8502 Date drilled 7/13-7/19, 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 60%
303						
305						
307						
309						
311						
313					SM	SAND with Gravel, saturated.
315						
317						
319						
321						SAND with Gravel, saturated
323						Boring terminated at 320 feet below grade. Soil cuttings were placed in bins, covered, and left on site for disposal. All soil types logged from drill cuttings. Vapor probes installed at 50 and 150 feet below grade. Soil samples collected from drill cuttings at 230, 260 and 270 feet below grade, and submitted for sieve analysis.
325						
327						
329						
331						
333						
335						
337						
339						
341						
343						
345						
347						
349						
351						
353						
355						
357						
359						
361						
363						
365						
367						
369						
371						
373						
375						
377						
379						
381						
383						

001835



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-9

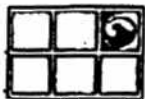
Project Allied Signal-N. Hollywood Owner Allied Signal
Location North Hollywood Project No. 042500057/B502 Date drilled 7/20-7/23
Surface Elev. 740.88 ft. Total Hole Depth 310 ft. Diameter 10.0 in.
Top of Casing _____ Water Level Initial 247 ft. Static _____
Screen: Dia 4 in. Length 80.0 ft. Type/Size (Steel) .030 in.
Casing: Dia 4 in. Length 223 ft. Type 10' Steel and 213' PVC
Filter Pack Material Sand Rig/Core Type _____
Drilling Company Valley Well Drilling Method Percussion Permit # _____
Driller Richard Parks Log By Louis Ramirez/Sal Sanchez
Checked By Larry Higinbotham License No. RG 5497

See Site Map
For Boring Location
1983

COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						
2						
4						
6						
8						
10						
12						SAND with Gravel, no odor.
14						
16						
18						
20						SAND with Gravel, no odor.
22						
24						
26						
28						
30						
32					SW	SAND with Gravel, no odor.
34						
36						
38						
40						
42						SAND with minor Gravel, no odor.
44						
46						
48						
50						SAND with minor Gravel, no odor. Vapor probe installed at 50' below grade.
52						
54						
56						
58						
60						
62						SAND with Gravel and Cobbles.

001836



GROUNDWATER
TECHNOLOGY

Drilling Log

00000004200

Monitoring Well GW-0

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

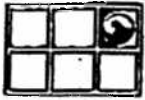
Project No. 042500057/6502

Date drilled 7/20-7/23, 1993

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure)
						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
63						
65						
67					SW	
69						
71						GRAVEL with Cobbles and Sand, light gray.
73						
75						
77						
79						
81					GM	GRAVEL with Cobbles and Sand, brown.
83						
85						
87						
89						
91						GRAVEL with Cobbles and Sand, brown.
93						
95						SAND with minor Gravel, brown.
97						
99						SAND with minor Gravel, brown.
101						
103						
105						
107						
109						
111						SAND with Gravel, brown.
113						
115					SW	
117						
119						
121						SAND with Gravel, brown
123						
125						
127						
129						
131						SAND with Gravel, brown.
133						
135						
137						
139						
141					GM	GRAVEL with Sand, gray.
143						

09/28/1993 krllog-jan93

001837



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-9

Project Allied Signal-N. Hollywood

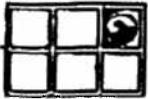
Owner Allied Signal

Location North Hollywood

Project No. 042500057/6502 Date drilled 7/20-7/23, 1993

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure)
						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
143						
145						
147						
149						
151						
153					GW	GRAVEL with Sand, gray. Vapor probe installed at 150' below grade.
155						
157						
159						
161						SAND with Gravel.
163						
165						
167						
169						
171						SAND with minor Gravel.
173						
175						
177						
179						
181						SAND with minor Gravel.
183						
185						
187						
189						
191					SW	SAND with minor Gravel.
193						
195						
197						
199						
201						SAND with minor Gravel.
203						
205						
207						
209						
211						SAND with minor Gravel, brown.
213						
215						
217						
219						
221						SAND with minor Gravel, brown.
223						

001838



GROUNDWATER
TECHNOLOGY

Drilling Log

A5000082240

Monitoring Well GW-8

Project Allied Signal-N. Hollywood

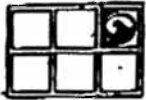
Owner Allied Signal

Location North Hollywood

Project No. 042500057/6502 Date drilled 7/20-7/23, 1993

Depth (ft)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%. And 35% to 60%
223						
225						
227						
229						
231		0	611-3-230			SAND with minor Gravel, brown. Soil sample collected from drill cuttings and submitted for sieve analysis.
233						
235					SW	
237						
239						
241						SAND with minor Gravel, brown.
243						
245						
247						Groundwater encountered at 247 feet below grade: 7/21/93
249		0	611-3-250		SW	Fine SAND with minor Gravel. Drill bit is wet at approximately 247' below grade. Undisturbed soil sample collected and submitted for sieve analysis.
251						
253						
255						
257						
259						
261		0	611-3-260			SAND with minor Gravel, saturated. Undisturbed soil sample collected and submitted for sieve analysis.
263						
265						
267						
269						
271						SAND with minor Gravel, saturated.
273						
275						
277						
279						
281					SW	SAND with minor Gravel, saturated.
283						
285						
287						
289						
291						SAND with minor Gravel, saturated.
293						
295						
297						
299						
301						SAND with minor Gravel, saturated.
303						

001839



GROUNDWATER
TECHNOLOGY

Drilling Log

A3000082241

Monitoring Well, GW-9

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/8502 Date drilled 7/20-7/23, 1993

Depth (ft)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
303					SW	SAND with minor Gravel, saturated. Boring terminated at 310 feet below grade. Well completed to 305 feet below grade. Vapor probes placed at 50 feet and 150 feet below grade. All soil types logged from drill cuttings. Undisturbed soil samples collected from 250 and 260 feet below grade, and drill cuttings collected from 230 feet below grade, and submitted for sieve analysis.
305						
307						
309						
311						
313						
315						
317						
319						
321						
323						
325						
327						
329						
331						
333						
335						
337						
339						
341						
343						
345						
347						
349						
351						
353						
355						
357						
359						
361						
363						
365						
367						
369						
371						
373						
375						
377						
379						
381						
383						

001840



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082242
Monitoring Well GW-10

Project Allied Signal-N. Hollywood Owner Allied Signal
Location North Hollywood Project No. 042500057/B502 Date drilled 7/2-7/12, 1983
Surface Elev. 737.84 ft. Total Hole Depth 310 ft. Diameter 10.0 in.
Top of Casing _____ Water Level Initial 247 ft. Static _____
Screen: Dia 4 in. Length 80.0 ft. Type/Size (Steel) .030 in.
Casing: Dia 4 in. Length 230 ft. Type 10' Steel end 220' PVC
Filter Pack Material Sand Rig/Core Type _____
Drilling Company Valley Well Drilling Method Percussion Permit # _____
Driller Richard Perks Log By Louis Ramirez/Sal Sanchez
Checked By Larry Higginbotham License No. RG 5497

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ & Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%; Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						
2						
4						
6					GM	Hard GRAVEL and Cobbles.
8						
10						SAND at 8 feet.
12						
14						
16						
18						
20						SAND with minor Gravel, brown, soft, no odor.
22						
24						
26						
28						
30						
32						SAND, brown, soft, no odor.
34					SW	
36						
38						
40						SAND, brown, soft, no odor.
42						
44						
46						
48						
50						
52						SAND, brown, soft, no odor. Vapor probe set at 50 feet below grade.
54						
56						
58						
60						GRAVEL and Cobble layer.
62					GM	

001841



GROUNDWATER
TECHNOLOGY

Drilling Log

00000002220

Monitoring Well GW

Project Allied Signal-N. Hollywood
Location North Hollywood

Owner Allied Signal

Project No. 042500057/8502 Date drilled 7/2-7/12, 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to
63						
65						
67						
69						
71						
73						
75						
77						
79						
81						
83						SAND with minor Gravel, brown.
85						
87						
89						
91						
93						SAND with minor Gravel, brown.
95						
97						
99						
101						
103						SAND with minor Gravel, brown.
105						
107						
109						
111						
113						SAND with minor Gravel, brown.
115						
117						
119						
121						
123						SAND with minor Gravel, brown.
125						
127						
129						
131						
133						SAND with minor Gravel, brown.
135						
137						
139						
141						
143						SAND with minor Gravel, brown.

09/28/12:23 611log-jan93

001842



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well GW-10

Project Allied Signal-N. Hollywood

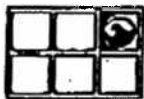
Owner Allied Signal

Location North Hollywood

Project No. 042500057/B502 Date drilled 7/2-7/12, 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Flow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure)
						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 60%
143						
145						
147						
149						
151						SAND with minor Gravel, brown. Vapor probe set at 150' below grade.
153						
155						
157						
159						
161						SAND with minor Gravel, brown, no odor.
163						
165						
167						
169						
171						SAND with minor Gravel, brown, no odor.
173						
175						
177						
179						SAND with minor Gravel, brown, no odor.
181						
183					SM	
185						
187						
189						SAND with minor Gravel, brown, no odor.
191						
193						
195						
197						
199						SAND with minor Gravel, brown, no odor.
201						
203						
205						
207						
209						SAND with minor Gravel, brown, no odor.
211						
213						
215						
217						
219						
221						SAND with minor Gravel, brown, no odor.
223						

001843



GROUNDWATER
TECHNOLOGY •

Drilling Log

Monitoring Well GW-

Project Allied Signal-N. Hollywood

Owner Allied Signal

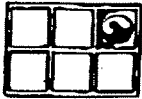
Location North Hollywood

Project No. 042500057/8502 Date drilled 7/2-7/12, 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 6
223						
225						
227						
229						
231		0	GTI-4-230		SW	SAND with minor Gravel, brown, no odor. Undisturbed soil sample collected and submitted for sieve analysis.
233						
235						
237						
239						
241						Fine SAND, brown, no odor.
243					SM	
245						
247						Groundwater encountered at 247 feet below grade; 7/8/93
249						
251		0.5	GTI-4-260			SAND. Undisturbed soil sample collected and submitted for sieve analysis.
253						
255						
257						
259						
261						SAND, saturated. Undisturbed soil sample collected and submitted for sieve analysis.
263						
265						
267						
269						
271		0.2	GTI-4-270			SAND with minor Gravel, saturated.
273						
275						
277					SW	
279						
281						SAND with minor Gravel, saturated.
283						
285						
287						
289						
291						SAND with minor Gravel, saturated.
293						
295						
297						
299						
301						
303						SAND with minor Gravel, saturated.

08/28/1993 W/Hog-jan83

001844



GROUNDWATER
TECHNOLOGY

Drilling Log

AS000082240

Monitoring Well GW-

Project Allied Signal-N. Hollywood

Owner Allied Signal

Location North Hollywood

Project No. 042500057/8502 Date drilled 7/2-7/12, 1993

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
303						
305						
307						
309						
311					SW	SAND with minor Gravel, saturated.
313						Terminated boring at 310 feet below grade surface. Well installed 310 feet below grade surface. All cuttings were placed in bins, covered, and left on site for disposal. All soil types logged from drill cuttings. Vapor probes installed at 50 and 150 feet below grade. Undisturbed soil samples collected at 230, 250 and 280 feet below grade, and submitted for sieve analysis.
315						
317						
319						
321						
323						
325						
327						
329						
331						
333						
335						
337						
339						
341						
343						
345						
347						
349						
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355						
357						
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363						
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381						
383						

APPENDIX B

SUMMARY OF GTI CHROMIUM DATA

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 1A of 28
Date: 09/13/93

45000066635

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBNP-01	01/11/93	1.0	—	—	—	—
SBNP-01	01/11/93	5.0	—	—	—	—
SBNP-01	01/11/93	10.0	—	—	—	—
SBNP-02	01/11/93	1.0	—	—	—	—
SBNP-02	01/11/93	5.0	—	—	—	—
SBNP-02	01/11/93	10.0	—	—	—	—
SBNP-03	01/11/93	1.0	—	—	—	—
SBNP-03	01/11/93	5.0	—	—	—	—
SBNP-03	01/11/93	10.0	—	—	—	—
SBP1-001	03/30/93	1.0	—	—	—	—
SBP1-001	03/30/93	5.0	—	—	—	—
SBP1-001	03/30/93	10.0	—	—	—	—
SBP1-002	03/30/93	1.0	—	—	—	—
SBP1-002	03/30/93	5.0	—	—	—	—
SBP1-002	03/30/93	10.0	—	—	—	—
SBP1-003	04/12/93	1.0	—	—	—	—
SBP1-003	04/12/93	2.0	—	—	—	—
SBP1-004	02/01/93	1.0	—	—	11.9	11900
SBP1-004	02/01/93	5.0	—	—	14.5	14500
SBP1-004	02/01/93	10.0	—	—	<1.5	<1500
SBP1-004	02/01/93	15.0	—	—	6.4	6400
SBP1-004	02/01/93	20.0	—	—	9.3	9300
SBP1-004	02/01/93	25.0	—	—	7.2	7200
SBP1-004	02/01/93	30.0	—	—	6.9	6900
SBP1-004	02/01/93	35.0	—	—	5.2	5200
SBP1-004	02/01/93	40.0	—	—	2.7	2700
SBP1-005	01/25/93	1.0	—	—	14.9	14900
SBP1-005	01/25/93	5.0	—	—	17.8	17800
SBP1-005	01/25/93	10.0	—	—	5.2	5200
SBP1-005	01/25/93	15.0	—	—	6.7	6700
SBP1-005	01/25/93	20.0	—	—	7.9	7900
SBP1-006	01/27/93	1.0	—	—	3.7	3700
SBP1-006	01/27/93	5.0	—	—	2.7	2700
SBP1-006	01/27/93	10.0	—	—	4.6	4600

< = Not detected at indicated reporting limit — = Not sampled and/or analyzed All values represent total concentrations unless noted

= Highest of Multiple Results ??? = Duplicate Results

001847

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 2A
Date: 09/13/96

AS000066696

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-006	01/27/93	15.0	—	—	3.4	3400
SBP1-006	01/27/93	20.0	—	—	3.5	3500
SBP1-007	01/27/93	1.0	—	—	9.5	9500
SBP1-007	01/27/93	5.0	—	—	3.0	3000
SBP1-007	01/27/93	10.0	—	—	3.3	3300
SBP1-007	01/27/93	15.0	—	—	2.5	2500
SBP1-007	01/27/93	20.0	—	—	2.0	2000
SBP1-008	03/18/93	3.0	0.226	(0.019)	10.4	10400
SBP1-008	03/18/93	5.0	28.6	0.723	583	583000
SBP1-008	03/18/93	10.0	0.294	(0.019)	12.5	12500
SBP1-008	03/18/93	15.0	(0.170)	(0.009)	5.2	5200
SBP1-008	03/18/93	20.0	1.64	0.413	23.7	23700
SBP1-008	03/18/93	25.0	3.91	0.301	11.6	11600
SBP1-008	03/18/93	30.0	3.54	0.280	14.1	14100
SBP1-008	03/18/93	35.0	3.38	0.287	20.6	20600
SBP1-008	03/18/93	40.0	3.85	0.415	14.8	14800
SBP1-009	03/18/93	1.0	<0.2	0.046	8.4	8400
SBP1-009	03/18/93	5.0	7.39	0.247	22.0	22000
SBP1-009	03/18/93	10.0	<0.2	<0.02	2.6	2600
SBP1-009	03/18/93	15.0	<0.2	<0.02	4.5	4500
SBP1-009	03/18/93	20.0	0.463	0.038	6.2	6200
SBP1-009	03/18/93	25.0	1.11	0.091	9.4	9400
SBP1-009	03/18/93	30.0	<0.2	0.116	13.8	13800
SBP1-009	03/18/93	35.0	1.41	0.100	10.8	10800
SBP1-010	03/29/93	1.0	—	—	—	—
SBP1-010	03/29/93	6.0	—	—	—	—
SBP1-010	03/29/93	10.0	—	—	—	—
SBP1-010	03/29/93	15.0	—	—	—	—
SBP1-011	03/29/93	1.0	—	—	—	—
SBP1-011	03/29/93	5.0	—	—	—	—
SBP1-011	03/29/93	10.0	—	—	—	—
SBP1-011	03/29/93	15.0	—	—	—	—
SBP1-012	03/30/93	1.0	—	—	—	—
SBP1-012	03/30/93	5.0	—	—	—	—

< = Not detected at indicated reporting limit — = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

001848

AS000000007

STLC (Ca.)

= Highest of Multiple Results ??? = Duplicate Results

001849

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 4A of
Date: 09/13/

A-5000066638

SITE	DATE	DEPTH	STLC (Cs.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-021	01/25/93	1.0	—	—	—	—
SBP1-021	01/25/93	5.0	—	—	—	—
SBP1-021	01/25/93	10.0	—	—	—	—
SBP1-021	01/25/93	15.0	—	—	—	—
SBP1-021	01/25/93	20.0	—	—	—	—
SBP1-021	01/25/93	25.0	—	—	—	—
SBP1-021	01/25/93	30.0	—	—	—	—
SBP1-021	01/25/93	35.0	—	—	—	—
SBP1-021	01/25/93	40.0	—	—	—	—
SBP1-022	04/08/93	3.5	—	—	—	—
SBP1-022	04/08/93	5.0	—	—	—	—
SBP1-022	04/08/93	10.0	—	—	—	—
SBP1-022	04/08/93	15.0	—	—	—	—
SBP1-022	04/08/93	20.0	—	—	—	—
SBP1-023	04/09/93	3.0	—	—	—	—
SBP1-023	04/09/93	5.0	—	—	—	—
SBP1-023	04/09/93	10.0	—	—	—	—
SBP1-023	04/09/93	15.0	—	—	—	—
SBP1-023	04/09/93	20.0	—	—	—	—
SBP1-024	01/20/93	10.0	—	—	—	—
SBP1-024	01/20/93	20.0	—	—	—	—
SBP1-024	01/20/93	30.0	—	—	—	—
SBP1-024	01/20/93	35.0	—	—	—	—
SBP1-024	01/20/93	40.0	—	—	—	—
SBP1-025	01/20/93	10.0	—	—	—	—
SBP1-025	01/20/93	20.0	—	—	—	—
SBP1-025	01/20/93	30.0	—	—	—	—
SBP1-025	01/20/93	35.0	—	—	—	—
SBP1-025	01/20/93	40.0	—	—	—	—
SBP1-026	01/14/93	1.0	—	—	—	—
SBP1-026	01/14/93	5.0	—	—	—	—
SBP1-026	01/14/93	10.0	—	—	—	—
SBP1-026	01/14/93	15.0	—	—	—	—
SBP1-026	01/14/93	20.0	—	—	—	—

< = Not detected at indicated reporting limit — = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

001850

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 5A of
Date: 09/13/93

AS0000000000

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-027	01/14/93	1.0	—	—	—	—
SBP1-027	01/14/93	5.0	—	—	—	—
SBP1-027	01/14/93	10.0	—	—	—	—
SBP1-027	01/14/93	15.0	—	—	—	—
SBP1-027	01/14/93	20.0	—	—	—	—
SBP1-028	01/14/93	1.0	—	—	—	—
SBP1-028	01/14/93	5.0	—	—	—	—
SBP1-028	01/14/93	10.0	—	—	—	—
SBP1-028	01/14/93	15.0	—	—	—	—
SBP1-028	01/14/93	20.0	—	—	—	—
SBP1-029	01/14/93	1.0	—	—	—	—
SBP1-029	01/14/93	5.0	—	—	—	—
SBP1-029	01/14/93	10.0	—	—	—	—
SBP1-029	01/14/93	15.0	—	—	—	—
SBP1-029	01/14/93	20.0	—	—	—	—
SBP1-030	01/12/93	1.0	—	—	—	—
SBP1-030	01/12/93	5.0	—	—	—	—
SBP1-030	01/12/93	10.0	—	—	—	—
SBP1-030	01/12/93	15.0	—	—	—	—
SBP1-030	01/12/93	20.0	—	—	—	—
SBP1-030	01/12/93	25.0	—	—	—	—
SBP1-030	01/12/93	30.0	—	—	—	—
SBP1-030	01/12/93	35.0	—	—	—	—
SBP1-030	01/12/93	40.0	—	—	—	—
SBP1-031	01/12/93	1.0	—	—	—	—
SBP1-031	01/12/93	5.0	—	—	—	—
SBP1-031	01/12/93	10.0	—	—	—	—
SBP1-031	01/12/93	15.0	—	—	—	—
SBP1-031	01/12/93	20.0	—	—	—	—
SBP1-032	01/12/93	1.0	—	—	—	—
SBP1-032	01/12/93	5.0	—	—	—	—
SBP1-032	01/12/93	10.0	—	—	—	—
SBP1-032	01/12/93	15.0	—	—	—	—
SBP1-032	01/12/93	20.0	—	—	—	—

< = Not detected at indicated reporting limit -- = Not sampled and/or analyzed All values represent total concentrations unless n
= Highest of Multiple Results ??? = Duplicate Results

001851

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 6A
Date: 09/13

A5330966700

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-033	01/11/93	1.0	—	—	—	—
SBP1-033	01/11/93	5.0	—	—	—	—
SBP1-033	01/11/93	10.0	—	—	—	—
SBP1-033	01/11/93	15.0	—	—	—	—
SBP1-033	01/11/93	20.0	—	—	—	—
SBP1-033	01/11/93	25.0	—	—	—	—
SBP1-033	01/11/93	30.0	—	—	—	—
SBP1-033	01/11/93	35.0	—	—	—	—
SBP1-033	01/11/93	40.0	—	—	—	—
SBP1-033	01/11/93	45.0	—	—	—	—
SBP1-034	03/19/93	1.0	<0.2	<0.02	<1.5	<1500
SBP1-034	03/19/93	5.0	<0.2	<0.02	<1.5	<1500
SBP1-034	03/19/93	10.0	<0.2	<0.02	5.8	5800
SBP1-034	03/19/93	15.0	<0.2	<0.02	2.4	2400
SBP1-034	03/23/93	22.0	—	—	8.4	8400
SBP1-034	03/23/93	25.0	—	—	8.6	8600
SBP1-034	03/23/93	30.0	—	—	9.2	9200
SBP1-034	03/23/93	35.0	—	—	7.9	7900
SBP1-034	03/23/93	40.0	—	—	23.3	23300
SBP1-034	03/23/93	45.0	—	—	18.0	18000
SBP1-035	03/19/93	1.0	<0.2	<0.02	2.6	2600
SBP1-035	03/19/93	5.0	<0.2	<0.02	<1.5	<1500
SBP1-035	03/19/93	10.0	<0.2	<0.02	7.5	7500
SBP1-035	03/19/93	15.0	<0.2	<0.02	22.8	22800
SBP1-035	03/19/93	20.0	—	—	5.5	5500
SBP1-035	03/19/93	25.0	<0.2	0.307	17.8	17800
SBP1-035	03/19/93	30.0	2.60	0.243	7.0	7000
SBP1-035	03/19/93	35.0	2.11	0.187	15.7	15700
SBP1-035	03/19/93	40.0	4.36	0.316	3.3	3300
SBP1-036	03/19/93	5.0	62.8	0.342	1140	114000
SBP1-036	03/19/93	10.0	51.3	0.039	572	572000
SBP1-036	03/19/93	15.0	0.904	0.082	642	642000
SBP1-036	03/19/93	20.0	44.7	0.932	887	887000
SBP1-036	03/19/93	25.0	17.9	0.440	332	332000

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

A5000008703

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP1-036	03/19/93	30.0	20.3	0.850	477	477000
SBP1-036	03/19/93	35.0	23.1	0.783	671	671000
SBP1-036	03/19/93	40.0	82.0	0.905	233	233000
SBP1-036B	07/13/93	40.0	14	0.46	370	370000
SBP1-036B	07/13/93	45.0	8.7	0.78	180	180000
SBP1-036B	07/13/93	50.0	9.6	0.49	110	110000
SBP1-037	03/19/93	1.0	<0.2	0.032	21.8	21800
SBP1-037	03/19/93	5.0	33.7	3.40	1700	1700000
SBP1-037	03/19/93	10.0	6.23	0.571	212	212000
SBP1-037	03/19/93	15.0	<0.2	0.528	420	420000
SBP1-037	03/19/93	20.0	0.429	0.044	13.9	13900
SBP1-037	03/19/93	25.0	<0.2	<0.02	6.7	6700
SBP1-037	03/19/93	30.0	3.16	0.352	9.1	9100
SBP1-037	03/19/93	35.0	1.88	0.191	<1.5	<1500
SBP1-037	03/19/93	40.0	3.88	0.374	4.0	4000
SBP1-038	03/19/93	1.0	<0.2	<0.02	19.6	19600
SBP1-038	03/19/93	5.0	<0.2	<0.02	7.5	7500
SBP1-038	03/19/93	10.0	53.1	6.08	92.5	92500
SBP1-038	03/19/93	15.0	10.1	1.69	23.3	23300
SBP1-038	03/19/93	20.0	3.50	0.327	42.9	42900
SBP1-038	03/19/93	25.0	32.8	4.36	53.8	53800
SBP1-038	03/19/93	30.0	50.2	5.23	78.2	78200
SBP1-038	03/19/93	35.0	45.0	6.41	77.9	77900
SBP1-038	03/19/93	40.0	79.1	8.79	169	169000
SBP1-038B	07/13/93	40.0	120	5.3	390	390000
SBP1-038B	07/13/93	45.0	77	1.1	180	180000
SBP1-038B	07/13/93	50.0	43	3.1	96	96000
SBP1-038B	07/13/93	55.0	51	4.7	220	220000
SBP1-039A	03/19/93	1.0	<0.2	3.91	4.8	4800
SBP1-039A	03/19/93	5.0	23.2	2.82	47.8	47800
SBP1-039A	03/19/93	10.0	27.5	3.39	59.4	59400
SBP1-039A	03/19/93	15.0	16.8	2.14	30.6	30600
SBP1-039A	03/19/93	20.0	12.5	1.94	20.2	20200
SBP1-039A	03/19/93	25.0	26.3	2.91	40.3	40300

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless r
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 8A
Date: 09/13

A5000066702

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-039A	03/19/93	30.0	23.2	2.45	43.0	43000
SBP1-039A	03/19/93	35.0	8.95	0.888	12.1	12100
SBP1-039A	03/19/93	40.0	9.45	1.04	18.7	18700
SBP1-039B	03/18/93	1.0	<0.2	<0.02	10.8	10800
SBP1-039B	03/18/93	5.0	0.554	0.043	14.3	14300
SBP1-039B	03/18/93	10.0	(0.113)	(0.010)	10.4	10400
SBP1-039B	03/18/93	15.0	(0.034)	(0.006)	1.7	1700
SBP1-039B	03/18/93	20.0	3.84	0.372	6.9	6900
SBP1-039B	03/18/93	25.0	<0.2	0.219	9.5	9500
SBP1-039B	03/18/93	30.0	<0.2	0.456	12.9	12900
SBP1-039B	03/18/93	35.0	<0.2	0.225	11.6	11600
SBP1-039B	03/18/93	40.0	1.18	0.228	4.7	4700
SBP1-040	03/19/93	1.0	<0.2	0.026	5.7	5700
SBP1-040	03/19/93	5.0	0.339	0.029	6.2	6200
SBP1-040	03/19/93	10.0	<0.2	0.874	6.1	6100
SBP1-040	03/19/93	15.0	4.45	0.606	4.8	4800
SBP1-040	03/19/93	20.0	8.50	1.23	10.0	10000
SBP1-040	03/19/93	25.0	5.94	0.798	8.9	8900
SBP1-040	03/19/93	30.0	3.24	0.440	3.6	3600
SBP1-040	03/19/93	35.0	4.21	0.405	7.2	7200
SBP1-040	03/19/93	40.0	4.41	0.695	13.3	13300
SBP1-041	03/18/93	1.0	<0.2	<0.02	9.2	9200
SBP1-041	03/18/93	6.0	<0.2	0.035	16.7	16700
SBP1-041	03/18/93	10.0	0.508	0.034	13.0	13000
SBP1-041	03/18/93	15.0	0.881	0.103	6.6	6600
SBP1-041	03/18/93	20.0	<0.2	0.109	6.0	6000
SBP1-041	03/18/93	25.0	2.20	0.209	9.6	9600
SBP1-041	03/18/93	30.0	2.11	0.152	7.2	7200
SBP1-041	03/18/93	35.0	3.91	0.286	7.6	7600
SBP1-041	03/18/93	40.0	5.33	0.522	8.0	8000
SBP1-042	04/05/93	1.0	—	—	—	—
SBP1-042	04/05/93	5.0	—	—	—	—
SBP1-042	04/05/93	10.0	—	—	—	—
SBP1-043	04/05/93	1.0	—	—	—	—

< = Not detected at indicated reporting limit — = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 9A of 28A
Date: 09/13/93

STLC (Ca.) AS0000000703

SITE	DATE	DEPTH	Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-043	04/05/93	5.0	—	—	—	—
SBP1-043	04/05/93	10.0	—	—	—	—
SBP1-044	04/05/93	1.0	—	—	—	—
SBP1-044	04/05/93	5.0	—	—	—	—
SBP1-044	04/05/93	10.0	—	—	—	—
SBP1-045	04/08/93	1.0	—	—	—	—
SBP1-045	04/08/93	5.0	—	—	—	—
SBP1-045	04/08/93	10.0	—	—	—	—
SBP1-046	01/21/93	1.0	—	—	—	—
SBP1-046	01/21/93	3.0	—	—	—	—
SBP1-046	01/21/93	8.0	—	—	—	—
SBP1-046	01/21/93	14.0	—	—	—	—
SBP1-047	01/20/93	1.0	—	—	—	—
SBP1-047	01/20/93	3.0	—	—	—	—
SBP1-047	01/20/93	8.0	—	—	—	—
SBP1-047	01/20/93	13.0	—	—	—	—
SBP1-047	01/20/93	18.0	—	—	—	—
SBP1-047	01/20/93	23.0	—	—	—	—
SBP1-047	01/20/93	28.0	—	—	—	—
SBP1-048	04/05/93	1.0	—	—	—	—
SBP1-048	04/05/93	5.0	—	—	—	—
SBP1-048	04/05/93	10.0	—	—	—	—
SBP1-048	04/05/93	15.0	—	—	—	—
SBP1-048	04/05/93	20.0	—	—	—	—
SBP1-049	04/05/93	1.0	—	—	—	—
SBP1-049	04/05/93	10.0	—	—	—	—
SBP1-049	04/05/93	15.0	—	—	—	—
SBP1-049	04/05/93	20.0	—	—	—	—
SBP1-050	03/23/93	2.0	—	—	—	—
SBP1-050	03/23/93	5.0	—	—	—	—
SBP1-050	03/23/93	10.0	—	—	—	—
SBP1-051	03/23/93	2.5	—	—	—	—
SBP1-051	03/23/93	5.0	—	—	—	—
SRP1-051	03/23/93	10.0	—	—	—	—

Not detected at indicated reporting limit — = Not sampled and/or analyzed All values represent total concentrations unless noted
= Highest of Multiple Results 777 = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
- CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 10A
Date: 09/1

A5000000704

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-052	04/08/93	1.0	—	—	10.5	10500
SBP1-052	04/08/93	5.0	—	—	11.5	11500
SBP1-052	04/08/93	10.0	—	—	10.5	10500
SBP1-053	04/07/93	1.0	—	—	—	—
SBP1-053	04/07/93	5.0	—	—	—	—
SBP1-053	04/07/93	10.0	—	—	—	—
SBP1-054	01/29/93	1.0	—	—	—	—
SBP1-054	01/29/93	5.0	—	—	—	—
SBP1-054	01/29/93	10.0	—	—	—	—
SBP1-054	01/29/93	15.0	—	—	—	—
SBP1-054	01/29/93	20.0	—	—	—	—
SBP1-054	01/29/93	25.0	—	—	—	—
SBP1-055	03/22/93	1.0	—	—	12.1	12100
SBP1-055	03/22/93	5.0	—	—	10.7	10700
SBP1-055	03/22/93	10.0	—	—	13.5	13500
SBP1-056	03/29/93	1.0	—	—	6.0	6000
SBP1-056	03/29/93	5.0	—	—	6.4	6400
SBP1-056	03/29/93	10.0	—	—	7.7	7700
SBP1-056	03/29/93	15.0	—	—	7.8	7800
SBP1-056	03/29/93	20.0	—	—	4.3	4300
SBP1-056	03/29/93	26.0	—	—	4.5	4500
SBP1-056	03/29/93	30.0	—	—	5.3	5300
SBP1-056	03/29/93	35.0	—	—	3.0	3000
SBP1-056	03/29/93	40.0	—	—	7.2	7200
SBP1-057A	04/12/93	1.0	—	—	7.9	7900
SBP1-057A	04/12/93	5.0	—	—	7.3	7300
SBP1-058	04/12/93	1.5	—	—	5.5	5500
SBP1-059	03/24/93	1.0	—	—	7.4	7400
SBP1-059	03/24/93	5.0	—	—	10.1	10100
SBP1-059	03/24/93	10.0	—	—	5.4	5400
SBP1-060	01/27/93	1.0	—	—	7.4	7400
SBP1-060	01/28/93	5.0	—	—	3.8	3800
SBP1-060	01/28/93	10.0	—	—	3.3	3300
SBP1-060	01/28/93	15.0	—	—	2.9	2900

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

AS0000000705

SITE	DATE	DEPTH	Chromium (VI) mg/kg	STLC (Ca.) Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-060	01/28/93	20.0	—	—	4.0	4000
SBP1-061	01/25/93	1.0	—	—	13.8	13800
SBP1-061	01/25/93	5.0	—	—	6.1	6100
SBP1-061	01/25/93	10.0	—	—	4.3	4300
SBP1-061	01/25/93	15.0	—	—	5.1	5100
SBP1-061	01/25/93	20.0	—	—	5.3	5300
SBP1-062	01/28/93	1.0	—	—	11.5	11500
SBP1-062	01/28/93	5.0	—	—	3.0	3000
SBP1-062	01/28/93	10.0	—	—	3.2	3200
SBP1-062	01/28/93	15.0	—	—	4.5	4500
SBP1-062	01/28/93	20.0	—	—	3.3	3300
SBP1-063	01/28/93	1.0	—	—	17.5	17500
SBP1-063	01/28/93	5.0	—	—	4.1	4100
SBP1-063	01/28/93	10.0	—	—	4.9	4900
SBP1-063	01/28/93	15.0	—	—	5.7	5700
SBP1-063	01/28/93	20.0	—	—	5.7	5700
SBP1-064	04/06/93	1.0	—	—	—	—
SBP1-064	04/06/93	5.0	—	—	—	—
SBP1-064	04/06/93	17.0	—	—	—	—
SBP1-064	04/06/93	21.5	—	—	—	—
SBP1-064	04/06/93	26.0	—	—	—	—
SBP1-064	04/06/93	30.0	—	—	—	—
SBP1-064	04/06/93	35.0	—	—	—	—
SBP1-064	04/06/93	40.0	—	—	—	—
SBP1-065	01/29/93	1.0	—	—	—	—
SBP1-065	01/29/93	5.0	—	—	—	—
SBP1-065	01/29/93	10.0	—	—	—	—
SBP1-065	01/29/93	15.0	—	—	—	—
SBP1-065	01/29/93	20.0	—	—	—	—
SBP1-065	01/29/93	25.0	—	—	—	—
SBP1-066	06/30/93	20.0	—	—	—	—
SBP1-066	06/30/93	25.0	—	—	—	—
SBP1-066	06/30/93	30.0	—	—	—	—
SBP1-066	06/30/93	35.0	—	—	—	—

— = Not detected at indicated reporting limit — = Not sampled and/or analyzed All values represent total concentrations unless noted
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 12A

Date: 09/13

AS000006706

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-066	06/30/93	40.0	—	—	—	—
SBP1-066	06/30/93	45.0	—	—	—	—
SBP1-066	06/30/93	50.0	—	—	—	—
SBP1-066	06/30/93	55.0	—	—	—	—
SBP1-067	07/08/93	1.0	—	—	—	—
SBP1-067	07/08/93	5.0	—	—	—	—
SBP1-067	07/08/93	10.0	—	—	—	—
SBP1-067	07/08/93	15.0	—	—	—	—
SBP1-067	07/08/93	20.0	—	—	—	—
SBP1-067	07/08/93	25.0	—	—	—	—
SBP1-067	07/08/93	30.0	—	—	—	—
SBP1-067	07/08/93	35.0	—	—	—	—
SBP1-067	07/08/93	40.0	—	—	—	—
SBP1-068	07/09/93	1.0	—	—	—	—
SBP1-068	07/09/93	5.0	—	—	—	—
SBP1-068	07/09/93	10.0	—	—	—	—
SBP1-068	07/09/93	15.0	—	—	—	—
SBP1-068	07/09/93	20.0	—	—	—	—
SBP1-068	07/09/93	25.0	—	—	—	—
SBP1-068	07/09/93	30.0	—	—	—	—
SBP1-068	07/09/93	35.0	—	—	—	—
SBP1-068	07/09/93	40.0	—	—	—	—
SBP1-069	06/30/93	1.0	—	—	—	—
SBP1-069	06/30/93	5.0	—	—	—	—
SBP1-069	06/30/93	10.0	—	—	—	—
SBP1-069	06/30/93	15.0	—	—	—	—
SBP1-069	06/30/93	20.0	—	—	—	—
SBP1-069	06/30/93	25.0	—	—	—	—
SBP1-069	06/30/93	30.0	—	—	—	—
SBP1-069	06/30/93	35.0	—	—	—	—
SBP1-069	06/30/93	40.0	—	—	—	—
SBP1-070	07/12/93	1.0	—	—	—	—
SBP1-070	07/12/93	5.0	—	—	—	—
SBP1-070	07/12/93	10.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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Date: 09/13/93

AS000068707

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-070	07/12/93	15.0	—	—	—	—
SBP1-070	07/12/93	20.0	—	—	—	—
SBP1-071	07/12/93	1.0	—	—	—	—
SBP1-071	07/12/93	5.0	—	—	—	—
SBP1-071	07/12/93	10.0	—	—	—	—
SBP1-071	07/12/93	15.0	—	—	—	—
SBP1-071	07/12/93	20.0	—	—	—	—
SBP1-072	07/12/93	1.0	—	—	—	—
SBP1-072	07/12/93	5.0	—	—	—	—
SBP1-072	07/12/93	10.0	—	—	—	—
SBP1-072	07/12/93	15.0	—	—	—	—
SBP1-072	07/12/93	20.0	—	—	—	—
SBP1-073	07/13/93	5.0	120	16	250	250000
SBP1-073	07/13/93	10.0	170	16	340	340000
SBP1-073	07/13/93	15.0	100	13	140	140000
SBP1-073	07/13/93	20.0	370	21	1000	1000000
SBP1-073	07/13/93	25.0	220	19	380	380000
SBP1-073	07/13/93	30.0	220	21	220	220000
SBP1-073	07/13/93	35.0	170	4.3	790	790000
SBP1-073	07/13/93	40.0	220	18	240	240000
SBP1-073	07/13/93	45.0	82	6.5	130	130000
SBP1-073	07/13/93	50.0	49	0.40	60	60000
SBP1-075	07/13/93	5.0	36	4.0	87	87000
SBP1-075	07/13/93	10.0	17	2.4	47	47000
SBP1-075	07/13/93	15.0	21	2.3	35	35000
SBP1-075	07/13/93	20.0	6.1	0.41	16	16000
SBP1-075	07/13/93	25.0	6.6	1.1	22	22000
SBP1-075	07/13/93	30.0	7.7	1.2	20	20000
SBP1-075	07/13/93	35.0	2.5	0.090	12	12000
SBP1-075	07/13/93	40.0	9.1	0.80	16	16000
SBP1-075	07/13/93	45.0	4.7	0.80	21	21000
SBP1-075	07/13/93	50.0	20	2.0	27	27000
SBP1-076	07/06/93	1.0	—	—	—	—
SBP1-076	07/06/93	5.0	—	—	—	—

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless no
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 14A
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AS000066708

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-076	07/06/93	10.0	—	—	—	—
SBP1-076	07/06/93	15.0	—	—	—	—
SBP1-076	07/06/93	20.0	—	—	—	—
SBP1-076	07/06/93	25.0	—	—	—	—
SBP1-076	07/06/93	30.0	—	—	—	—
SBP1-076	07/06/93	35.0	—	—	—	—
SBP1-076	07/06/93	40.0	—	—	—	—
SBP1-076	07/06/93	45.0	—	—	—	—
SBP1-077	07/06/93	1.0	—	—	—	—
SBP1-077	07/06/93	5.0	—	—	—	—
SBP1-077	07/06/93	10.0	—	—	—	—
SBP1-077	07/06/93	15.0	—	—	—	—
SBP1-077	07/06/93	20.0	—	—	—	—
SBP1-077	07/06/93	25.0	—	—	—	—
SBP1-077	07/06/93	30.0	—	—	—	—
SBP1-077	07/06/93	35.0	—	—	—	—
SBP1-077	07/06/93	40.0	—	—	—	—
SBP1-078	07/06/93	1.0	—	—	—	—
SBP1-078	07/06/93	5.0	—	—	—	—
SBP1-078	07/06/93	10.0	—	—	—	—
SBP1-078	07/06/93	15.0	—	—	—	—
SBP1-078	07/06/93	20.0	—	—	—	—
SBP1-078	07/06/93	25.0	—	—	—	—
SBP1-078	07/06/93	30.0	—	—	—	—
SBP1-078	07/06/93	35.0	—	—	—	—
SBP1-078	07/06/93	40.0	—	—	—	—
SBP1-079	07/07/93	1.0	—	—	—	—
SBP1-079	07/07/93	5.0	—	—	—	—
SBP1-079	07/07/93	12.0	—	—	—	—
SBP1-079	07/07/93	15.0	—	—	—	—
SBP1-079	07/07/93	20.0	—	—	—	—
SBP1-079	07/07/93	25.0	—	—	—	—
SBP1-079	07/07/93	30.0	—	—	—	—
SBP1-079	07/07/93	35.0	—	—	—	—

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= Highest of Multiple Results 777 = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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150000-22

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-46	07/14/93	35.0	—	—	—	—
SBSW-46	07/14/93	40.0	—	—	—	—
SBSW-46	07/14/93	45.0	—	—	—	—
SBSW-46	07/14/93	50.0	—	—	—	—
SBSW-46	07/14/93	55.0	—	—	—	—
SBSW-46	07/14/93	60.0	—	—	—	—
SBT-01	03/17/93	1.0	—	—	—	—
SBT-01	03/17/93	5.0	—	—	—	—
SBT-02	03/17/93	1.0	—	—	—	—
SBT-02	03/17/93	5.0	—	—	—	—
SBT-03	03/18/93	1.0	—	—	—	—
SBT-03	03/18/93	5.0	—	—	—	—
SBT-04	03/18/93	1.0	—	—	—	—
SBT-04	03/18/93	5.0	—	—	—	—
SBT-05	03/17/93	1.0	—	—	—	—
SBT-05	03/17/93	5.0	—	—	—	—
SBT-06	04/09/93	1.0	—	—	—	—
SBT-06	04/09/93	5.0	—	—	—	—
SBT-07	04/09/93	1.0	—	—	—	—
SBT-07	04/09/93	5.0	—	—	—	—
SBT-08	04/09/93	1.0	—	—	—	—
SBT-08	04/09/93	5.0	—	—	—	—
SBT-09	04/09/93	1.0	—	—	—	—
SBT-09	04/09/93	5.0	—	—	—	—
SBT-10	04/09/93	1.0	—	—	—	—
SBT-10	04/09/93	5.0	—	—	—	—
SBT-11	04/09/93	1.0	—	—	—	—
SBT-12	04/09/93	1.0	—	—	—	—
SBT-12	04/09/93	5.0	—	—	—	—
SBT-13	04/09/93	1.0	—	—	—	—
SBT-13	04/09/93	5.0	—	—	—	—
SBT-13	04/09/93	10.0	—	—	—	—
SBT-13	04/09/93	15.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS00000572

STLC (Ca.)

SITE	DATE	DEPTH	Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-38	06/29/93	10.0	—	—	—	—
SBSW-38	06/29/93	15.0	—	—	—	—
SBSW-38	06/29/93	20.0	—	—	—	—
SBSW-38	06/29/93	25.0	—	—	—	—
SBSW-38	06/29/93	30.0	—	—	—	—
SBSW-38	06/29/93	35.0	—	—	—	—
SBSW-38	06/29/93	40.0	—	—	—	—
SBSW-39	06/29/93	1.0	—	—	—	—
SBSW-39	06/29/93	5.0	—	—	—	—
SBSW-39	06/29/93	10.0	—	—	—	—
SBSW-40	06/29/93	1.0	—	—	—	—
SBSW-40	06/29/93	5.0	—	—	—	—
SBSW-40	06/29/93	10.0	—	—	—	—
SBSW-41	06/29/93	1.0	—	—	—	—
SBSW-41	06/29/93	5.0	—	—	—	—
SBSW-41	06/29/93	10.0	—	—	—	—
SBSW-42	06/30/93	1.0	—	—	—	—
SBSW-42	06/30/93	5.0	—	—	—	—
SBSW-42	06/30/93	10.0	—	—	—	—
SBSW-43	06/30/93	1.0	—	—	—	—
SBSW-43	06/30/93	5.0	—	—	—	—
SBSW-43	06/30/93	10.0	—	—	—	—
SBSW-44	06/30/93	1.0	—	—	—	—
SBSW-44	06/30/93	5.0	—	—	—	—
SBSW-44	06/30/93	10.0	—	—	—	—
SBSW-45	06/30/93	1.0	—	—	—	—
SBSW-45	06/30/93	5.0	—	—	—	—
SBSW-45	06/30/93	10.0	—	—	—	—
SBSW-46	07/14/93	5.0	—	—	—	—
SBSW-46	07/14/93	10.0	—	—	—	—
SBSW-46	07/14/93	15.0	—	—	—	—
SBSW-46	07/14/93	20.0	—	—	—	—
SBSW-46	07/14/93	25.0	—	—	—	—
SBSW-46	07/14/93	30.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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A5000069720

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-33	01/19/93	60.0	—	—	—	—
SBSW-34	01/14/93	1.0	—	—	—	—
SBSW-34	01/14/93	5.0	—	—	—	—
SBSW-34	01/14/93	10.0	—	—	—	—
SBSW-34	01/14/93	15.0	—	—	—	—
SBSW-34	01/14/93	20.0	—	—	—	—
SBSW-34	01/14/93	25.0	—	—	—	—
SBSW-34	01/14/93	30.0	—	—	—	—
SBSW-35	01/21/93	1.0	—	—	—	—
SBSW-35	01/21/93	5.0	—	—	—	—
SBSW-35	01/21/93	10.0	—	—	—	—
SBSW-35	01/21/93	15.0	—	—	—	—
SBSW-35	01/21/93	20.0	—	—	—	—
SBSW-35	01/21/93	25.0	—	—	—	—
SBSW-36	06/29/93	1.0	—	—	—	—
SBSW-36	06/29/93	5.0	—	—	—	—
SBSW-36	06/29/93	10.0	—	—	—	—
SBSW-36	06/29/93	15.0	—	—	—	—
SBSW-36	06/29/93	20.0	—	—	—	—
SBSW-36	06/29/93	25.0	—	—	—	—
SBSW-36	06/29/93	30.0	—	—	—	—
SBSW-36	06/29/93	35.0	—	—	—	—
SBSW-36	06/29/93	40.0	—	—	—	—
SBSW-37	06/29/93	1.0	—	—	—	—
SBSW-37	06/29/93	5.0	—	—	—	—
SBSW-37	06/29/93	10.0	—	—	—	—
SBSW-37	06/29/93	15.0	—	—	—	—
SBSW-37	06/29/93	20.0	—	—	—	—
SBSW-37	06/29/93	25.0	—	—	—	—
SBSW-37	06/29/93	30.0	—	—	—	—
SBSW-37	06/29/93	35.0	—	—	—	—
SBSW-37	06/29/93	40.0	—	—	—	—
SBSW-38	06/29/93	1.0	—	—	—	—
SBSW-38	06/29/93	5.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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A5000000719

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-26	03/23/93	10.0	—	—	8.4	8400
SBSW-27	01/14/93	1.0	—	—	2.8	2800
SBSW-27	01/14/93	5.0	—	—	2.2	2200
SBSW-27	01/14/93	10.0	—	—	<1.5	<1500
SBSW-28	03/22/93	1.0	—	—	11.2	11200
SBSW-28	03/22/93	5.0	—	—	10.8	10800
SBSW-28	03/22/93	10.0	—	—	8.5	8500
SBSW-29	03/22/93	1.0	—	—	4.4	4400
SBSW-29	03/22/93	5.0	—	—	12.1	12100
SBSW-29	03/22/93	10.0	—	—	18.5	18500
SBSW-30	01/21/93	1.0	—	—	—	—
SBSW-30	01/21/93	5.0	—	—	—	—
SBSW-30	01/21/93	10.0	—	—	—	—
SBSW-30	01/21/93	15.0	—	—	—	—
SBSW-30	01/21/93	20.0	—	—	—	—
SBSW-30	01/21/93	25.0	—	—	—	—
SBSW-31	01/19/93	1.0	—	—	—	—
SBSW-31	01/19/93	5.0	—	—	—	—
SBSW-31	01/19/93	10.0	—	—	—	—
SBSW-32	03/24/93	1.0	—	—	—	—
SBSW-32	03/24/93	5.0	—	—	—	—
SBSW-32	03/24/93	10.0	—	—	—	—
SBSW-33	01/19/93	1.0	—	—	—	—
SBSW-33	01/19/93	5.0	—	—	—	—
SBSW-33	01/19/93	10.0	—	—	—	—
SBSW-33	01/19/93	15.0	—	—	—	—
SBSW-33	01/19/93	20.0	—	—	—	—
SBSW-33	01/19/93	25.0	—	—	—	—
SBSW-33	01/19/93	30.0	—	—	—	—
SBSW-33	01/19/93	35.0	—	—	—	—
SBSW-33	01/19/93	40.0	—	—	—	—
SBSW-33	01/19/93	45.0	—	—	—	—
SBSW-33	01/19/93	50.0	—	—	—	—
SBSW-33	01/19/93	55.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000000718

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-16	03/17/93	10.0	—	—	—	—
SBSW-17	03/17/93	1.0	—	—	—	—
SBSW-17	03/17/93	5.0	—	—	—	—
SBSW-17	03/17/93	10.0	—	—	—	—
SBSW-18	03/17/93	1.0	—	—	—	—
SBSW-18	03/17/93	5.0	—	—	—	—
SBSW-18	03/17/93	10.0	—	—	—	—
SBSW-19	01/19/93	1.0	—	—	—	—
SBSW-19	01/19/93	5.0	—	—	—	—
SBSW-19	01/19/93	10.0	—	—	—	—
SBSW-19	01/19/93	15.0	—	—	—	—
SBSW-20	01/19/93	1.0	—	—	—	—
SBSW-20	01/19/93	5.0	—	—	—	—
SBSW-20	01/19/93	10.0	—	—	—	—
SBSW-20	01/19/93	15.0	—	—	—	—
SBSW-21	01/19/93	1.0	—	—	—	—
SBSW-21	01/19/93	5.0	—	—	—	—
SBSW-21	01/19/93	10.0	—	—	—	—
SBSW-21	01/19/93	15.0	—	—	—	—
SBSW-22	01/20/93	1.0	—	—	—	—
SBSW-22	01/20/93	5.0	—	—	—	—
SBSW-22	01/20/93	10.0	—	—	—	—
SBSW-22	01/20/93	15.0	—	—	—	—
SBSW-23	03/24/93	1.0	—	—	—	—
SBSW-23	03/24/93	5.0	—	—	—	—
SBSW-23	03/24/93	10.0	—	—	—	—
SBSW-24	03/23/93	1.0	—	—	9.5	9500
SBSW-24	03/23/93	5.0	—	—	7.5	7500
SBSW-24	03/23/93	10.0	—	—	6.9	6900
SBSW-25	01/14/93	1.0	—	—	5.4	5400
SBSW-25	01/14/93	5.0	—	—	<1.5	<1500
SBSW-25	01/14/93	10.0	—	—	13.5	13500
SBSW-26	03/23/93	1.0	—	—	13.5	13500
SBSW-26	03/23/93	5.0	—	—	21.8	21800

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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45000003717

STLC (Ca.)

SITE	DATE	DEPTH	Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBSW-08	01/26/93	10.0	—	—	—	—
SBSW-09	03/24/93	1.0	—	—	—	—
SBSW-09	03/24/93	5.0	—	—	—	—
SBSW-09	03/24/93	10.0	—	—	—	—
SBSW-10	03/24/93	1.0	—	—	—	—
SBSW-10	03/24/93	5.0	—	—	—	—
SBSW-10	03/24/93	10.0	—	—	—	—
SBSW-11	02/01/93	1.0	—	—	—	—
SBSW-11	02/01/93	5.0	—	—	—	—
SBSW-11	02/01/93	10.0	—	—	—	—
SBSW-11	02/01/93	15.0	—	—	—	—
SBSW-11	02/01/93	20.0	—	—	—	—
SBSW-12	01/26/93	1.0	—	—	—	—
SBSW-12	01/26/93	5.0	—	—	—	—
SW-12	01/26/93	10.0	—	—	—	—
SBSW-12	01/26/93	15.0	—	—	—	—
SBSW-12	01/26/93	20.0	—	—	—	—
SBSW-13	01/26/93	1.0	—	—	—	—
SBSW-13	01/26/93	5.0	—	—	—	—
SBSW-13	01/26/93	10.0	—	—	—	—
SBSW-13	01/26/93	20.0	—	—	—	—
SBSW-14	03/17/93	1.0	—	—	—	—
SBSW-14	03/17/93	5.0	—	—	—	—
SBSW-14	03/17/93	10.0	—	—	—	—
SBSW-15	03/17/93	6.0	—	—	—	—
SBSW-15	03/17/93	11.0	—	—	—	—
SBSW-15	03/17/93	16.0	—	—	—	—
SBSW-15B	06/29/93	20.0	—	—	—	—
SBSW-15B	06/29/93	25.0	—	—	—	—
SBSW-15B	06/29/93	30.0	—	—	—	—
SBSW-15B	06/29/93	35.0	—	—	—	—
SBSW-15B	06/29/93	40.0	—	—	—	—
SBSW-16	03/17/93	1.0	—	—	—	—
SBSW-16	03/17/93	5.0	—	—	—	—

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

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AS000068716

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP2-30	07/08/93	1.0	—	—	—	—
SBP2-30	07/08/93	5.0	—	—	—	—
SBP2-30	07/08/93	10.0	—	—	—	—
SBP2-30	07/08/93	15.0	—	—	—	—
SBSP-01	01/11/93	1.0	—	—	—	—
SBSP-01	01/11/93	5.0	—	—	—	—
SBSP-01	01/11/93	10.0	—	—	—	—
SBSP-02	01/11/93	1.0	—	—	—	—
SBSP-02	01/11/93	5.0	—	—	—	—
SBSP-02	01/11/93	10.0	—	—	—	—
SBSP-03	01/11/93	1.0	—	—	—	—
SBSP-03	01/11/93	5.0	—	—	—	—
SBSP-03	01/11/93	10.0	—	—	—	—
SBSW-01	01/26/93	1.0	—	—	—	—
SBSW-01	01/26/93	5.0	—	—	—	—
SBSW-01	01/26/93	10.0	—	—	—	—
SBSW-02	01/21/93	1.0	—	—	—	—
SBSW-02	01/21/93	5.0	—	—	—	—
SBSW-02	01/21/93	10.0	—	—	—	—
SBSW-03	01/21/93	0.0	—	—	—	—
SBSW-03	01/21/93	1.0	—	—	—	—
SBSW-03	01/21/93	5.0	—	—	—	—
SBSW-03	01/21/93	10.0	—	—	—	—
SBSW-04	01/26/93	1.0	—	—	—	—
SBSW-04	01/26/93	5.0	—	—	—	—
SBSW-04	01/26/93	10.0	—	—	—	—
SBSW-06	03/24/93	1.0	—	—	—	—
SBSW-06	03/24/93	5.0	—	—	—	—
SBSW-06	03/24/93	10.0	—	—	—	—
SBSW-07	03/24/93	1.0	—	—	—	—
SBSW-07	03/24/93	5.0	—	—	—	—
SBSW-07	03/24/93	10.0	—	—	—	—
SBSW-08	01/26/93	1.0	—	—	—	—
SBSW-08	01/26/93	5.0	—	—	—	—

< = Not detected at indicated reporting limit — = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 21A of 2
Date: 09/13/93

A5000000715

SITE	DATE	DEPTH	Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP2-23A	03/17/93	10.0	—	—	7.0	7000
SBP2-23A	03/17/93	15.0	—	—	<9.9	<9900
SBP2-23A	03/17/93	20.0	—	—	5.8	5800
SBP2-23B	03/17/93	1.0	—	—	23.5	23500
SBP2-23B	03/17/93	5.0	—	—	202	202000
SBP2-23B	03/17/93	10.0	—	—	16.0	16000
SBP2-23B	03/17/93	15.0	—	—	37.4	37400
SBP2-23B	03/17/93	20.0	—	—	6.4	6400
SBP2-24	03/18/93	1.0	—	—	—	—
SBP2-24	03/18/93	5.0	—	—	—	—
SBP2-24	03/18/93	10.0	—	—	—	—
SBP2-25	07/07/93	1.0	<0.25	—	16	16000
SBP2-25	07/07/93	5.0	<0.25	—	2.8	2800
SBP2-25	07/07/93	10.0	<0.25	—	4.4	4400
SBP2-25	07/07/93	15.0	<0.25	—	5.8	5800
SBP2-25	07/07/93	20.0	<0.25	—	9.0	9000
SBP2-26	07/07/93	1.0	<0.25	—	20	20000
SBP2-26	07/07/93	5.0	<0.25	—	5.4	5400
SBP2-26	07/07/93	10.0	<0.25	—	4.9	4900
SBP2-26	07/07/93	15.0	<0.25	—	5.0	5000
SBP2-26	07/07/93	20.0	<0.25	—	2.3	2300
SBP2-27	07/07/93	1.0	<0.25	—	63	63000
SBP2-27	07/07/93	5.0	0.70	—	3.7	3700
SBP2-27	07/07/93	10.0	0.34	—	5.8	5800
SBP2-27	07/07/93	15.0	0.89	—	17	17000
SBP2-27	07/07/93	20.0	0.90	—	11	11000
SBP2-28	07/08/93	1.0	—	—	—	—
SBP2-28	07/08/93	5.0	—	—	—	—
SBP2-28	07/08/93	10.0	—	—	—	—
SBP2-28	07/08/93	15.0	—	—	—	—
SBP2-29	07/08/93	1.0	—	—	—	—
SBP2-29	07/08/93	5.0	—	—	—	—
SBP2-29	07/08/93	10.0	—	—	—	—
SBP2-29	07/08/93	15.0	—	—	—	—

— = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless noted
= Highest of Multiple Results ??? = Duplicate Results

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A50000065714

TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 20A c
Date: 09/13/

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP2-16	03/16/93	15.0	—	—	1.8	1800
SBP2-16	03/16/93	20.0	—	—	1.8	1800
SBP2-16	03/16/93	25.0	—	—	2.8	2800
SBP2-16	03/16/93	32.0	—	—	6.4	6400
SBP2-16	03/16/93	35.0	—	—	7.4	7400
SBP2-16	03/16/93	40.0	—	—	(1.4)	(1400)
SBP2-16	03/16/93	45.0	—	—	2.5	2500
SBP2-16	03/16/93	50.0	—	—	11.9	11900
SBP2-16	03/16/93	55.0	—	—	14.5	14500
SBP2-17	01/28/93	1.0	—	—	45.3	45300
SBP2-17	01/28/93	5.0	—	—	7.6	7600
SBP2-17	01/28/93	10.0	—	—	4.3	4300
SBP2-18	03/17/93	1.0	—	—	95.2	95200
SBP2-18	03/17/93	5.0	—	—	59.4	59400
SBP2-18	03/17/93	10.0	—	—	59.7	59700
SBP2-18	03/17/93	15.0	—	—	15.6	15600
SBP2-18	03/17/93	20.0	—	—	12.1	12100
SBP2-19	03/17/93	1.0	—	—	37.5	37500
SBP2-19	03/17/93	5.0	—	—	121	121000
SBP2-19	03/17/93	10.0	—	—	7.7	7700
SBP2-19	03/17/93	15.0	—	—	14.2	14200
SBP2-19	03/17/93	20.0	—	—	7.2	7200
SBP2-20	01/22/93	3.5	—	—	12.0	12000
SBP2-20	01/22/93	7.0	—	—	<1.5	<1500
SBP2-20	01/22/93	12.0	—	—	<1.5	<1500
SBP2-20	01/22/93	17.0	—	—	7.6	7600
SBP2-20	01/22/93	22.0	—	—	1.6	1600
SBP2-21	02/01/93	3.0	—	—	16.0	16000
SBP2-21	02/01/93	7.0	—	—	<1.5	<1500
SBP2-21	02/01/93	12.0	—	—	5.6	5600
SBP2-21	02/01/93	17.0	—	—	20.5	20500
SBP2-21	02/01/93	22.0	—	—	6.0	6000
SBP2-23A	03/17/93	1.0	—	—	12.9	12900
SBP2-23A	03/17/93	5.0	—	—	22.2	22200

< = Not detected at indicated reporting limit — = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 19A of
Date: 09/13/93

45600066713

SITE	DATE	DEPTH	STLC (Ca.)		Chromium (total) mg/kg	Chromium (total) ug/l
			Chromium (VI) mg/kg	Chromium (VI) mg/l		
SBP2-12	03/22/93	40.0	—	—	—	—
SBP2-12	03/22/93	45.0	—	—	—	—
SBP2-12	03/22/93	50.0	—	—	—	—
SBP2-12	03/22/93	55.0	—	—	—	—
SBP2-13	02/02/93	1.0	—	—	—	—
SBP2-13	02/02/93	5.0	—	—	—	—
SBP2-13	02/02/93	10.0	—	—	—	—
SBP2-13	02/02/93	15.0	—	—	—	—
SBP2-13	02/02/93	20.0	—	—	—	—
SBP2-13	02/02/93	27.0	—	—	—	—
SBP2-13	02/02/93	30.0	—	—	—	—
SBP2-13	02/02/93	35.0	—	—	—	—
SBP2-13	02/02/93	40.0	—	—	—	—
SBP2-13	02/02/93	45.0	—	—	—	—
SBP2-13	02/02/93	52.5	—	—	—	—
SBP2-13	02/02/93	55.0	—	—	—	—
SBP2-14	01/22/93	1.0	—	—	3.4	3400
SBP2-14	01/22/93	5.0	—	—	1.5	1500
SBP2-14	01/22/93	10.0	—	—	<1.5	<1500
SBP2-14	01/22/93	15.0	—	—	2.0	2000
SBP2-14	01/22/93	20.0	—	—	<1.5	<1500
SBP2-14	01/22/93	25.0	—	—	25.5	25500
SBP2-14	01/22/93	30.0	—	—	<1.5	<1500
SBP2-14	01/22/93	35.0	—	—	<1.5	<1500
SBP2-14	01/22/93	40.0	—	—	<1.5	<1500
SBP2-14	01/22/93	45.0	—	—	<1.5	<1500
SBP2-14	01/22/93	50.0	—	—	<1.5	<1500
SBP2-14	01/22/93	55.0	—	—	6.6	6600
SBP2-15	03/15/93	1.0	—	—	6.9	6900
SBP2-15	03/15/93	5.0	—	—	<1.5	<1500
SBP2-15	03/15/93	10.0	—	—	3.4	3400
SBP2-16	03/16/93	1.0	—	—	7.5	7500
SBP2-16	03/16/93	5.0	—	—	2.0	2000
SBP2-16	03/16/93	10.0	—	—	12.0	12000

< = Not detected at indicated reporting limit --- = Not sampled and/or analyzed All values represent total concentrations unless
= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY

EPA METHODS 7196 AND 7190

Page: 18A

Date: 09/13

AS000066712

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP2-01	01/21/93	5.0	—	—	3.4	3400
SBP2-01	01/21/93	10.0	—	—	3.8	3800
SBP2-02	01/21/93	1.0	—	—	3.0	3000
SBP2-02	01/21/93	5.0	—	—	1.9	1900
SBP2-02	01/21/93	10.0	—	—	1.9	1900
SBP2-03	03/17/93	1.0	—	—	—	—
SBP2-03	03/17/93	5.0	—	—	—	—
SBP2-03	03/17/93	10.0	—	—	—	—
SBP2-04	03/17/93	1.0	—	—	—	—
SBP2-04	03/17/93	5.0	—	—	—	—
SBP2-04	03/17/93	10.0	—	—	—	—
SBP2-05	01/22/93	1.0	—	—	—	—
SBP2-05	01/22/93	5.0	—	—	—	—
SBP2-05	01/22/93	10.0	—	—	—	—
SBP2-06	03/15/93	1.0	—	—	1.8	1800
SBP2-06	03/15/93	5.0	—	—	2.3	2300
SBP2-06	03/15/93	10.0	—	—	2.0	2000
SBP2-07	03/15/93	1.0	—	—	3.4	3400
SBP2-07	03/15/93	5.0	—	—	5.7	5700
SBP2-07	03/15/93	10.0	—	—	2.2	2200
SBP2-08	03/15/93	1.0	—	—	—	—
SBP2-08	03/15/93	5.0	—	—	—	—
SBP2-08	03/15/93	10.0	—	—	—	—
SBP2-09	03/15/93	1.0	—	—	—	—
SBP2-09	03/15/93	5.0	—	—	—	—
SBP2-09	03/15/93	10.0	—	—	—	—
SBP2-12	03/22/93	1.0	—	—	—	—
SBP2-12	03/22/93	5.0	—	—	—	—
SBP2-12	03/22/93	10.0	—	—	—	—
SBP2-12	03/22/93	15.0	—	—	—	—
SBP2-12	03/22/93	20.0	—	—	—	—
SBP2-12	03/22/93	25.0	—	—	—	—
SBP2-12	03/22/93	30.0	—	—	—	—
SBP2-12	03/22/93	35.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 17A
Date: 09/13

AS000066711

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-095	07/02/93	30.0	—	—	—	—
SBP1-096	07/02/93	1.0	—	—	—	—
SBP1-096	07/02/93	5.0	—	—	—	—
SBP1-096	07/02/93	10.0	—	—	—	—
SBP1-096	07/02/93	15.0	—	—	—	—
SBP1-096	07/02/93	20.0	—	—	—	—
SBP1-096	07/02/93	25.0	—	—	—	—
SBP1-096	07/02/93	30.0	—	—	—	—
SBP1-097	07/02/93	1.0	—	—	—	—
SBP1-097	07/02/93	5.0	—	—	—	—
SBP1-097	07/02/93	10.0	—	—	—	—
SBP1-097	07/02/93	15.0	—	—	—	—
SBP1-097	07/02/93	20.0	—	—	—	—
SBP1-097	07/02/93	25.0	—	—	—	—
SBP1-097	07/02/93	30.0	—	—	—	—
SBP1-098	07/08/93	20.0	—	—	—	—
SBP1-098	07/08/93	25.0	—	—	—	—
SBP1-098	07/08/93	30.0	—	—	—	—
SBP1-099	07/08/93	20.0	—	—	—	—
SBP1-099	07/08/93	25.0	—	—	—	—
SBP1-099	07/08/93	30.0	—	—	—	—
SBP1-100	07/12/93	15.0	—	—	—	—
SBP1-100	07/12/93	20.0	—	—	—	—
SBP1-100	07/12/93	25.0	—	—	—	—
SBP1-100	07/12/93	30.0	—	—	—	—
SBP1-101	07/12/93	15.0	—	—	—	—
SBP1-101	07/12/93	20.0	—	—	—	—
SBP1-101	07/12/93	25.0	—	—	—	—
SBP1-101	07/12/93	30.0	—	—	—	—
SBP1-102	07/12/93	15.0	—	—	—	—
SBP1-102	07/12/93	20.0	—	—	—	—
SBP1-102	07/12/93	25.0	—	—	—	—
SBP1-102	07/12/93	31.0	—	—	—	—
SBP2-01	01/21/93	1.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 16A

Date: 09/1

A5000066710

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VI) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-090	07/07/93	10.0	—	—	—	—
SBP1-090	07/07/93	15.0	—	—	—	—
SBP1-090	07/07/93	20.0	—	—	—	—
SBP1-090	07/07/93	25.0	—	—	—	—
SBP1-090	07/07/93	30.0	—	—	—	—
SBP1-091	07/02/93	1.0	—	—	—	—
SBP1-091	07/02/93	5.0	—	—	—	—
SBP1-091	07/02/93	10.0	—	—	—	—
SBP1-091	07/02/93	15.0	—	—	—	—
SBP1-091	07/02/93	20.0	—	—	—	—
SBP1-091	07/02/93	25.0	—	—	—	—
SBP1-091	07/02/93	30.0	—	—	—	—
SBP1-092	07/02/93	1.0	—	—	—	—
SBP1-092	07/02/93	5.0	—	—	—	—
SBP1-092	07/02/93	10.0	—	—	—	—
SBP1-092	07/02/93	15.0	—	—	—	—
SBP1-092	07/02/93	20.0	—	—	—	—
SBP1-092	07/02/93	25.0	—	—	—	—
SBP1-092	07/02/93	30.0	—	—	—	—
SBP1-093	07/02/93	1.0	—	—	—	—
SBP1-093	07/02/93	5.0	—	—	—	—
SBP1-093	07/02/93	10.0	—	—	—	—
SBP1-093	07/02/93	15.0	—	—	—	—
SBP1-094	07/02/93	10.0	—	—	—	—
SBP1-094	07/02/93	15.0	—	—	—	—
SBP1-094	07/02/93	20.0	—	—	—	—
SBP1-094	07/02/93	25.0	—	—	—	—
SBP1-094	07/02/93	30.0	—	—	—	—
SBP1-095	07/02/93	1.0	—	—	—	—
SBP1-095	07/02/93	5.0	—	—	—	—
SBP1-095	07/02/93	10.0	—	—	—	—
SBP1-095	07/02/93	15.0	—	—	—	—
SBP1-095	07/02/93	20.0	—	—	—	—
SBP1-095	07/02/93	25.0	—	—	—	—

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= Highest of Multiple Results ??? = Duplicate Results

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TABLE 2C
LABORATORY RESULTS FOR SOIL SAMPLES
CHROMIUM BY
EPA METHODS 7196 AND 7190

Page: 15A of
Date: 09/13/9

AS000063709

SITE	DATE	DEPTH	STLC (Ca.)			
			Chromium (VI) mg/kg	Chromium (VII) mg/l	Chromium (total) mg/kg	Chromium (total) ug/l
SBP1-079	07/07/93	40.0	—	—	—	—
SBP1-080	07/01/93	1.0	—	—	—	—
SBP1-080	07/01/93	5.0	—	—	—	—
SBP1-080	07/01/93	10.0	—	—	—	—
SBP1-081	07/01/93	1.0	—	—	—	—
SBP1-081	07/01/93	5.0	—	—	—	—
SBP1-081	07/01/93	10.0	—	—	—	—
SBP1-082	07/01/93	1.0	—	—	—	—
SBP1-082	07/01/93	5.0	—	—	—	—
SBP1-082	07/01/93	10.0	—	—	—	—
SBP1-083	07/01/93	1.0	—	—	—	—
SBP1-083	07/01/93	5.0	—	—	—	—
SBP1-083	07/01/93	10.0	—	—	—	—
SBP1-084	07/01/93	1.0	—	—	—	—
SBP1-084	07/01/93	5.0	—	—	—	—
SBP1-084	07/01/93	10.0	—	—	—	—
SBP1-085	07/01/93	1.0	—	—	—	—
SBP1-085	07/01/93	5.0	—	—	—	—
SBP1-085	07/01/93	10.0	—	—	—	—
SBP1-085	07/01/93	15.0	—	—	—	—
SBP1-086	07/01/93	1.0	—	—	—	—
SBP1-086	07/01/93	5.0	—	—	—	—
SBP1-086	07/01/93	10.0	—	—	—	—
SBP1-087	07/07/93	1.0	—	—	—	—
SBP1-087	07/07/93	5.0	—	—	—	—
SBP1-087	07/07/93	10.0	—	—	—	—
SBP1-088	07/02/93	1.0	—	—	—	—
SBP1-088	07/02/93	5.0	—	—	—	—
SBP1-088	07/02/93	10.0	—	—	—	—
SBP1-089	07/07/93	1.0	—	—	—	—
SBP1-089	07/07/93	5.0	—	—	—	—
SBP1-089	07/07/93	10.0	—	—	—	—
SBP1-090	07/07/93	1.0	—	—	—	—
SBP1-090	07/07/93	5.0	—	—	—	—

= Not detected at indicated reporting limit

— = Not sampled and/or analyzed

All values represent total concentrations unless

= Highest of Multiple Results ??? = Duplicate Results

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PARSONS

100 West Walnut Street • Pasadena, California 91124 • (626) 440-2000 • Fax: (626) 440-2630 • www.parsons.com

July 31, 2003

Mr. Mohammad Zaidi
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Re: Honeywell North Hollywood Soil Vapor Extraction Performance Report, Second Quarter 2003 (RWQCB File No. 111.0180)

Dear Mr. Zaidi:

Enclosed please find two copies of the above-referenced soil vapor extraction performance report for the Second Quarter 2003. As you review the report, call me at (626) 440-6102 if you have any questions.

Sincerely,

PARSONS



Stuart Michener, R.G.
Project Manager

Enclosure

cc: Benny DeHghi (Honeywell)
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Project File



001875

**SOIL VAPOR EXTRACTION
PERFORMANCE REPORT
Second Quarter 2003**

**Honeywell North Hollywood
11668 Sherman Way
North Hollywood, California**

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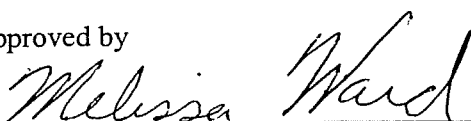
JULY 31, 2003

SIGNATURE PAGE

for

**SOIL VAPOR EXTRACTION PERFORMANCE
REPORT
Second Quarter 2003****Honeywell North Hollywood
11668 Sherman Way
North Hollywood, California****July 31, 2003**

Approved by

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ACRONYMS AND ABBREVIATIONS

AQMD	South Coast Air Quality Management District
ft bgs	feet below ground surface
ft ³ /min	cubic feet per minute
GAC	granular activated carbon
GC	gas chromatograph
O&M	operation and maintenance
PID	photoionization detector
ppmv	part per million by volume
PVC	polyvinyl chloride
RWQCB	Regional Water Quality Control Board
SVE	soil vapor extraction
TCE	trichloroethene
VOC	volatile organic compound
USEPA	U.S. Environmental Protection Agency

SECTION 1

INTRODUCTION AND BACKGROUND

The following report documents the soil vapor extraction (SVE) remediation of volatile organic compounds (VOCs) in soil at the former Honeywell North Hollywood facility for the First Quarter 2003. The site, which is currently occupied by Kaiser Permanente, is located at 11668 Sherman Way, North Hollywood, California. In addition to discussing recent remedial performance data for the Second Quarter 2003, the report also includes an overview of the operation, maintenance, and monitoring of the SVE system since its startup in early October 2001. During the first year of SVE remediation, the system was operated under a South Coast Air Quality Management District (AQMD) various locations permit. Because that permit allowed for no more than one year of operation at a given site, a fixed-location permit to construct/operate was obtained from the AQMD in January 2003.

1.1 SITE DESCRIPTION

Figure 1 illustrates the site layout and the immediate vicinity. The site is located in the east part of the San Fernando Valley at an approximate elevation of 735 to 740 ft above mean sea level. The area undergoing SVE remediation lies within the parking lot of the former AlliedSignal/Bendix Electrodynamics Division (subsequently Honeywell) facility, which was built in 1941 and used for the manufacture of hydraulic and pneumatic valves. Manufacturing operations continued until the plant was shut down in February 1992. The plant was demolished the following year and the west part of the facility was sold to Kaiser Permanente in the early 1990s.

The SVE system discussed in this report is located in the south parking lot of the Kaiser Permanente facility. The Kaiser property is bordered by Sherman Way to the north, by the Southern Pacific Railroad right-of-way to the south, and by Lankershim Boulevard to the west. A commercial storage facility owned and operated by the Public Storage Corporation lies immediately east of the Kaiser property.

1.2 SVE REMEDIATION BACKGROUND

The SVE remediation has targeted VOCs that are present in vadose zone soils beneath the southern portion of the Kaiser property. These VOCs include trichloroethene (TCE), whose vapor-phase concentrations were as great as 26,000 µg/L. Prior to system construction and startup, the goals and planned actions for SVE remediation were discussed in a Remedial Action Work Plan (Parsons, 1999) that was subsequently approved by the Regional Water Quality Control Board – Los Angeles Region (RWQCB). In addition, SVE remediation fulfills the requirement for unsaturated zone VOC cleanup as prescribed by RWQCB Cleanup and Abatement Order No. R4-2003-0037 dated February 21, 2003.

After evaluating several different cleanup methods/technologies, SVE was selected as the preferred remedial alternative. SVE is an in-situ treatment process that is proven to be effective in remediating soils impacted by VOCs, including TCE. Physical site constraints, such as the

depth of VOC-impacted soils and the ongoing commercial activities at the Kaiser property, were also considered when choosing the most appropriate cleanup technology.

The SVE system includes a nested SVE well (EW-1) with four separate extraction zones that are screened in the following intervals: 50 to 70 ft bgs, 90 to 110 ft bgs, 140 to 160 ft bgs, and 180 to 200 ft bgs. A trailer-mounted blower assembly extracts vapors from these screened intervals through underground polyvinyl chloride (PVC) piping and an aboveground manifold. Once the extracted vapors pass through the manifold, they are routed through three, 1,000-lb granular activated carbon (GAC) vessels arranged in series. The GAC vessels are used to treat VOCs in the extracted vapors prior to discharge to the atmosphere. To prevent tampering and ensure the safety of site workers, the treatment equipment is located in a secured, fenced compound. Figure 3 presents a block flow diagram for the vapor extraction system.

1.3 REPORT ORGANIZATION

This report has five sections:

- Section 1 provides a site description and SVE remediation background.
- Section 2 discusses the system operation and maintenance.
- Section 3 describes the performance of the SVE system.
- Section 4 presents conclusions.
- Section 5 provides references.
- Appendix A documents the calculations that were used to estimate the quantity of VOCs removed.

SECTION 2

SYSTEM OPERATION AND MAINTENANCE

Installation of the SVE system was completed on October 10, 2001 and system operation commenced the following day. Since that time, the carbon vessels and blower unit have been rented from EnviroSupply and Service, Inc. of Irvine, California. The system was temporarily shut down on October 10, 2002 after one year of operation while a new, fixed-location, permit was processed by the AQMD. System operation resumed on January 22, 2003 once the permit was finalized. During the intervening period, soil gas was sampled and analyzed to assess rebound effects (refer to discussion in Section 3.2). Along with the newly issued permit, a third 1,000-lb carbon vessel was added to the treatment train to expand the system treatment capacity. Operation and maintenance activities for the Second Quarter 2003 are discussed in the following subsections.

2.1 SYSTEM UPTIME AND CARBON CHANGEOUT

Since its startup, the SVE system has operated with approximately 75% uptime through June 30, 2003, excluding the temporary shutdown while awaiting a fixed-location permit. Occasional, short-term interruptions in operation were attributed to carbon changeouts and power outages. During the Second Quarter 2003, the primary carbon vessel was replenished with fresh carbon ten times, whereas the secondary vessel was changed out three times (Table 1). In each instance, the carbon changeout was necessary to maintain compliance with the treated effluent limits prescribed in the AQMD permit, specifically condition #10, which restricts VOC concentrations at the outlet of the secondary adsorber to no more than 50 ppmv (as hexane). During most changeouts, the carbon in the primary vessel was replenished, after which, the vessel sequence was reconfigured as allowed under the AQMD permit. The freshly-filled vessel (i.e. the old primary vessel) was connected as the new tertiary vessel, the former secondary vessel was set up as the new primary vessel, and the former tertiary vessel became the new secondary vessel. In this way, the freshest carbon provides final polishing of the treatment stream prior to discharge.

2.2 WEEKLY/MONTHLY SYSTEM MONITORING

During the Second Quarter 2003, the SVE system was operated under the following AQMD permit requirements:

- Flow rate through the oxidizer will not exceed 200 ft³/min.
- The first carbon vessel will be changed out when VOC concentrations exceed 50 parts per million by volume (ppmv as hexane) at the effluent of the second vessel.
- Grab samples will be collected at the inlet and outlet of the system daily during the first week of operation and once per month thereafter.

During the initial operating period, inlet and outlet samples were collected and analyzed by an off-site laboratory using USEPA Method TO-14, which detects VOCs by gas chromatography/

mass spectrometry (GC/MS). After the initial laboratory analyses, the influent and effluent gases were analyzed using a PID calibrated to hexane. Based on the results of start-up field monitoring and laboratory analyses, the SVE system has been operated in compliance with the conditions of the newly-issued AQMD fixed-location permit.

2.3 OPERATION OVERVIEW

The SVE system was inspected weekly to monitor and optimize system performance. During routine site visits, the extraction flow rate was checked and adjusted. Influent and effluent concentrations also were measured with a PID and/or sampled for laboratory analysis to confirm compliance with the permit requirements. Earlier this year, for quality control purposes, side-by-side influent and effluent concentration measurements were taken using two independently calibrated PIDs. Both instruments showed consistent readings.

During routine site visits, the hours of operation, temperature, and extraction vacuum were documented and water was drained from the knockout pot as necessary. Table 1 presents an operational summary for the system, including relevant activities for the Second Quarter 2003.

SECTION 3

SYSTEM PERFORMANCE

3.1 SOIL REMEDIATION ESTIMATES

The cumulative amount of VOCs removed and the VOC mass removal rate was re-calculated as of June 30, 2003. Plots of VOC concentrations at the system inlet and the total system flow rates relative to the hours of system operation are shown on Figure 4. The data that forms the basis for these plots is presented in Table 2. During the initial 950 hours of operation, the inlet concentration curve depicts high initial concentrations, which declined as VOCs were removed and adjustments to the system were made. In late November 2001, after approximately 800 hours of operation, the dilution and recirculation valves were adjusted to increase vacuum and flow. During the next 1,550 hours of operation (i.e., between late November 2001 and late February 2002), the recirculation and dilution air valves were readjusted to maintain an influent concentration between 1,000 and 2,000 ppmv and to increase flow. Beginning March 2002, the dilution air valve was incrementally closed to further increase vacuum and maximize the VOC removal rate. In response, the influent concentrations increased to greater than 10,000 ppmv before they began to decline in June 2002. Adjustments to the dilution air valve continued until it was fully closed and influent concentrations steadily decreased in response. After system operation resumed in January 2003, the influent concentrations have generally remained in the range of 2,000 to 3,000 ppmv during the First and Second Quarter 2003. From April 2003 on, the rate of decrease in influent VOC concentration has slowed considerably, possibly signaling the onset of diminishing return or asymptotic conditions for this operational parameter.

Using the data presented in Table 2 and on Figure 4, and the molecular weight of the primary contaminant (TCE), the rate of VOC mass removal by the SVE system was estimated using the calculations described in Appendix A. As of June 30, 2003, after approximately 9,600 hours of operation, the SVE system has removed nearly 13,200 pounds of VOCs (Figure 5). As previously noted for influent VOC concentrations, the rate of VOC mass removal has diminished somewhat during the Second Quarter 2003, possibly reflecting the arrival of asymptotic conditions. Monitoring during the third quarter will carefully evaluate these conditions.

3.2 SOIL GAS SURVEY

Eight soil gas surveys have been performed to monitor changes in the concentrations of VOCs in subsurface soils: prior to SVE startup to establish a baseline; two months after startup on December 19, 2001; on March 25, 2002; on June 18, 2002; on October 10, 2002, on December 10, 2002, on March 24, 2003, and on June 26, 2003. The surveys were performed by Environmental Support Technologies, Inc. (EST) or Centrum Analytical Laboratories, Inc. using a mobile gas chromatograph (GC) and following RWQCB sampling and reporting guidelines (RWQCB, 1996). Table 3 presents the data from these eight monitoring events and copies of the laboratory reports for the June 2003 samples are presented as Appendix B. As shown on Figure 6, the concentration of TCE has decreased significantly in the monitoring points and the

extraction well intervals since system operation began. In several instances, the concentration of TCE has declined more than two orders of magnitude during the past year. As shown on Figure 6, after approximately two months of shutdown, only modest rebound effects were observed in most monitoring points. In general, the post-rebound concentrations of TCE remain one to two orders of magnitude lower than pre-remediation concentrations. As shown by sampling at the end of the Second Quarter 2003, VOC concentrations have decreased in most monitoring points following the re-start of the system in January 2003.

SECTION 4

CONCLUSIONS

With the exception of temporary shutdowns for carbon changeouts, occasional power outages, and issuance of a new AQMD permit, the SVE system has been in essentially continuous operation since its startup in October 2001. The system was temporarily shut down in October 2002, until a new fixed-location permit was finalized by the AQMD. Once the new permit was issued, operation of the system resumed on January 22, 2003. Since that time, the system has been monitored regularly to optimize its performance and ensure AQMD permit compliance.

The results to date indicate that the SVE system is successfully removing VOCs and steadily reducing their concentrations in soil, both at different depths and at different radial distances from the nested extraction well. Periodic adjustments of the dilution air and recirculation rates have enhanced the removal of the remaining VOCs. As of June 30, 2003, nearly 13,200 pounds of VOCs have been removed.

Results of the soil gas surveys performed in July 2001, December 2001, March 2002, June 2002, October 2002, December 2002, March 2003, and June 2003 confirm that the concentration of TCE in soil gas has decreased significantly since system startup, in many cases by one or two orders of magnitude.

During the Second Quarter 2003, the rate of decrease in the influent VOC concentration diminished somewhat, as did the VOC mass removal rate. Together, these patterns could signal the arrival of diminishing return or asymptotic conditions. These trends will be carefully evaluated during the Third Quarter.

SECTION 5

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Tables

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Table 1
Operational Summary
Honeywell North Hollywood

Date	Hours of Operation	Milestone
10/11/01	0	System startup (extracting from all intervals)
10/20/01	124	Carbon changeout of first vessel
10/20/01	124	Began extracting from only 90-110 ft bgs
10/25/01	196	Carbon changeout of first vessel
11/27/01	791	Carbon changeout of first vessel
11/28/01	815	Began extracting from 90-110 and 140-160 ft bgs
12/03/01	958	Began extracting from 90-110, 140-160, and 180-200 ft bgs
12/19/01	1,314	December 2001 soil gas monitoring event
01/16/02	1,776	Carbon changeout of first vessel
02/23/02	2,306	Carbon changeout of first vessel
03/05/02	2,550	Replaced second vessel with a new vessel
03/11/02	2,594	Carbon changeout of first vessel
03/12/02	3,594	Closed dilution air valve further to increase vacuum
03/25/02	2,758	March 2002 soil gas monitoring event
03/28/02	2,764	Carbon changeout of both vessels
04/03/02	2,862	Carbon changeout of first vessel
04/12/02	3,023	Carbon changeout of both vessels
04/22/02	3,142	Carbon changeout of first vessel
05/01/02	3,327	Carbon changeout of both vessels
05/10/02	3,496	Carbon changeout of both vessels
05/17/02	3,639	Carbon changeout of first vessel
05/28/02	3,760	Carbon changeout of both vessels
06/07/02	3,926	Carbon changeout of both vessels
06/07/02	3,927	Dilution air valve fully closed to increase vacuum
06/14/02	4,077	Carbon changeout of both vessels
06/18/02	4,172	June 2002 soil gas monitoring event
06/21/02	4,179	Carbon changeout of first vessel
06/27/02	4,327	Carbon changeout of both vessels
07/03/02	4,470	Carbon changeout of first vessel
07/10/02	4,632	Carbon changeout of first vessel
07/18/02	4,826	Carbon changeout of both vessels
07/30/02	5,069	Carbon changeout of both vessels
08/06/02	5,255	Carbon changeout of first vessel
08/15/02	5,425	Carbon changeout of both vessels
08/23/02	5,591	Carbon changeout of first vessel
08/30/02	5,759	Carbon changeout of first vessel
09/06/02	5,927	Carbon changeout of first vessel
09/13/02	6,097	Carbon changeout of both vessels
09/20/02	6,261	Carbon changeout of first vessel
09/27/02	6,429	Carbon changeout of first vessel
10/04/02	6,594	Carbon changeout of first vessel
10/10/02	6,740	October 2002 soil gas monitoring event
10/10/02	6,744	Shutoff system for preliminary rebound testing
12/09/02	6,744	December 2002 soil gas monitoring event

Table 1
Operational Summary
Honeywell North Hollywood

Date	Hours of Operation	Milestone
01/22/03	6,744	System re-started
02/05/03	6,970	Carbon changeout of first vessel (reconfigured to be last)
02/18/03	7,108	Carbon changeout of first vessel (reconfigured to be last)
02/24/03	7,182	Carbon changeout of first and second vessel (reconfigured to be last)
03/04/03	7,367	Carbon changeout of first vessel (reconfigured to be last)
03/17/03	7,539	Carbon changeout of first vessel (reconfigured to be last)
03/24/03	7,708	March 2003 soil gas monitoring event
03/25/03	7,732	Carbon changeout of first vessel (reconfigured to be last)
03/26/03	7,734	Carbon changeout of first vessel (reconfigured to be last)
04/14/03	7,916	Carbon changeout of first vessel (reconfigured to be last)
04/23/03	8,112	Carbon changeout of first vessel (reconfigured to be last)
05/01/03	8,277	Carbon changeout of first and second vessel (reconfigured to be last)
05/09/03	8,421	Carbon changeout of first vessel (reconfigured to be last)
05/16/03	8,583	Carbon changeout of first vessel (reconfigured to be last)
05/23/03	8,742	Carbon changeout of first vessel (reconfigured to be last)
05/30/03	8,910	Carbon changeout of first vessel (reconfigured to be last)
06/06/03	9,074	Carbon changeout of first and second vessel (reconfigured to be last)
06/16/03	9,271	Carbon changeout of first vessel (reconfigured to be last)
06/25/03	9,486	Carbon changeout of first and second vessel (reconfigured to be last)
06/26/03	9,500	June 2003 soil gas monitoring event

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H2O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
10/11/2001 9:43	0.0	178	84		4,700	4.7		1.6	2.11	0	0
10/12/2001 9:07	23.4	190	80		4,252	3.8		3.2	2.04	49	49
10/16/2001 13:34	123.9	186	95	2.5	4,782	1,620		3.1	2.24	215	264
10/20/2001 10:15	124.4	122	69	3.2	1,870	4.1		1.0	0.58	0.7	264
10/21/2001 15:05	153.4	120	83	3	1,871	1.2		0.9	0.57	17	281
10/22/2001 17:51	180.0	103	81	2.8	1,800	44.9		1.1	0.47	14	295
10/23/2001 9:30	195.7	109	68	2.85	1,450	83.0		1.0	0.40	6.8	301
10/25/2001 16:20	195.7	109	78	2.5	1,320	-		1.0	0.36	0.0	301
10/29/2001 8:09	284.4	108	66	2.85	1,160	0.1		0.1	0.32	30	331
10/31/2001 17:15	341.5	103	73		450	0.5		0.4	0.12	12	344
11/5/2001 16:55	461.1	103	76	1.5	253	9.6		1.8	0.07	11	355
11/13/2001 18:00	599.3	107	65	1.5	110	39.1		0.1	0.03	6.6	361
11/19/2001 12:15	791.1	115	78	2.5	101	78.4		0.2	0.03	5.7	367
11/28/2001 13:20	815.1	183	63	1	263	1.6		0.7	0.12	1.8	369
11/30/2001 10:30	860.2	179	67	3	106	-		-	0.05	3.8	373
12/3/2001 11:45	957.5	176	68	6	2,760	1.6		1.2	1.22	62	435
12/12/2001 13:30	1,151.4	170	68	3	1,020	1.5		1.0	0.44	161	596
12/19/2001 8:22	1,313.7	184	51	11	178	0.0		0.0	0.04	42	638
12/20/2001 14:55	1,344.2	188	70	4.5	3,052	9.7		1.2	0.66	23	661
1/7/2002 14:40	1,776.4	195	71	5.5	150	150		0.1	0.03	329	990
1/18/2002 13:10	1,826.4	200	70	5	285	0.3		0.0	0.07	5.4	995
1/18/2002 14:05	1,827.3	199	70	5.5	1,857	0.3		0.0	0.42	0.5	996
1/24/2002 12:30	1,970.2	197	71	8	85.5	0.7		0.6	0.02	70	1,065
1/24/2002 15:45	1,973.0	188	70	7	1,702	0.8		0.5	0.37	1.2	1,066
1/31/2002 11:50	2,138.0	183	65	5.7	405	0.5		0.8	0.08	82	1,148
1/31/2002 15:30	2,141.7	150	66	2.4	1,667	12.1		8.9	0.29	1.5	1,150
2/7/2002 12:35	2,305.9	144	80	3.5	166	502		2.0	0.03	57	1,207
2/25/2002 14:43	2,357.6	139	85	6.25	234	8.9		2.5	0.04	3.7	1,210
2/25/2002 17:05	2,360.0	170	85	13.5	1,685	40.2		9.4	0.33	1.0	1,211
2/27/2002 12:25	2,403.7	177	92	8	2,678	1.6		1.4	0.54	42	1,253
2/27/2002 14:30	2,405.7	190	92	10	2,724	7.4		17.6	0.59	2.5	1,256
3/7/2002 12:15	2,594.1	184	82	8	1,849	1,513		6.0	0.39	204	1,459
3/12/2002 15:45	2,594.7	185	77	8	1,530	3.4		3.4	0.32	0.5	1,460
3/12/2002 17:45	2,596.4	175	78	13	4,800	-		-	0.96	2.4	1,462
3/19/2002 13:15	2,618.8	182	79	13.2	2,400	3.7		4.2	0.50	36	1,498
3/19/2002 14:05	2,619.5	167	82	18.5	6,500	8.5		9.2	1.24	1.3	1,500
3/25/2002 14:20	2,763.9	170	76	18	>10,000	>10,000		4,100	1.94	507	2,007
3/28/2002 14:56	2,764.1	192	63	17.5	>10,000	-		-	2.20	0.9	2,008
3/28/2002 15:33	2,764.7	192	63		8,034	14.2		13.8	1.76	2.6	2,010
3/28/2002 15:49	2,764.9	184	76	12	7,116	-		-	1.50	0.7	2,011
4/1/2002 16:00	2,861.4	191	82	11.5	5,876	3,785		20.7	1.28	296	2,307
4/3/2002 15:16	2,861.8	174	72	13	3,895	4.2		10.1	0.78	0.9	2,308
4/10/2002 9:06	3,022.7	174	74	13.5	5,902	4,737		546	1.17	345.8	2,653
4/12/2002 18:05	3,023.1	176	71	12.5	6,597	4.5		2.5	1.33	1.1	2,655
4/17/2002 17:11	3,142.2	170	78	12.25	6,123	3,173		5.2	1.19	330.6	2,985
4/22/2002 16:05	3,143.4	165	91	11.5	8,567	5.4		6.0	1.62	3.7	2,989
4/30/2002 7:05	3,326.4	169	68	12.5	6,468	3,842		433	1.25	578.3	3,567

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H ₂ O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
5/1/2002 9:43	3,327.2	159	76	11.5	4,747	-		-	0.86	1.9	3,569
5/1/2002 9:52	3,327.3	182	81	16	6,979	3.7		4.0	1.45	0.3	3,569
5/8/2002 10:18	3,495.8	178	81	15.5	>2,000 ^b	1,900		550	-	-	-
5/10/2002 10:51	3,496.2	163	81	15	4,543	-		-	0.85	428.1	3,997
5/10/2002 11:16	3,496.6	168	92	21.75	8,618	6.2		3.5	1.66	1.1	3,999
5/10/2002 14:11	3,498.7	184	99	22.5	7,684	6.2		8.2	1.62	7.6	4,006
5/16/2002 10:15	3,638.5	177	81	24	>10,000	>10,000		18.2	2.02	561.1	4,567
5/17/2002 15:00	3,639.0	176	91	22	9,956	3.3		12.2	2.00	2.2	4,569
5/22/2002 16:17	3,760.3	179	77	24	8,341	4,594		1,424	1.71	496.3	5,066
5/28/2002 15:50	3,760.7	180	89	23	5,772	1.5		1.3	1.19	1.3	5,067
6/4/2002 12:41	3,925.5	170	95	24.5	4,731	6,808		38.4	0.92	382.9	5,450
6/7/2002 12:38	3,925.9	180	87	24	4,768	-		-	0.98	0.8	5,451
6/7/2002 13:40	3,927.0	181	100	27	6,938	5.3		4.4	1.44	2.9	5,454
6/13/2002 7:35	4,076.8	184	78	28	>10,000	4,322		151	2.10	584.6	6,038
6/14/2002 10:24	4,077.5	183	96	28	5,760	2.4		2.0	1.21	2.6	6,041
6/18/2002 16:15	4,179.3	165	91	26	9,241	2,600		39.1	1.74	331.0	6,372
6/21/2002 9:25	4,179.9	178	73	27	5,361	0.7		0.0	1.09	1.9	6,374
6/28/2002 11:33	4,348.4	164	97	26	4,783	5.0		4.6	0.90	369.3	6,743
7/3/2002 13:57	4,470.8	162	95	25	4,209	2,053		6.6	0.78	226	6,969
7/10/2002 8:15	4,631.5	166	87	26	3,620	2,340		11.5	0.69	260	7,229
7/10/2002 9:42	4,632.2	193	90	29	3,806	9.1		8.9	0.84	1.2	7,230
7/29/2002 11:04	5,068.8	190	-	-	3,465	3,117		1292	0.75	767	7,997
7/30/2002 12:45	5,089.0	189	93	28	3,090	4.2		4.1	0.67	32	8,029
8/6/2002 11:33	5,255.6	169	97	27	3,039	331		14.1	0.59	231	8,259
8/6/2002 12:26	5,256.1	170	101	25	2,949	7.2		8.2	0.57	0.6	8,260
8/14/2002 13:06	5,424.7	169	97	26	3,168	1,895		51	0.61	220	8,480
8/15/2002 10:00	5,424.9	175	82	28	2,660	0.2		0.3	0.53	0.3	8,480
8/23/2002 8:00	5,591.2	176	79	28	3,017	1,277		5.4	0.61	209	8,689
8/23/2002 9:22	5,591.9	174	82	27	3,313	5.4		4.7	0.66	1.0	8,690
8/30/2002 8:11	5,758.7	172	79	28	3,339	2,789		18.7	0.66	242	8,932
8/30/2002 9:03	5,758.9	171	71	27	3,062	1.5		16	0.60	0.3	8,932
9/6/2002 8:11	5,926.7	173	80	27	2,088	1,501		27.5	0.41	187	9,120
9/6/2002 9:15	5,926.8	171	87	26	2,241	0.5		20.1	0.44	0.1	9,120
9/13/2002 11:06	6,096.6	167	95	-	2,272	1,378		116	0.43	163	9,283
9/13/2002 13:35	6,097.1	186	98	28	2,272	-		-	0.48	0.5	9,284
9/20/2002 8:39	6,260.6	162	-	28	2,130	1,576		15	0.39	158	9,442
9/20/2002 10:00	6,260.8	158	89	26	2,028	1.5		0.9	0.37	0.2	9,442
9/27/2002 10:40	6,428.6	150	81	27	1,587	1,360		5.6	0.27	118	9,560
9/27/2002 11:55	6,429.9	178	82	28	1,914	4.0		2.0	0.39	0.9	9,561
10/4/2002 8:50	6,594.7	172	-	28	2,017	1,276		14.3	0.40	143	9,704
10/10/2002 14:00	6,744.0	180	87	30	204	108		64.9	0.04	72	9,776
1/22/2003 10:45	6,813.5	182	72	28.5	2,120	1,007	7.5	1.7	0.44	37.0	9,813
1/23/2003 10:10	6,836.3	178	77	27	2,326	468	17.2	4.7	0.47	23.0	9,836
1/24/2003 11:01	6,861.2	181	85	27	2,340	625	27	17.2	0.48	26.3	9,862

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H ₂ O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
1/24/2003 15:47	6,866.0	189	84	28	2,940	650	9.9	13.2	0.64	5.9	9,868
1/27/2003 10:50	6,866.6	192	75	27	2,850	584	5.5	13.6	0.63	0.8	9,869
1/28/2003 12:30	6,892.5	186	87	27	1,975	540	3.5	5.9	0.42	29.9	9,899
1/29/2003 11:35	6,915.3	185	84	28	1,948	890	3.2	6.8	0.41	20.9	9,920
1/30/2003 18:55	6,934.7	192	66	28	2,448	1,260	16.5	10.8	0.54	20.3	9,940
1/31/2003 18:00	6,970.0	190	83	28	3,280	1,221	65.2	8.5	0.71	48.6	9,989
2/5/2003 12:10	6,970.4	187	72	28	2,350	21.8	9.3	4.2	0.50	0.5	9,989
2/6/2003 13:20	6,995.6	189	87	28	2,597	104	29.2	23.8	0.56	29.6	10,019
2/7/2003 16:30	7,022.8	188	78	29	2,280	358	8.6	14.6	0.49	31.5	10,050
2/10/2003 5:45	7,023.3	188	50	28	2,225	232	7.9	0.0	0.48	190.7	10,060
2/11/2003 16:00	7,057.7	185	74	28	2,320	310	7.6	2.2	0.49	36.8	10,097
2/13/2003 17:45	7,107.3	189	74	27	2,353	981	95.1	30.2	0.51	54.6	10,151
2/21/2003 16:25	7,181.3	185	85	28	2,750	783	164	13.6	0.58	88.9	10,240
2/24/2003 13:45	7,182.5	193	65	28	2,366	31.6	16.5	10.2	0.52	1.5	10,242
2/27/2003 11:30	7,251.8	190	75	30	2,742	41.5	30.5	15.1	0.60	85.4	10,327
3/3/2003 17:30	7,354.0	185	73	28	1,755	752	19.5	12.3	0.37	109.0	10,436
3/11/2003 13:40	7,539.0	189	88	29	2,978	1,518	169	26.4	0.64	207.0	10,643
3/17/2003 11:50	7,539.9	187	73	22	3,572	46.9	7.5	3.5	0.76	1.4	10,644
3/25/2003 12:27	7,732.5	196	100	20	>10,000	4,500	500	105	2.24	638.1	11,282
3/26/2003 13:45	7,734.3	187	92	22	1,750	47.0	8.1	3.4	0.37	5.2	11,288
4/1/2003 12:45	7,749.1	188	85		2,582	29.8	10.1	5.7	0.56	15.2	11,303
4/8/2003 12:15	7,915.5	187	99	28	3,150	1322	51.8	6.6	0.67	225.4	11,528
4/15/2003 12:00	7,951.6	185		29	2,219	110	34.1	7.5	0.47	45.5	11,574
4/24/2003 13:45	8,112.0	208		26.6	1,760	266	41.9	3.7	0.42	157.0	11,731
5/1/2003 11:45	8,277.9	200	83	22.5	1,580	935	308	110	0.36	142.7	11,873
5/7/2003 12:00	8,420.8	185		27	1,434	272	65.2	23.3	0.30	104.7	11,978
5/9/2003 13:30	8,421.4	190	80	29	1,658	62.6	28.5	3.2	0.36	0.4	11,979
5/16/2003 7:40	8,583.7	189	77	21.5	3,500	1180	230	100	0.76	199.8	12,178
5/23/2003 10:00	8,742.5	195	90	27	1,950	46.5	10.7	3.5	0.43	208.5	12,387
5/30/2003 12:45	8,910.8	186	90	27	1,740	0.5	39.9	0	0.37	149.3	12,536
6/6/2003 8:05	9,074.2	196	77	22.5	1,829	535	220	105	0.41	140.5	12,677
6/25/2003 14:00	9,485.9	166	106	20	1,583	13.6	9.4	7.7	0.30	322.4	12,999
7/3/2003 9:40	9,673.4	167	97	19.5	2,119	113	3.4	2.5	0.40	145.8	13,145

- = Not Measured

^a = As measured with a PID calibrated to Hexane

^b = A PID with a lower range was used. Influent concentrations may be underrepresented. This data was not used to calculate cumulative VOC mass removal.

Table 3
Soil Gas Analytical Summary
Honeywell North Hollywood

Well Interval	TCE (µg/L)								PCE (µg/L)							
	7/13/01	12/19/01	3/15/02	6/18/02	10/10/02	12/9/02	3/24/03	6/26/03	7/13/01	12/19/01	3/15/02	6/18/02	10/10/02	12/9/02	3/24/03	6/26/03
GW-7-50	96	42	25	14	2.3	13	1.7	8.7	2.7	2.0	<1	1.1	<1	1.4	<1	<1
GW-7-150	500	250	60	26	13	14	5.8	11	<5	15	<2.5	16	15	22	5.3	8.2
GW-10-50	260	28	28	17	<1	3.7	<1	16	2.2	1.6	<1	1.1	<1	<1	<1	2.0
GW-10-150	3,100	1,300	590	52	8	16	6.9	NS	<80	<50	<25	<1	<1	<1	<1	NS
EW-1-70	130	52	31	22	4.7	27	9.1	18	11	7.4	7.2	6.6	1.3	12	3.3	7.1
EW-1-110	6,600	3,700	2,700	130	180	270	120	190	<200	<100	<50	3.6	3.3	7.0	1.4	3.7
EW-1-160	10,000	5,300	2,700	840	160	170	140	200	<200	<100	<50	<20	<10	3.1	21	17
EW-1-200	2,000	2,800	1,300	400	140	109	39	250	<200	<50	<50	58	27	3.0	6.6	43
MLG-1-50	11	4.4	75	3.7	51	6.5	10	4.5	<1	<1	<1	<1	2	<1	<1	<1
MLG-1-100	8,600	5,900	5,000	370	36	270	88	39	<200	<100	<50	4.9	<2.5	8.8	<2.5	2.9
MLG-1-150	10,000	7,300	6,800	850	77	590	53	41	<200	<100	<100	<40	<2.5	24	<10	11
MLG-1-200	6,400	2,800	2,400	2,000	380	670	710	750	<80	<100	<50	250	<50	88	10	15

Note: All samples were analyzed by a mobile laboratory in the field
Jul-01 sample data reflects pre-remediation baseline.
Data are plotted graphically on Figures 1 and 2.

Figures

Appendix A
VOC Mass Removal
Calculations

APPENDIX A VOC MASS REMOVAL CALCULATIONS

$$\frac{\text{ppmv VOCs in influent}^a}{10^6} \times \frac{\text{extraction flow rate (cfm)}}{\text{cfm}} \times \frac{60 \text{ minutes}}{\text{hour}} \times \frac{28.3 \text{ L}}{\text{ft}^3} \times \frac{1 \text{ mol}}{24.5 \text{ L}} \times \frac{0.1314 \text{ kg}}{\text{mol of VOCs}^b} \times \frac{2.2046 \text{ lb}}{1 \text{ kg}} \times \frac{\text{correction factor hexane to TCE}}{(0.126)}$$

= pounds of VOCs extracted per hour (extraction rate)

$$\frac{\text{Extraction rate @ time T1} + \text{extraction rate @ time T2}}{2} \times (T2 - T1) = \text{VOCs extracted between T1 and T2}$$

Thus, find the amount of VOCs extracted between each consecutive site visit and the sum to date provides the cumulative total VOCs extracted.

^aAs measured with a PID calibrated to hexane.

^bMolecular weight of TCE (131.4 g/mol).

Appendix B
Soil Gas
Laboratory Reports



INTERPHASE ENVIRONMENTAL, INC.

MOBILE LABORATORIES AND DIRECT PUSH DRILLING

Friday, July 11, 2003

Ms. Melissa Ward
Parsons Engineering Science, Inc.
100 W. Walnut Street
Pasadena, CA 91124

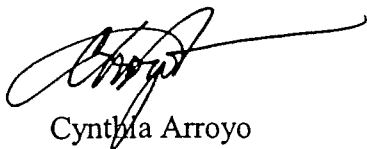
Re: InterPhase Project No. 03195
Location: 11668 Sherman Way, North Hollywood, CA

Dear Ms. Ward:

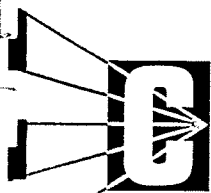
Please find enclosed is the analysis result for the project site as referenced above as submitted by Centrum Analytical Mobile Laboratories, Inc. Analyses was performed Thursday, June 26, 2003.

If you have any questions or need further assistance, please do not hesitate to call our office.

Sincerely,
InterPhase Environmental, Inc.



Cynthia Arroyo



**Centrum
Analytical
Laboratories, Inc.**

CERTIFIED HAZARDOUS WASTE TESTING MOBILE & IN HOUSE LABORATORIES

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

LABORATORY REPORT FORM (COVER PAGE 1)

Laboratory Name: Centrum Analytical Laboratories, Inc.

Address: 1401 Research Park Drive, Suite 100, Riverside, CA 92507

Telephone/Fax: (909) 779-0310/(909) 779-0344

ELAP Certification No./
Expiration Date: 2373/June, 2005

Authorized Signature
Name, Title: (print) Mark B. Horan / Mobile Laboratories Supervisor

Signature, Date:  7/9/3

Client Name: Interphase

Project Name/No: Honeywell - North Hollywood

Date(s) Sampled: (from - to) 06/26/03

Date(s) Received: (from - to) 06/26/03

Date(s) Reported: (from - to) 06/26/03

Chain of Custody received: Yes X No

Comments:

(RWQCB Lab Form 10A: Ver 6/00)



Centrum
Analytical
Laboratories, Inc.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM (COVER PAGE 2)

<u>Organic Analyses</u>	# of Samples	# of Samples Subcontracted
VOC's by EPA 8260B	13	0
Sample Condition:	Intact	

<u>Inorganic Analyses</u>	# of Samples	# of Samples Subcontracted
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Sample Condition:

<u>Microbiological Analyses</u>	# of Samples	# of Samples Subcontracted
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Sample Condition:

<u>Other Types of Analyses</u>	# of Samples	# of Samples Subcontracted
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Sample Condition:

(RWQCB Lab Form 10A: Ver 6/00)

001902



**Centrum
Analytical
Laboratories, Inc.**

Project Name/No.: Honeywell - North Hollywood

(RWQCB Lab Form 10A: Ver6/00)

ANALYTICAL RESULTS FOR ORGANICS

METHOD: EPA 8260B

REPORTING UNIT: µg/L of Air

DATE ANALYZED		06/26/03	06/26/03	06/26/03	06/26/03	06/26/03
DATE EXTRACTED		NA	NA	NA	NA	NA
LAB SAMPLE I.D.		Amb. Blank	M4-492-01	M4-492-02	M4-492-03	M4-492-04
CLIENT SAMPLE I.D.		NA	GW7-50 (1V)	GW7-50 (3V)	GW7-50 (7V)	GW7-150
EXTRACTION SOLVENT		NA	NA	NA	NA	NA
EXTRACTION METHOD		mod. 5030	mod. 5030	mod. 5030	mod. 5030	mod. 5030
DILUTION FACTOR		1	1	1	1	1
COMPOUND	CRDL					
Benzene	1.0	ND	ND	ND	ND	ND
Carbon tetrachloride	1.0	ND	ND	ND	ND	ND
Chloroethane	1.0	ND	ND	ND	ND	ND
Chloroform	1.0	ND	ND	ND	ND	ND
Dichlorodifluoromethane	1.0	ND	ND	ND	ND	ND
1,1-Dichloroethane	1.0	ND	ND	ND	ND	ND
1,2-Dichloroethane	1.0	ND	ND	ND	ND	ND
1,1-Dichloroethene	1.0	ND	ND	ND	ND	1.2
cis-1,2-Dichloroethene	1.0	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	1.0	ND	ND	ND	ND	ND
Ethylbenzene	1.0	ND	ND	ND	ND	ND
Methylene chloride	1.0	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	1.0	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	2.0	ND	ND	ND	ND	ND
Tetrachloroethene	1.0	ND	ND	ND	ND	8.2
Toluene	1.0	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	1.0	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1.0	ND	ND	ND	ND	ND
Trichloroethene	1.0	ND	7.4	8.7	7.5	11
Trichlorofluoromethane	1.0	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	1.0	ND	ND	ND	ND	ND
Vinyl chloride	1.0	ND	ND	ND	ND	ND
Xylenes, m-,p-	2.0	ND	ND	ND	ND	ND
Xylene, o-	1.0	ND	ND	ND	ND	ND
SURROGATE	SPK CONC	ACP%	%RC	%RC	%RC	%RC
Dibromofluoromethane	50	70-130	99	101	98	100
Toluene-d8	50	70-130	98	101	100	100
Bromofluorobenzene	50	70-130	102	104	100	101

001903

Project Name/No.: Honeywell - North Hollywood

(RWQCB Lab Form 10A: Ver6/00)

ANALYTICAL RESULTS FOR ORGANICS

METHOD: EPA 8260B

REPORTING UNIT: µg/L of Air

DATE ANALYZED		06/26/03	06/26/03	06/26/03	06/26/03	06/26/03
DATE EXTRACTED		NA	NA	NA	NA	NA
LAB SAMPLE I.D.		M4-492-05	M4-492-06	M4-492-07	M4-492-08	M4-492-09
CLIENT SAMPLE I.D.		MLG1-200	MLG1-150	MLG1-100	MLG1-50	EW1-110
EXTRACTION SOLVENT		NA	NA	NA	NA	NA
EXTRACTION METHOD		mod. 5030	mod. 5030	mod. 5030	mod. 5030	mod. 5030
DILUTION FACTOR		5	1	1	1	1
COMPOUND	CRDL					
Benzene	1.0	ND	ND	ND	ND	ND
Carbon tetrachloride	1.0	ND	ND	ND	ND	ND
Chloroethane	1.0	ND	ND	ND	ND	ND
Chloroform	1.0	ND	ND	ND	ND	ND
Dichlorodifluoromethane	1.0	ND	ND	ND	ND	ND
1,1-Dichloroethane	1.0	ND	ND	ND	ND	ND
1,2-Dichloroethane	1.0	ND	ND	ND	ND	ND
1,1-Dichloroethene	1.0	23	ND	ND	ND	ND
cis-1,2-Dichloroethene	1.0	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	1.0	ND	ND	ND	ND	ND
Ethylbenzene	1.0	ND	1.3	ND	ND	2.1
Methylene chloride	1.0	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	1.0	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	2.0	ND	ND	ND	ND	ND
Tetrachloroethene	1.0	15	11	2.9	ND	3.7
Toluene	1.0	ND	ND	ND	ND	9.5
1,1,1-Trichloroethane	1.0	9.4	ND	ND	ND	ND
1,1,2-Trichloroethane	1.0	ND	ND	ND	ND	ND
Trichloroethene	1.0	750	41	39	4.5	190
Trichlorofluoromethane	1.0	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	1.0	ND	ND	ND	ND	ND
Vinyl chloride	1.0	ND	ND	ND	ND	ND
Xylenes, m-,p-	2.0	ND	11	2.1	ND	11
Xylene, o-	1.0	ND	8.4	1.2	ND	4.6
SURROGATE	SPK CONC	ACP%	%RC	%RC	%RC	%RC
Dibromofluoromethane	50	70-130	99	98	99	100
Toluene-d8	50	70-130	99	97	98	99
Bromofluorobenzene	50	70-130	102	95	97	98

001904

Project Name/No.: Honeywell - North Hollywood

(RWQCB Lab Form 10A: Ver6/00)

ANALYTICAL RESULTS FOR ORGANICS

METHOD: EPA 8260B

REPORTING UNIT: µg/L of Air

DATE ANALYZED		06/26/03	06/26/03	06/26/03	06/26/03	
DATE EXTRACTED		NA	NA	NA	NA	
LAB SAMPLE I.D.		M4-492-10	M4-492-11	M4-492-12	M4-492-13	
CLIENT SAMPLE I.D.		EW1-160	EW1-200	EW1-70	GW10-50	
EXTRACTION SOLVENT		NA	NA	NA	NA	
EXTRACTION METHOD		mod. 5030	mod. 5030	mod. 5030	mod. 5030	
DILUTION FACTOR		1	1	1	1	
COMPOUND	CRDL					
Benzene	1.0	ND	ND	ND	ND	
Carbon tetrachloride	1.0	ND	2.0	ND	ND	
Chloroethane	1.0	ND	ND	ND	ND	
Chloroform	1.0	ND	1.2	ND	ND	
Dichlorodifluoromethane	1.0	ND	ND	ND	ND	
1,1-Dichloroethane	1.0	ND	1.9	ND	ND	
1,2-Dichloroethane	1.0	ND	ND	ND	ND	
1,1-Dichloroethene	1.0	7.0	31	ND	ND	
cis-1,2-Dichloroethene	1.0	ND	2.2	ND	ND	
trans-1,2-Dichloroethene	1.0	ND	ND	ND	ND	
Ethylbenzene	1.0	ND	ND	20	1.0	
Methylene chloride	1.0	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	1.0	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	2.0	ND	ND	ND	ND	
Tetrachloroethene	1.0	17	43	7.1	2.0	
Toluene	1.0	3.5	ND	4.9	ND	
1,1,1-Trichloroethane	1.0	3.2	14	ND	ND	
1,1,2-Trichloroethane	1.0	ND	ND	ND	ND	
Trichloroethene	1.0	200	250	18	16	
Trichlorofluoromethane	1.0	ND	ND	ND	ND	
Trichlorotrifluoroethane	1.0	ND	ND	ND	ND	
Vinyl chloride	1.0	ND	ND	ND	ND	
Xylenes, m-,p-	2.0	5.5	ND	92	5.9	
Xylene, o-	1.0	3.3	ND	31	2.2	
SURROGATE	SPK CONC	ACP%	%RC	%RC	%RC	%RC
Dibromofluoromethane	50	70-130	99	99	97	99
Toluene-d8	50	70-130	99	99	100	101
Bromofluorobenzene	50	70-130	99	101	96	104

001905

Project No: Honeywell - North Hollywood

(RWQCB Lab Form 10A: Ver 6/00)

QA/QC REPORT

II. Sample/Sample Duplicate

DATE PERFORMED: 06/26/03

ANALYTICAL METHOD: EPA 8260B

BATCH #: M48260V936

LAB SAMPLE I.D.: M4-492-04

REPORTING UNITS: µg/L

ANALYTE	SAMPLE RESULTS	SAMPLE DUPLICATE RESULTS	RPD	RPD Limit
8260 Compounds				
1,1-Dichloroethene	1.17	1.09	7.1%	25
Tetrachloroethene	10.6	9.71	8.8%	25
Trichloroethene	8.17	7.81	4.5%	25

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 06/26/03

ANALYTICAL METHOD: EPA 8260B

STANDARD SUPPLY SOURCE: Absolute

DATE OF SOURCE: 05/20/03

INSTRUMENT I.D.: Mel4GCMS

LOT NUMBER: 030603, 121202, 120302

LAB LCS I.D.: VA-60-2

REPORTING UNITS: µg/L

ANALYTE	SPIKE CONC	RESULT	% RECOVERY	ACP % REC LIMIT
8260 Compounds				
1,1-Dichloroethylene	50.00	51.25	103%	70-130
Benzene	50.00	51.44	103%	70-130
Trichloroethene	50.00	50.40	101%	70-130
Toluene	50.00	48.39	97%	70-130
Chlorobenzene	50.00	49.65	99%	70-130



Centrum Analytical Laboratories, Inc.
1401 Research Park Drive, Suite 100
Riverside, CA 92507
Voice: 909.779.0310 • 800.798.9336
Fax: 909.779.0344

Chain of Custody Record

Centrum Job # **114-492**

3299 Hill Street, Suite 305
Signal Hill, CA 90755
Voice: 562.498.7005
Fax: 562.498.3617

www.centrum-labs.com

lab@centrum-labs.com

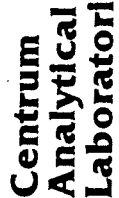
Page **1** of **2**

Project No:				Project Name:			
Project Manager:				Phone:			
Client Name:				Address:			
(Report and Billing)				(Report and Billing)			
INTERPHASE				LOS ANGELES, CA 90040			
Centrum ID	Sample ID	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	
01	GW7-50 (IV)	6/26/03	0850	VAPOR		BULB	
02	GW7-50 (3V)		0915				
03	GW7-50 (7V)		1045				
04	GW7-150		1021				
05	MLG1-200		1115				
06	MLG1-150		1140				
07	MLG1-100		1212				
08	MLG1-50		1310				
09	EW1-110		1347				
10	EW1-160		1445				
Relinquished by: <i>[Signature]</i>				Relinquished by:			
Date: 6/26/03				Time: 1545			
Received by: <i>[Signature]</i>				Received by:			
Date: 6/26/03				Time: 1545			
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.							
Laboratory Notes:							

Please Circle Analyses Requested									
8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gas only	8021B: BTEX/MBE Only	418.1 (TRPH), 413.2, 1664	GC or GCMS Volatiles by 5035*	GCMS: (8260B) 8021B, 624, 5242 WIP	GCMS: MIBE Conf. Only, BTEX/Oxygenates Only	GCMS: 8270C, 625	8080: Pesticides, PCBs, Pes/PCB	Metals: Title 22 (CAM), RCRA, PP
									PH, TDS, TSS, Conductivity
									Flashpoint, Hex Cr
Turn-Around Time									
<input type="checkbox"/> 24 Hr. RUSH*									
<input type="checkbox"/> 48 Hr. RUSH*									
<input type="checkbox"/> Normal TAT									
*Requires PRIOR approval, additional charges apply									
Requested due date: _____									
Remarks/Special Instructions									
DUPLICATE									

To be completed by Laboratory personnel:			
Samples chilled? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	From Field <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Custody seals? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	All sample containers intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Courier <input type="checkbox"/> UPS/Fed Ex	<input type="checkbox"/> Hand carried		
Date: _____	Date: _____	Date: _____	Date: _____
Sample Disposal			
<input type="checkbox"/> Client will pick up			
<input type="checkbox"/> Return to client			
<input type="checkbox"/> Lab disposal			
Sample Locator No.			

001907



Chain of Custody Record

Centrum Job # 2675-722

**1401 Research Park Drive, Suite 100
Riverside, CA 92507
Voice: 909.779.0310 • 800.798.9336
Fax: 909.779.0344**

**3299 Hill Street, Suite 305
Signal Hill, CA 90755
Voice: 562.498.7005
Fax: 562.498.8617**

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www.centrum-labs.com

Page 2 of 2

Project No:		Project Name:			
Fax: 909.779.0344		Fax: 562.498.8617			
Project Manager:		Phone:			
CYNTHIA		323-278-7700			
Client Name: (Report and Billing)		Address: (Report and Billing)			
INTERPHASE		6200 PEACHTREE ST. LOS ANGELES, CA 90040			
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Site location	Containers: # and type
11	EW1-200	6/26/03	1445	VAPOR	BULB
12	EW1-70	1	1505	|	|
13	G-W10-15050 9T 6/26/03	1	1535	|	|

Please Circle Analyses Requested											
GC or GCMS Volatiles by 5035*	GCMS: 8260B / 8021B, 624, 524.2	GCMS: MIBE Conf. Only BTEX/Oxygenates Only	GCMS: 8270C, 625	8080: Pesticides, PCBs, Pest/PCB	Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity	Flashpoint, Hex Cr				
801SM: Gas only	8021B: BTEX/MIBE Only	418.1 (TRPH), 413.2, 1664									
801SM: Diesel, Fuel Screen, Carbon Chain											

Turn-Around Time		Requested due date:	
<input type="checkbox"/> 24 Hr. RUSH* <input type="checkbox"/> 48 Hr. RUSH* <input type="checkbox"/> Normal TAT		*Requires PRIOR approval, additional charges apply	
Remarks/Special Instructions			

To be completed by Laboratory personnel:	
Samples chilled? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	From Field <input checked="" type="checkbox"/>
Custody seals? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	All sample containers intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Courier <input type="checkbox"/> UPS/Fed Ex <input type="checkbox"/> Hand carried	

Sample Disposal	
<input type="checkbox"/> Client will pick up	<input type="checkbox"/> Return to client
<input type="checkbox"/> Lab disposal	

Laboratory Notes:		Sample Locator No.	

White Copy - Original (Accompanies Samples)

Yellow Copy - Centrum Files

Pink Copy - Centrum duplicate

Gold Copy - Client Copy

001908

**RESULTS OF GROUNDWATER MONITORING
FIRST AND SECOND QUARTERS 1996
AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

**VOLUME III
Quality Assurance/Quality Control Report
Second Quarter 1996
2 of 2**

Prepared for:
AlliedSignal Aerospace
2525 West 190th Street
Torrance, California 90504

Prepared by:
SECOR International Incorporated
3437 Empresa Drive, Suite A
San Luis Obispo, California 93401

May 14, 1997
Job Number: A0057-001-01/ASN45, ASN47

001909

appropriately and replace after six months.

7. Inert gas: helium or nitrogen (99.99% pure).
8. Helium carrier gas, ultra-high purity.

E. Procedure

1. Demonstrate that the GC/MS system meets the ion abundance criteria in section F.5 by analyzing 50 ng of BFB initially, and every 8 hours thereafter.
2. After meeting the BFB criteria, the GC/MS system must be initially calibrated at a minimum of five concentration levels.
3. Run a multi-point calibration curve for each compound every six months, or more frequently as required, at concentration levels between 2 and 30 ug/L for each compound, by dilution of the calibration standard stocks with reagent water.
4. Analyze a second source verification at a midpoint concentration of the curve. The response factor must be less than 25% of the average response factor of the calibration curve.
5. Analyze each calibration standard and calculate the response factors (RF) for each compound at each concentration level. Then calculate the average RF for each compound. The percent relative standard deviation [$\%RSD = SD/avg\ RF \times 100$] of the RF's must be less than 30%.
6. Analyze a continuing calibration standard every 8-hour period. Dilute appropriate amounts of the standard stocks with reagent water in a volumetric flask if necessary. Fill a 25-mL syringe with the standard and add the designated amount of internal standards and surrogates. Transfer the contents to a purge vessel and run the standard.
7. Calculate the response factor for each compound. The RF's should differ by less than 30 percent from the average RF in the initial calibration.
8. Update the retention times of the Continuing Calibration Standard in the method. All injections for the 8 hour clock will be quantitated against the initial five point calibration.
9. Preparation and Analysis of Samples

001910

- a. Aqueous samples are not extracted. The samples are stored at 4 degrees C in 40 mL vials with no headspace until analysis. The holding time expires 14 days from the date of sampling.
 - b. Run a method blank by measuring 25 mL reagent water in a 30-mL glass syringe. Inject 5 uL of the surrogate solution and 5 uL of the internal standard solution into the sample. Then inject the contents through the Luer valve into the purging vessel of the purge and trap unit.
 - c. Measure a 25-mL aliquot of sample in a 30-mL glass syringe equipped with a Luer end and closed syringe valve. Inject 5 uL of the surrogate solution and 5 uL of the internal standard solution into the sample. Then inject the contents through the Luer valve into the purging vessel of the purge and trap unit.
 - d. Run a matrix spike and matrix spike duplicate by measuring additional 25-mL portions of a sample in the glass syringe. Then inject 5 uL of the daily standard solution, 5 uL of the surrogate solution and 5 uL of the internal standard solution into the sample. Then inject the contents through the Luer valve into the purging vessel of the purge and trap unit.
 - e. Prepare an LCS the same as the continuing calibration standard (see Section E.4).
 - f. When there are matrix interferences or compounds are detected above the calibration range, dilutions will be made with reagent water in the 30-mL glass syringe. The dilutions will be made so that the detected compounds will fall into the upper half of the calibration range.
 - g. Run the samples, spikes and LCS.
10. Autosampler/Manual Injection Sequence

The GC/MS system is calibrated by the continuing calibration standard for a 8 hour period, once the calibration criteria are met, as defined in section F. A typical batch sequence is as follows:

Sequence #	Sample Description	
1	50 ng BFB	
2	Continuing calibration standard	
3	LCS	
4	LCSD	001911
5	Reagent (method) blank	
6-17	Samples; matrix spikes (client request)	

F. Quality Control

1. An initial demonstration of laboratory capability is conducted as per Method 524.2, Revision 3.0.
2. The analytical batch is defined as a group of samples of similar matrix type analyzed in sequence within 8 hours of the injection of the BFB standard. The batch includes blanks, standards, and QC checks.
3. The following will be run within each analytical batch as minimum QC requirements:
 - a. Reagent (method) Blank
 - b. Continuing Calibration Check
 - c. Laboratory Control Standard
4. The maximum number of actual samples in a batch is determined by the 8 hour time limit, beginning with the injection of BFB. All QC analyses must be injected within that 8 hour period. The minimum batch size is one sample.
5. The BFB ion abundance criteria and sensitivity must be met before analysis can proceed.

The ion abundance criteria are:

mass	ion abundance
50	15 to 40% of mass 95
75	30 to 60% of mass 95
95	base peak, 100% relative abundance
96	5 to 9% of mass 95
173	less than 2% of mass 174
174	greater than 50% of mass 95
175	5 to 9% of mass 174
176	95 to 101% of mass 174
177	5 to 9% of mass 176

001912

If the criteria are not met, then the instrument must be retuned, or the source must be cleaned.

6. If the recovery of any compound in the matrix spike falls outside of control limits, then the recovery for that compound in the LCS must be checked. If the LCS recovery is in control, results may be reported. If the LCS recovery is out of control, no positive results may be reported for that compound.
7. For the initial calibration, the percent relative standard deviation [%RSD = (SD/avg RF) x 100] of the RF's must not exceed 30 percent. If these criteria are not met, troubleshoot the instrument and recalibrate.
8. For the continuing calibration, the response factors should differ from the average response factor in the initial calibration by less than 30%. If more than ten percent of the compounds are out, recalibrate.
9. If more than one surrogate recovery for any sample are out of control, then re-run that sample. All surrogates must be within control limits for DOD samples.
10. If two or more surrogate recoveries in a method blank or LCS are out of control, reanalyze the blank. If re-analysis does not solve the problem, prepare a new surrogate standard.
11. The internal standard area counts in any sample must fall between 50 and 200 percent of the internal standard area in the continuing calibration for that batch. If not, document the failure and re-run the sample.

G. Calculations and Data Review

1. Use the internal standard method of quantitation with Methylene chloride-d2, Fluorobenzene, and 1,2-Dichlorobenzene. Use the internal standard which is closest in retention time to the corresponding analyte.
2. Response factors (RF) are calculated for each compound at each calibration concentration as follows:

$$RF = \frac{(As) (Cs)}{(Ais) (Cs)}$$

Where A is the area of the quantitation ion of each compound, C is the concentration, and (s) and (is) denote the compound being measured and the internal standard, respectively.

3. Once a compound has been identified in a sample (see 4 below), its concentration is calculated as follows:

Aqueous samples:

001913

$$Cs, \text{ ug/L} = \frac{(As) (Is)}{(Ais) (RF) (Vs)}$$

where:

Cs = concentration of compound in sample
As = area of quantitation ion of compound in sample
Is = amount of internal standard added (ng)
Ais = area of quantitation ion of internal standard
RF = average response factor from initial calibration
Vs = volume of aqueous sample added to purge vessel

4. Qualitative Identification

- a. An analyte can be positively identified if the following two criteria are met. The first criterion relates to the reproducibility of the elution time of each analyte, from the standard to the sample. The relative retention time (RRT) of a compound in the sample must agree within ± 0.15 RRT units of the RRT from the mid-level standard.

Secondly, the mass spectra of the compound in the sample and in the standard or library are compared. All of the ions present in the standard spectrum at a level of greater than 10% relative abundance must be present in the sample spectrum as well. Additionally, the relative intensities of the major peaks must compare within $\pm 20\%$ to the standard spectrum.

- b. For samples containing components which are not present in the calibration, searches from the EPA/NIH library are performed. Applying similar spectral criteria as discussed above, the sample component and library searches are compared. Ions which are present in the sample spectrum but not the reference spectrum should be checked if they are due to a matrix or coeluting compound. If this is the case, subtracting out the ions can afford more accurate identifications.

H. Interferences

1. Interferences due to contamination from solvents, reagents, or glassware must be demonstrated to be absent by running a reagent blank with each batch.
2. Methylene chloride, acetone, and Freons can be ubiquitous contaminants in an environmental laboratory.

001914

I. References

1. Methods for the Determination of Organic Compounds in Drinking Water, EPA-600/4-88/039, December 1988. Method 524.2, Revision 3.0.

Reviewed and approved
L. Geddes 09/14/95
Issued _____

Standards Documentation

001916

: LIST STDS -- PREPARED STANDARD :
 : BC ANALYTICAL : GLEN LAB : 11:15:41 23 JAN 1997 - P. 1 :
 =====

Reviewed Init: _____
 Date: _____

STANDARDS DOCUMENTATION

Name: 524.2 STD RESTEK
 Date Prepared: 07/14/96
 Prepared by: DEBBIE KUNG
 Type: Calibration Standard

Reference #: V09607015
 Expiration Date: 12/02/96
 Total Volume: 1 ML

Solvent	Manufacturer	Lot#	%
METHANOL	B&J		99
Source	Amount	Component	Final Concentration
V09604009	100.0000 UL	Acetone	200.0000 PPM
		2-Hexanone	200.0000 PPM
		2-BUTANONE	200.0000 PPM
		Methyl isobutyl ketone	200.0000 PPM
V09606034	50.0000 UL	112-TRICHLORO-122-TRIFLUOROETH	50.0000 PPM
V09607014	50.0000 UL	F123	49.9000 PPM
V09606033	25.0000 UL	Dichlorodifluoromethane	50.0000 PPM
		Chloromethane	50.0000 PPM
		Vinyl chloride	50.0000 PPM
		Bromomethane	50.0000 PPM
		Chloroethane	50.0000 PPM
V09606027	25.0000 UL	Trichlorofluoromethane	50.0000 PPM
		1,1-Dichloroethene	50.0000 PPM
		Methylene chloride	50.0000 PPM
		trans-1,2-Dichloroethene	50.0000 PPM
		1,1-Dichloroethane	50.0000 PPM
		2,2-Dichloropropane	50.0000 PPM
		Chloroform	50.0000 PPM
		1,1,1-Trichloroethane	50.0000 PPM
		Carbon Tetrachloride	50.0000 PPM
		Bromodichloromethane	50.0000 PPM
		cis-1,3-Dichloropropene	50.0000 PPM
		trans-1,3-Dichloropropene	50.0000 PPM
		1,3-Dichloropropane	50.0000 PPM
		Bromoform	50.0000 PPM
V09606028	25.0000 UL	1,1,2-TRICHLOROETHANE	50.0000 PPM
		cis-1,2-Dichloroethene	50.0000 PPM
		Bromochloromethane	50.0000 PPM
		1,1-Dichloropropene	50.0000 PPM
		1,2-Dichloroethane	50.0000 PPM
		1,2-Dichloropropane	50.0000 PPM
		Dibromomethane	50.0000 PPM
		1,1,2-Trichloroethane	50.0000 PPM
		Tetrachloroethene	50.0000 PPM
		Dibromochloromethane	50.0000 PPM
		1,2-DIBROMOETHANE	50.0000 PPM
		1,1,1,2-Tetrachloroethane	50.0000 PPM
		1,1,2,2-Tetrachloroethane	50.0000 PPM
		1,2,3-Trichloropropane	50.0000 PPM
V09606029	25.0000 UL	1,2-Dibromo-3-chloropropane	50.0000 PPM
		Benzene	50.0000 PPM
		Toluene	50.0000 PPM

More on next page ...001917

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 11:15:44 23 JAN 1997 - P. 2 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 524.2 STD RESTEK

Reference #:V09607015

Source	Amount	Component	Final Concentration
		Chlorobenzene	50.0000 PPM
		m-Xyln	50.0000 PPM
		Styrene	50.0000 PPM
		Isopropylbenzene	50.0000 PPM
		N-Propylbenzene	50.0000 PPM
		1,3,5-Trimethylbenzene	50.0000 PPM
		tert-Butylbenzene	50.0000 PPM
V09606030	25.0000 UL	Ethylbenzene	50.0000 PPM
		p-Xyln	50.0000 PPM
		o-Xylene	50.0000 PPM
		Bromobenzene	50.0000 PPM
		2-Chlorotoluene	50.0000 PPM
		1,2,4-Trimethylbenzene	50.0000 PPM
		sec-Butylbenzene	50.0000 PPM
		1,3-Dichlorobenzene	50.0000 PPM
		N-Butylbenzene	50.0000 PPM
V09606031	25.0000 UL	1,2,4-Trichlorobenzene	50.0000 PPM
		4-Chlorotoluene	50.0000 PPM
		p-Isopropyl toluene	50.0000 PPM
		1,4-Dichlorobenzene	50.0000 PPM
		1,2-Dichlorobenzene	50.0000 PPM
		Hexachlorobutadiene	50.0000 PPM
		Naphthalene	50.0000 PPM
		1,2,3-Trichlorobenzene	50.0000 PPM

Disposal Method:
Verification Date: 07/14/96
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 11:15:44 23 JAN 1997 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 524.2 SSC
Date Prepared: 07/15/96
Prepared by: DEBBIE KUNG
Type: Calibration Standard

Reference #: V09607026
Expiration Date: 12/02/96
Total Volume: 1 ML

Solvent	Manufacturer	Lot#	%
METHANOL	B&J		99
Source	Amount	Component	Final Concentration
V09604009	100.0000 UL	Acetone	200.0000 PPM
		2-Hexanone	200.0000 PPM
		2-BUTANONE	200.0000 PPM
		Methyl isobutyl ketone	200.0000 PPM
V09606012	50.0000 UL	112-TRICHLORO-122-TRIFLUOROETH	50.0000 PPM
V09607020	50.0000 UL	F123	49.9000 PPM
V09601051	25.0000 UL	1,1-Dichloroethene	50.0000 PPM
		Methylene chloride	50.0000 PPM
		trans-1,2-Dichloroethene	50.0000 PPM
		1,1-Dichloroethane	50.0000 PPM
		2,2-Dichloropropane	50.0000 PPM
		Chloroform	50.0000 PPM
		1,1,1-Trichloroethane	50.0000 PPM
		Carbon Tetrachloride	50.0000 PPM
		Bromodichloromethane	50.0000 PPM
		cis-1,3-Dichloropropene	50.0000 PPM
		trans-1,3-Dichloropropene	50.0000 PPM
		1,3-Dichloropropane	50.0000 PPM
		Bromoform	50.0000 PPM
		1,1,2-TRICHLOROETHANE	50.0000 PPM
V09601052	25.0000 UL	cis-1,2-Dichloroethene	50.0000 PPM
		Bromochloromethane	50.0000 PPM
		1,1-Dichloropropene	50.0000 PPM
		1,2-Dichloroethane	50.0000 PPM
		1,2-Dichloropropane	50.0000 PPM
		Dibromomethane	50.0000 PPM
		1,1,2-Trichloroethane	50.0000 PPM
		Tetrachloroethene	50.0000 PPM
		Dibromochloromethane	50.0000 PPM
		1,2-DIBROMOETHANE	50.0000 PPM
		1,1,1,2-Tetrachloroethane	50.0000 PPM
		1,1,2,2-Tetrachloroethane	50.0000 PPM
		1,2,3-Trichloropropane	50.0000 PPM
		1,2-Dibromo-3-chloropropane	50.0000 PPM
V09601053	25.0000 UL	Benzene	50.0000 PPM
		Toluene	50.0000 PPM
		Chlorobenzene	50.0000 PPM
		m-Xyln	50.0000 PPM
		Styrene	50.0000 PPM
		Isopropylbenzene	50.0000 PPM
		N-Propylbenzene	50.0000 PPM
		1,3,5-Trimethylbenzene	50.0000 PPM

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 11:15:47 23 JAN 1997 - P. 2 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 524.2 SSC

Reference #:V09607026

Source	Amount	Component	Final Concentration
V09601054	25.0000 UL	tert-Butylbenzene	50.0000 PPM
		Ethylbenzene	50.0000 PPM
		p-Xylol	50.0000 PPM
		o-Xylene	50.0000 PPM
		Bromobenzene	50.0000 PPM
		2-Chlorotoluene	50.0000 PPM
		1,2,4-Trimethylbenzene	50.0000 PPM
		sec-Butylbenzene	50.0000 PPM
		1,3-Dichlorobenzene	50.0000 PPM
		N-Butylbenzene	50.0000 PPM
		1,2,4-Trichlorobenzene	50.0000 PPM
		4-Chlorotoluene	50.0000 PPM
V09601055	25.0000 UL	p-Isopropyl toluene	50.0000 PPM
		1,4-Dichlorobenzene	50.0000 PPM
		1,2-Dichlorobenzene	50.0000 PPM
		Hexachlorobutadiene	50.0000 PPM
		Naphthalene	50.0000 PPM
		1,2,3-Trichlorobenzene	50.0000 PPM
V09606040	25.0000 UL	Dichlorodifluoromethane	50.0000 PPM
		Chloromethane	50.0000 PPM
		Vinyl chloride	50.0000 PPM
		Bromomethane	50.0000 PPM
		Chloroethane	50.0000 PPM
		Trichlorofluoromethane	50.0000 PPM

Disposal Method:
Verification Date: 07/15/96
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:13:19 24 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 524.4 GAS SSC
Date Prepared: 07/14/96
Prepared by: DEBBIE KUNG
Type: Calibration Standard

Reference #: V09607022
Expiration Date: 12/02/96
Total Volume: 1 ML

Solvent	Manufacturer	Lot#	%
METHANOL	B&J	_____	99

Source	Amount	Component	Final Concentration
V09606012	50.0000 UL	112-TRICHLORO-122-TRIFLUOROETH	50.0000 PPM
V09607020	50.0000 UL	F123	49.9000 PPM
V09606009	25.0000 UL	Dichlorodifluoromethane	50.0000 PPM
		Chloromethane	50.0000 PPM
		Vinyl chloride	50.0000 PPM
		Bromomethane	50.0000 PPM
		Chloroethane	50.0000 PPM
		Trichlorofluoromethane	50.0000 PPM

Disposal Method:
Verification Date: 07/14/96
Hazard Class:

Disposal Date:

001921

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 11:15:47 23 JAN 1997 - P. 1 :

=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 4-BFB WORKING STD
Date Prepared: 06/27/96
Prepared by: DEBBIE KUNG
Type: Calibration Standard

Reference #: V09606038
Expiration Date: 12/27/96
Total Volume: 5 ML

Solvent	Manufacturer	Lot#	%
METHANOL	B&J	BE-181	100

Source	Amount	Component	Final Concentration
V09510036	0.0100 ML	<-- Prepared Source. Level 1 -->	
.V09510034	0.2500 G	aaa-TRIFLUOROTOLUENE	50.0000 PPM
.V09510035	0.2500 G	4-BROMOFLUOROBENZENE	50.0000 PPM

Disposal Method:
Verification Date: 06/27/96
Hazard Class: Health

Disposal Date:

Analysis Run Logs

From Page No. _____		BATCH# _____		524 JL	
		DATE <u>07/14/96</u>		524 JLS	
		ANALYST <u>mm</u>			
Count	Vehicle	File name	GL # / Sx 20 / client / Volume	Rem	P H
①		W63 93	50 mg BFB		
②		94	50 mg BFB		
	6	95	Method BIK		
③	6	96	0.5 ppB CRY. 2 str (/ V09607015		
	6	97	2		
	6	98	4		
	6	99	10		
	6	6400	20		
	6	01	30		
④	6	02	1050 ppB SSC str (
		6403	50 mg BFB		
③	6	07	5 ppB CRY. 2 str		
⑤		08	10 ppB CRY. 2 SSC str		
		6424	50 mg BFB		
⑥	6	27	10 ppB CRY. 2 SSC str (/ V09607026		
	7	38	1 / V09607026		

From Page No. _____

MISS =

- ① BFB failed
- ② BFB met the EPA criteria
- ③ V09607015 Calibration file = 15747L
- ④ GAS spiked double, V09607021 V09607022
- ⑤ GAS spiked double V09607
- ⑥ V09607026

To Page No. _____

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

001925

TITLE C: HP CHZM 11 DATA JUL 16

Project No. _____

Book No. _____

From Page No. _____

BATCH #

96421

DATE

107/16/1964

ANALYST

DMX

5XJL

5XJLS

		File name	Client	Unit	Rem	P	H	D.F
(1)	19	W6449	50 ng BFB	1ml				
(2)	20	50	10 ppB QCCS-1	2ml				
	21	51	10 ppB QCCS-1					
	22	52	Method BK					
	23	53	Method BK					
	24	54	1A G9607402-1 / Plant 4 / 1 Lockhead	1ml				
(3)	25	55	1A G9607189-1 / Pump BK / Sensor					5X
	26	56	1A G9607223-3 / Trailer BK /					10ml
	27	57	HA Wash -4					
	28	58	1A G9607223-4 / Trip BK / Sensor					
	29	60	3A G9607190-1 / GW-6					5X TCE
(4)	30	61	3A G9607191-18 / GW-1					
	31	62	3B -181 /					5X TCE
	32	63	3B -182 /					5X TCE
	1	64	50 ng BFB					
(1)	2	65	50 ng BFB					
(2)	5	66	10 ppB QCCS-3					
	6	67	-4					
	7	68	Wash					
	8	69	3A G9607191-2 / GW-2 / Sensor					
(6)	9	70	3A -4 / GW-9					10X TCE
(5)	10	71	3A G9607215-2 / GW-8					25X TCE
(7)	11	72	3A -3 / GW-10					50X TCE
	12	73	1A -4 / Field BK					1ml
	13	74	1A -5 / Trailer BK					1ml
	14	75	1A -6 / Trip BK					1ml
	15	76	1A G9607223-2 / Field BK					1ml
(8)	16	77	1A G9607191-3 / GW-3					5X TCE
	17	78	10 ppB QCCS-5					

To Page No. _____

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

001926

From Page No. _____

① BFB met the EPA criteria

VO9606038

② 11/11 spec I-111 passed

VO9607015

③ see W6491 6/18

④ see W6492 6/18

⑤ see W6489 6/18

⑥ see W6490 6/18

⑦

⑧ see W6504 6/18

To Page 1

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

001927

111

TITLE C: \HPCH2M\11 DATA\JUL 17

Project No. _____

Book No. _____

Page No. _____		BATCH # <u>96422</u>	DATE <u>07/18/96</u>	ANALYST <u>Drum</u>	<u>5747H</u>
(1)	W	W6479	50 ng BFB	1 ml	
(2)		80	50 ng BFB	↓	
(3)	18	81	VST 1010 / 10 ppB-SM.2	25 ml	
	19	82	10 ppB QCCS-1		
	20	83	Method-BK		
	21	84	Method BK		
	22	85	G9607215-1 / GW-7 / Seacor /		X 1 ml
	23	86	216-1 / GW-5 /		X 1 ml
	24	87	223-1 / GW-4 /		X 1 ml
	25	88	215-3 / GW-10 /		X 500
	26	89	215-2 / GW-8 /		X 500
	27	90	191-4 / GW-9 /		X 500
	28	91	189-1 / Pump BK /	5 ml	5
	29	92	191-1 / GW-1 /	5 ml	5
	30	93	10 ppB QCCS-2	25 ml	
(2)	31	94	50 ng BFB	5 ml	
(2)	32	95	50 ng BFB	5 ml	
	1	96	10 ppB QCCS-3	25 ml	
(34)	2	97	-4		
	3	98	Wash	↓	
	4	99	G9607403-1 / Plant eff / Lockheed	25 ml	X 25 ml
	5	6500	215-4 / Field BK / Seacor /		
	6	01	215-5 / Bunker BK /		
	7	02	215-6 / Trip BK /		X 25 ml
	8	03	223-2 / Field BK /		
	9	04	191-3 / GW-3 /	5 ml	5
	10	05	216-1 / GW-5 /	25 ml	
	11	06	215-1 / GW-7 /	10 ml	1000
	12	07	50 ng BFB G9607223-1	0.	10
		08	50 ng BFB		
		09	10 ppB QCCS-5		
		10	-6		

Continued next page

To Page No. _____

Witnessed & Understood by me, _____

Date _____

Invented by _____

Date _____

Recorded by _____

001928

From Page No. _____

① BFB failed

② BFB met the EPA criteria

③ 44 std passed 4 out of 130%

④ std passed 4 out of 130% as only

To Page No. _____

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

001929

|||

TITLE C-1 HPCHZM/11 DATA JUL 23

Project No. _____

Book No. _____

Form Page No. _____

BATCH # 96076
 DATE 07/23/96
 ANALYST DM

SKJL
SKJLS

10m	Vessel	File name	GL#	#	15x20	Client	Volume	Rem	P	DF
		W 6687	50mg	BFB						
2		88	VSTD010	SK2	Daily					
3		89	10ppB	QCLS-1						
4		90		-2						
5		91	Method	BK						
6		92	Method	BK						
7		93	G9607215-6	1	Seacor	1	SKM			
8		94	-3	1	1	↓	1			500
9		95	403-1	1	1	Lockheed	1			
10		96	605-1	1	1	1	1			
6		97	403-1	1	1	1	1			
6		98	605-1	1	1	1	1			
6		99	G9607493-1							
11		6900	G9607215-1							20
		ot								

To Page No. _____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	001930

Project No. _____

Book No. _____ TITLE _____

From Page No. _____

V09607035

Date 7/23/96

- ① BFB met the EPA criteria ~~V09607037~~ V09607030
- ② 11/11 passed all all met $\pm 25\%$ ~~V09607037~~ V09607038
- ③ 11/11 passed all met $\pm 15\%$ except 2,2 DCP. V09607037

To Page No. _____

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

001931

Initial Calibrations:

Response Factor Report VOA3

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 09:03:08 1996
 Response via : Initial Calibration

All met $\pm 7\%$
 except acetone

524JL
 524JLS

Calibration Files

1 =W6397.D 2 =W6398.D 3 =W6399.D
 4 =W6400.D 5 =W6401.D

Compound	1	2	3	4	5	Avg	%RSD
-----ISTD-----							
1) Fluorobenzene	0.299	0.306	0.364	0.413	0.418	0.360	15.73
2) Dichlorodifluoromethane	0.099	0.108	0.115	0.121	0.118	0.112	7.86
3) Chloromethane	0.114	0.125	0.135	0.145	0.142	0.132	9.60
4) Vinyl Chloride	0.187	0.197	0.201	0.216	0.213	0.203	5.98
5) Bromomethane	0.082	0.087	0.094	0.100	0.099	0.092#	8.52
6) Chloroethane	0.402	0.428	0.504	0.525	0.520	0.476	11.95
7) Freon 123	0.395	0.423	0.511	0.546	0.550	0.485	14.74
8) Trichlorofluoromethane	0.012	0.010	0.007	0.008	0.005	0.009#	28.78
9) Acetone	0.167	0.178	0.202	0.213	0.216	0.195	11.19
10) 1,1-Dichloroethene	0.346	0.379	0.452	0.476	0.492	0.429	14.82
11) Freon 113	0.134	0.147	0.140	0.146	0.142	0.142	3.84
12) Methylene Chloride	0.173	0.185	0.199	0.205	0.206	0.193	7.36
13) 1,2-Dichloroethene (trans)	0.272	0.285	0.287	0.286	0.294	0.285	2.77
14) 1,1-Dichloroethane	0.013	0.012	0.015	0.015	0.009	0.013#	17.80
15) Methyl Ethyl Ketone	0.398	0.303	0.471	0.480	0.481	0.427	18.13
16) 2,2-Dichloropropane	0.220	0.202	0.189	0.247	0.293	0.230	17.99
17) 1,2-Dichloroethene (cis-)	0.181	0.191	0.186	0.190	0.181	0.186	2.53
18) Bromochloromethane	0.317	0.522	0.476	0.517	0.549	0.476	19.50
19) Chloroform	0.368	0.384	0.451	0.461	0.464	0.426	10.76
20) 1,1-Dichloropropene	0.214	0.232	0.214	0.218	0.206	0.217	4.48
21) 1,2-Dichloroethane	0.497	0.520	0.604	0.614	0.625	0.572	10.31
22) 1,1,1-Trichloroethane	0.436	0.470	0.574	0.589	0.602	0.534	14.17
23) Carbon Tetrachloride	0.734	0.766	0.773	0.792	0.773	0.767	2.75
24) Benzene	0.376	0.389	0.427	0.431	0.426	0.410	6.18
25) Trichloroethene	0.258	0.274	0.264	0.268	0.256	0.264	2.77
26) 1,2-Dichloropropane	0.193	0.202	0.192	0.191	0.181	0.192	3.91
27) Dibromomethane	0.464	0.496	0.491	0.493	0.479	0.485	2.72
28) Bromodichloromethane	0.062	0.060	0.053	0.053	0.038	0.053#	17.83
29) Methyl Isobutyl Ketone	0.341	0.353	0.347	0.351	0.337	0.346	2.01
30) cis-1,3-Dichloropropene	0.246	0.253	0.241	0.247	0.239	0.245	2.19
31) trans-1,3-Dichloropropene	0.244	0.253	0.241	0.239	0.231	0.242	3.28
32) 1,3-Dichloropropane	0.346	0.353	0.345	0.349	0.337	0.346	1.76
33) Dibromochloromethane	0.171	0.174	0.173	0.176	0.169	0.173	1.58
34) Bromoform	0.540	0.557	0.590	0.593	0.590	0.574	4.21
35) Toluene	0.181	0.185	0.174	0.170	0.164	0.175	4.83
36) 1,1,2-Trichloroethane	0.384	0.395	0.447	0.444	0.443	0.423	7.24
37) Tetrachloroethene	0.250	0.254	0.244	0.241	0.233	0.244	3.33
38) 1,2-Dibromoethane	0.742	0.768	0.776	0.767	0.755	0.762	1.75
39) Chlorobenzene	0.357	0.367	0.357	0.355	0.342	0.356	2.46
40) 1,1,1,2-Tetrachloroethane	0.375	0.372	0.398	0.375	0.381	0.380	2.83
41) Ethylbenzene	0.454	0.460	0.472	0.457	0.458	0.460	1.51
42) m,p-Xylenes	0.427	0.426	0.437	0.431	0.431	0.430	0.99
43) o-Xylene	0.643	0.665	0.660	0.658	0.649	0.655	1.37
44) Styrene	0.565	0.547	0.552	0.592	0.620	0.575	5.31
45) S 1,2-Dichlorobenzene-d4	1.243	1.246	1.378	1.328	1.334	1.306	4.55
46) Isopropylbenzene	0.573	0.549	0.529	0.534	0.528	0.543	3.47
47) S Bromofluorobenzene	0.696	0.681	0.661	0.628	0.611	0.655	5.42
48) Bromobenzene	0.215	0.212	0.195	0.192	0.188	0.200	6.07
49) 1,1,2,2-Tetrachloroethane							

50)	1,2,3-Trichloropropane	0.127	0.116	0.119	0.103	0.085	0.110	14.83
51)	n-Propylbenzene	1.515	1.506	1.646	1.576	1.589	1.566	3.66
52)	2-Chlorotoluene	1.098	1.078	1.047	0.998	1.060	1.056	3.59
53)	4-Chlorotoluene	0.935	0.989	0.961	0.927	0.884	0.939	4.16
54)	1,3,5-Trimethylbenzene	0.963	0.948	1.000	0.941	0.921	0.955	3.08
55)	Tert-Butylbenzene	1.036	1.027	1.121	1.067	1.065	1.063	3.47
56)	1,2,4-Trimethylbenzene	0.977	0.976	0.992	0.947	0.926	0.964	2.76
57)	Sec-Butylbenzene	1.507	1.512	1.679	1.568	1.567	1.566	4.43
58)	1,3-Dichlorobenzene	0.687	0.683	0.664	0.632	0.612	0.656	5.00
59)	1,4-Dichlorobenzene	0.699	0.686	0.671	0.633	0.609	0.660	5.71
60)	p-Isopropyltoluene	1.157	1.165	1.280	1.202	1.182	1.197	4.12
61)	1,2-Dichlorobenzene	0.549	0.550	0.521	0.502	0.477	0.520	6.04
62)	n-Butylbenzene	1.179	1.177	1.309	1.211	1.200	1.215	4.49
63)	1,2-Dibromo-3-Chloropropa	0.034	0.034	0.033	0.034	0.033	0.034#	1.29
64)	1,2,4-Trichlorobenzene	0.480	0.493	0.476	0.471	0.458	0.476	2.70
65)	Naphthalene	0.432	0.417	0.379	0.380	0.371	0.396	6.76
66)	Hexachlorobutadiene	0.398	0.417	0.468	0.441	0.444	0.434	6.16
67)	1,2,3-Trichlorobenzene	0.370	0.386	0.360	0.359	0.351	0.365	3.65

 (#) = Out of Range

524JL.M

Tue Jul 16 09:03:35 1996

VOA3

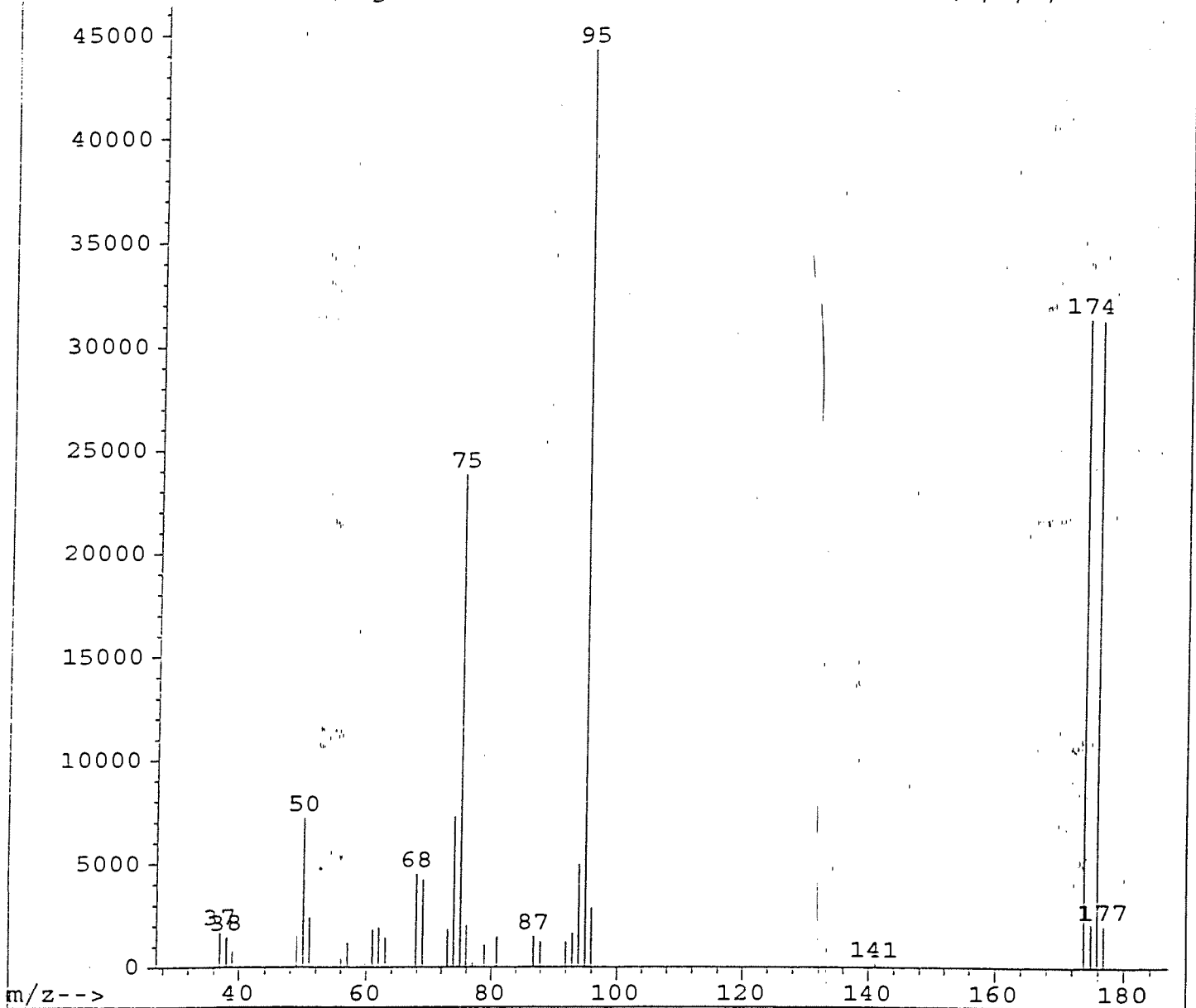
001934

BFB 624 Results

C:\HPCHEM\1\DATA\JUL14\W6394.D

Sun Jul 14 07:29:38 1996

Abundance Average of 3.927 to 3.946 min.: W6394.D (+, -, *)



Peak Apex is scan: 42

Average of 3 scans: 41,42,43 minus background scan 33

Target Mass	Comparison Mass	Lower Limit, %	Upper Limit, %	Relative Abundance, %	Result Pass/Fail
50	95	15	40	16.3	PASS
75	95	30	60	53.8	PASS
95	95	100	100	100.0	PASS
96	95	5	9	6.5	PASS
173	174	0	2	0.0	PASS
174	95	50	100	71.0	PASS
175	174	5	9	6.7	PASS
176	174	95	101	99.8	PASS
177	176	5	9	6.4	PASS

001935

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL14\W6395.D
 Acq Time : 14 Jul 96 7:32 am
 Sample : METHOD-BLANK/5PTS
 Misc : 25ML/VO9604007
 Quant Time: Jul 16 9:49 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 09:08:46 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.03	96	180214	10.00	ug/l	-0.09
System Monitoring Compounds				%Recovery		
45) 1,2-Dichlorobenzene-d4	24.80	150	141552	13.65	ug/l	136.49%
47) Bromofluorobenzene	21.34	95	138664	14.18	ug/l	141.82%
Target Compounds				Qvalue		
2) Dichlorodifluoromethane	0.00	85		Not Detected		
3) Chloromethane	3.52	50	662	0.33	ug/l #	44
4) Vinyl Chloride	0.00	62		Not Detected		
5) Bromomethane	4.33	94	8002	2.19	ug/l	80
6) Chloroethane	0.00	64		Not Detected		
7) Freon 123	0.00	83		Not Detected		
8) Trichlorofluoromethane	0.00	101		Not Detected		
9) Acetone	5.52	43	9471	61.70	ug/l	100
10) 1,1-Dichloroethene	0.00	96		Not Detected		
11) Freon 113	0.00	101		Not Detected		
12) Methylene Chloride	0.00	84		Not Detected		
13) 1,2-Dichloroethene (trans-	0.00	96		Not Detected		
14) 1,1-Dichloroethane	0.00	63		Not Detected		
15) Methyl Ethyl Ketone	8.86	43	449	1.93	ug/l #	100
16) 2,2-Dichloropropane	0.00	77		Not Detected		
17) 1,2-Dichloroethene (cis-)	0.00	96		Not Detected		
18) Bromochloromethane	0.00	130		Not Detected		
19) Chloroform	0.00	83		Not Detected		
20) 1,1-Dichloropropene	0.00	75		Not Detected		
21) 1,2-Dichloroethane	10.55	62	483	0.12	ug/l #	48
22) 1,1,1-Trichloroethane	0.00	97		Not Detected		
23) Carbon Tetrachloride	0.00	117		Not Detected		
24) Benzene	10.62	78	4013	0.29	ug/l	100
25) Trichloroethene	11.90	130	915	0.12	ug/l #	20
26) 1,2-Dichloropropane	0.00	63		Not Detected		
27) Dibromomethane	12.91	174	858	0.25	ug/l #	28
28) Bromodichloromethane	0.00	83		Not Detected		
29) Methyl Isobutyl Ketone	13.62	43	302	0.32	ug/l #	48
30) cis-1,3-Dichloropropene	0.00	75		Not Detected		
31) trans-1,3-Dichloropropene	0.00	75		Not Detected		
32) 1,3-Dichloropropane	16.31	76	2140	0.49	ug/l #	77
33) Dibromochloromethane	0.00	129		Not Detected		
34) Bromoform	0.00	173		Not Detected		
35) Toluene	14.82	92	6766	0.65	ug/l	100
36) 1,1,2-Trichloroethane	15.66	97	853	0.27	ug/l	47
37) Tetrachloroethene	16.50	164	870	0.11	ug/l #	60
38) 1,2-Dibromoethane	17.48	107	2172	0.49	ug/l	96
39) Chlorobenzene	18.51	112	3453	0.25	ug/l	65
40) 1,1,1,2-Tetrachloroethane	0.00	131		Not Detected		
41) Ethylbenzene	18.66	106	1756	0.26	ug/l	77
42) m,p-Xylenes	18.85	106	4558	0.55	ug/l	97

001936

43)	o-Xylene	19.86	106	2448	0.32 ug/l		82
44)	Styrene	19.96	104	2834	0.24 ug/l	#	36
46)	Isopropylbenzene	20.73	105	3803	0.16 ug/l	#	56
48)	Bromobenzene	21.80	77	5667	0.48 ug/l		80
49)	1,1,2,2-Tetrachloroethane	21.14	83	5767	1.60 ug/l		97
50)	1,2,3-Trichloropropane	21.49	75	4825	2.44 ug/l	#	39
51)	n-Propylbenzene	21.74	91	6080	0.22 ug/l		77
52)	2-Chlorotoluene	22.17	91	4555	0.24 ug/l		68
53)	4-Chlorotoluene	22.17	91	4555	0.27 ug/l		67
54)	1,3,5-Trimethylbenzene	22.13	105	4873	0.28 ug/l	#	58
55)	Tert-Butylbenzene	22.95	119	2545	0.13 ug/l	#	77
56)	1,2,4-Trimethylbenzene	23.01	105	8574	0.49 ug/l		73
57)	Sec-Butylbenzene	23.42	105	5530	0.20 ug/l	#	74
58)	1,3-Dichlorobenzene	0.00	146		Not Detected		
59)	1,4-Dichlorobenzene	23.87	146	4843	0.41 ug/l	#	94
60)	p-Isopropyltoluene	23.70	119	4417	0.20 ug/l		81
61)	1,2-Dichlorobenzene	24.85	146	5246	0.56 ug/l		85
62)	n-Butylbenzene	24.55	91	6299	0.29 ug/l		96
63)	1,2-Dibromo-3-Chloropropan	26.33	75	1308	2.16 ug/l	#	1
64)	1,2,4-Trichlorobenzene	28.06	180	6808	0.79 ug/l		99
65)	Naphthalene	28.62	128	39180	5.49 ug/l		98
66)	Hexachlorobutadiene	0.00	225		Not Detected		
67)	1,2,3-Trichlorobenzene	29.17	180	7927	1.20 ug/l		98

(#) = qualifier out of range (m) = manual integration

W6395.D

524JL.M

Tue Jul 16 09:49:16 1996

VOA3

001937

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL14\W6396.D
 Acq Time : 14 Jul 96 8:11 am
 Sample : 0.5PPB 524.2 STD/5PTS
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 9:24 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 09:08:46 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.12	96	833459	10.00	ug/l	0.00
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.81	150	435939	9.09	ug/l	90.89%
47) Bromofluorobenzene	21.36	95	448188	9.91	ug/l	99.11%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.21	85	11851	0.40	ug/l	94
3) Chloromethane	3.57	50	4084	0.44	ug/l	100
4) Vinyl Chloride	3.75	62	4404	0.40	ug/l	93
5) Bromomethane	4.40	94	8687	0.51	ug/l	94
6) Chloroethane	4.52	64	2801	0.36	ug/l	73
7) Freon 123	4.85	83	16913	0.43	ug/l	# 29
8) Trichlorofluoromethane	4.90	101	16542	0.41	ug/l	99
9) Acetone	5.61	43	1451	2.04	ug/l	# 100
10) 1,1-Dichloroethene	5.80	96	6946	0.43	ug/l	86
11) Freon 113	5.51	101	13651	0.38	ug/l	94
12) Methylene Chloride	6.53	84	5040	0.43	ug/l	85
13) 1,2-Dichloroethene (trans-	7.02	96	6809	0.42	ug/l	99
14) 1,1-Dichloroethane	7.73	63	10578	0.45	ug/l	90
15) Methyl Ethyl Ketone	8.74	43	244	0.23	ug/l	# 100
16) 2,2-Dichloropropane	8.72	77	11000	0.31	ug/l	# 70
17) 1,2-Dichloroethene (cis-)	8.78	96	6078	0.32	ug/l	87
18) Bromochloromethane	9.39	130	6551	0.42	ug/l	87
19) Chloroform	9.07	83	12519	0.32	ug/l	97
20) 1,1-Dichloropropene	10.15	75	14729	0.42	ug/l	93
21) 1,2-Dichloroethane	10.63	62	7812	0.43	ug/l	76
22) 1,1,1-Trichloroethane	9.86	97	20416	0.43	ug/l	93
23) Carbon Tetrachloride	10.38	117	17017	0.38	ug/l	94
24) Benzene	10.69	78	29476	0.46	ug/l	100
25) Trichloroethene	11.96	130	15120	0.44	ug/l	97
26) 1,2-Dichloropropane	12.33	63	9651	0.44	ug/l	47
27) Dibromomethane	12.97	174	7472	0.47	ug/l	94
28) Bromodichloromethane	12.84	83	17281	0.43	ug/l	95
29) Methyl Isobutyl Ketone	13.60	43	5231	1.18	ug/l	68
30) cis-1,3-Dichloropropene	14.07	75	11996	0.42	ug/l	83
31) trans-1,3-Dichloropropene	15.31	75	8351	0.41	ug/l	91
32) 1,3-Dichloropropane	16.35	76	9635	0.48	ug/l	90
33) Dibromochloromethane	17.02	129	12028	0.42	ug/l	94
34) Bromoform	20.74	173	3447	0.24	ug/l	# 100
35) Toluene	14.88	92	22018	0.46	ug/l	97
36) 1,1,2-Trichloroethane	15.71	97	6352	0.44	ug/l	98
37) Tetrachloroethene	16.56	164	15500	0.44	ug/l	92
38) 1,2-Dibromoethane	17.54	107	9126	0.45	ug/l	94
39) Chlorobenzene	18.54	112	28427	0.45	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.64	131	13164	0.44	ug/l	93
41) Ethylbenzene	18.68	106	14265	0.45	ug/l	m 38
42) m,p-Xylenes	18.88	106	26221	0.05	ug/l	04

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43)	o-Xylene	19.89	106	16314	0.45 ug/l	90
44)	Styrene	19.97	104	24444	0.45 ug/l	95
46)	Isopropylbenzene	20.74	105	49151	0.45 ug/l	98
48)	Bromobenzene	21.81	77	26639	0.49 ug/l	96
49)	1,1,2,2-Tetrachloroethane	21.18	83	8169	0.49 ug/l	90
50)	1,2,3-Trichloropropane	21.81	75	1704	0.19 ug/l #	39
51)	n-Propylbenzene	21.75	91	59349	0.45 ug/l	95
52)	2-Chlorotoluene	22.15	91	43203	0.49 ug/l m	86
53)	4-Chlorotoluene	22.27	91	37306	0.48 ug/l	87
54)	1,3,5-Trimethylbenzene	22.12	105	36779	0.46 ug/l	98
55)	Tert-Butylbenzene	22.94	119	40665	0.46 ug/l	99
56)	1,2,4-Trimethylbenzene	23.03	105	37659	0.47 ug/l	100
57)	Sec-Butylbenzene	23.41	105	59968	0.46 ug/l	98
58)	1,3-Dichlorobenzene	23.90	146	26038	0.48 ug/l	97
59)	1,4-Dichlorobenzene	24.12	146	26811	0.49 ug/l	100
60)	p-Isopropyltoluene	23.71	119	46453	0.47 ug/l	100
61)	1,2-Dichlorobenzene	24.87	146	19768	0.46 ug/l	86
62)	n-Butylbenzene	24.57	91	46218	0.46 ug/l	99
63)	1,2-Dibromo-3-Chloropropan	26.37	75	820	0.29 ug/l #	40
64)	1,2,4-Trichlorobenzene	28.07	180	17821	0.45 ug/l	96
65)	Naphthalene	28.62	128	17990	0.55 ug/l	96
66)	Hexachlorobutadiene	28.38	225	17377	0.48 ug/l	78
67)	1,2,3-Trichlorobenzene	29.18	180	14338	0.47 ug/l	100

(#) = qualifier out of range (m) = manual integration

W6396.D

524JL.M

Tue Jul 16 09:24:59 1996

VOA3

001939

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL14\W6397.D
 Acq Time : 14 Jul 96 8:51 am
 Sample : 2PPB 524.2 STD/5PTS
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 9:29 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 09:08:46 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.12	96	552271	10.00	ug/l	0.00
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.82	150	312218	9.82	ug/l	98.24%
47) Bromofluorobenzene	21.36	95	316215	10.55	ug/l	105.53%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.22	85	33059	1.66	ug/l	99
3) Chloromethane	3.58	50	10895	1.76	ug/l	96
4) Vinyl Chloride	3.75	62	12563	1.72	ug/l	93
5) Bromomethane	4.41	94	20622	1.84	ug/l	98
6) Chloroethane	4.51	64	9014	1.77	ug/l	94
7) Freon 123	4.86	83	44388	1.69	ug/l	97
8) Trichlorofluoromethane	4.89	101	43660	1.63	ug/l	98
9) Acetone	5.62	43	3546	7.54	ug/l	100
10) 1,1-Dichloroethene	5.81	96	18449	1.71	ug/l	98
11) Freon 113	5.53	101	38192	1.61	ug/l	98
12) Methylene Chloride	6.54	84	14756	1.89	ug/l	95
13) 1,2-Dichloroethene (trans-	7.03	96	19080	1.79	ug/l	98
14) 1,1-Dichloroethane	7.73	63	30039	1.91	ug/l	97
15) Methyl Ethyl Ketone	8.44	43	5624	7.91	ug/l	m 100
16) 2,2-Dichloropropane	8.72	77	29096	1.23	ug/l	87
17) 1,2-Dichloroethene (cis-)	8.80	96	19366	1.52	ug/l	99
18) Bromochloromethane	9.41	130	20039	1.95	ug/l	87
19) Chloroform	9.08	83	34986	1.33	ug/l	97
20) 1,1-Dichloropropene	10.16	75	40641	1.73	ug/l	97
21) 1,2-Dichloroethane	10.64	62	23614	1.97	ug/l	94
22) 1,1,1-Trichloroethane	9.87	97	54847	1.74	ug/l	97
23) Carbon Tetrachloride	10.38	117	48209	1.63	ug/l	100
24) Benzene	10.70	78	81074	1.91	ug/l	100
25) Trichloroethene	11.97	130	41519	1.83	ug/l	97
26) 1,2-Dichloropropane	12.35	63	28490	1.96	ug/l	51
27) Dibromomethane	12.96	174	21354	2.01	ug/l	86
28) Bromodichloromethane	12.84	83	51274	1.92	ug/l	98
29) Methyl Isobutyl Ketone	13.62	43	27455	9.35	ug/l	81
30) cis-1,3-Dichloropropene	14.06	75	37666	1.97	ug/l	96
31) trans-1,3-Dichloropropene	15.32	75	27188	2.01	ug/l	99
32) 1,3-Dichloropropane	16.37	76	26976	2.02	ug/l	95
33) Dibromochloromethane	17.02	129	38200	2.00	ug/l	99
34) Bromoform	20.73	173	18850	1.98	ug/l	# 100
35) Toluene	14.87	92	59634	1.88	ug/l	98
36) 1,1,2-Trichloroethane	15.73	97	19941	2.07	ug/l	95
37) Tetrachloroethene	16.55	164	42391	1.82	ug/l	96
38) 1,2-Dibromoethane	17.53	107	27561	2.04	ug/l	99
39) Chlorobenzene	18.55	112	81939	1.95	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.65	131	39453	2.01	ug/l	96
41) Ethylbenzene	18.68	106	40510	1.93	ug/l	m 37
42) m,p-Xylenes	18.87	106	100260	2.84	ug/l	99

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43)	o-Xylene	19.88	106	47110	1.98 ug/l	88
44)	Styrene	19.98	104	71034	1.96 ug/l	96
46)	Isopropylbenzene	20.74	105	137263	1.90 ug/l	97
48)	Bromobenzene	21.82	77	76864	2.12 ug/l	96
49)	1,1,2,2-Tetrachloroethane	21.17	83	23751	2.15 ug/l	97
50)	1,2,3-Trichloropropane	21.53	75	13989	2.31 ug/l	95
51)	n-Propylbenzene	21.75	91	167338	1.93 ug/l	94
52)	2-Chlorotoluene	22.14	91	121193	2.08 ug/l m	83
53)	4-Chlorotoluene	22.27	91	103287	1.99 ug/l	82
54)	1,3,5-Trimethylbenzene	22.12	105	106394	2.02 ug/l	98
55)	Tert-Butylbenzene	22.94	119	114401	1.95 ug/l	99
56)	1,2,4-Trimethylbenzene	23.03	105	107862	2.03 ug/l	99
57)	Sec-Butylbenzene	23.42	105	166403	1.92 ug/l	98
58)	1,3-Dichlorobenzene	23.89	146	75870	2.10 ug/l	99
59)	1,4-Dichlorobenzene	24.12	146	77247	2.12 ug/l	98
60)	p-Isopropyltoluene	23.72	119	127843	1.93 ug/l	98
61)	1,2-Dichlorobenzene	24.88	146	60633	2.11 ug/l	99
62)	n-Butylbenzene	24.57	91	130256	1.94 ug/l	99
63)	1,2-Dibromo-3-Chloropropan	26.37	75	3708	2.00 ug/l	76
64)	1,2,4-Trichlorobenzene	28.09	180	53041	2.02 ug/l	94
65)	Naphthalene	28.63	128	47699	2.18 ug/l	99
66)	Hexachlorobutadiene	28.39	225	43980	1.84 ug/l	97
67)	1,2,3-Trichlorobenzene	29.19	180	40815	2.02 ug/l	98

(#) = qualifier out of range (m) = manual integration

W6397.D 524JL.M Tue Jul 16 09:29:26 1996 VOA3

001941

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL14\W6398.D
 Acq Time : 14 Jul 96 9:29 am
 Sample : 4PPB 524.2 STD/5PTS
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 9:34 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 09:08:46 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.14	96	480527	10.00	ug/l	0.02
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.82	150	262947	9.51	ug/l	95.09%
47) Bromofluorobenzene	21.36	95	263972	10.12	ug/l	101.25%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.22	85	58751	3.40	ug/l	97
3) Chloromethane	3.57	50	20839	3.87	ug/l	93
4) Vinyl Chloride	3.75	62	24117	3.80	ug/l	96
5) Bromomethane	4.41	94	37904	3.89	ug/l	92
6) Chloroethane	4.52	64	16801	3.78	ug/l	90
7) Freon 123	4.87	83	82253	3.60	ug/l	100
8) Trichlorofluoromethane	4.91	101	81274	3.49	ug/l	95
9) Acetone	5.64	43	7479	18.27	ug/l	100
10) 1,1-Dichloroethene	5.82	96	34167	3.64	ug/l	98
11) Freon 113	5.54	101	72785	3.53	ug/l	97
12) Methylene Chloride	6.55	84	28282	4.15	ug/l	94
13) 1,2-Dichloroethene (trans-)	7.04	96	35570	3.83	ug/l	98
14) 1,1-Dichloroethane	7.74	63	54873	4.01	ug/l	100
15) Methyl Ethyl Ketone	8.49	43	9366	15.13	ug/l m	100
16) 2,2-Dichloropropane	8.74	77	51411	2.51	ug/l	99
17) 1,2-Dichloroethene (cis-)	8.81	96	36116	3.27	ug/l	100
18) Bromochloromethane	9.43	130	36730	4.12	ug/l	89
19) Chloroform	9.11	83	100370	4.39	ug/l	100
20) 1,1-Dichloropropene	10.19	75	73902	3.61	ug/l	98
21) 1,2-Dichloroethane	10.67	62	44657	4.29	ug/l	98
22) 1,1,1-Trichloroethane	9.88	97	99977	3.64	ug/l	96
23) Carbon Tetrachloride	10.39	117	90352	3.52	ug/l	99
24) Benzene	10.71	78	147160	3.99	ug/l	100
25) Trichloroethene	11.99	130	74819	3.80	ug/l	97
26) 1,2-Dichloropropane	12.35	63	52612	4.15	ug/l	53
27) Dibromomethane	12.99	174	38886	4.21	ug/l	83
28) Bromodichloromethane	12.86	83	95419	4.10	ug/l	98
29) Methyl Isobutyl Ketone	13.63	43	46004	18.01	ug/l	85
30) cis-1,3-Dichloropropene	14.08	75	67884	4.08	ug/l	96
31) trans-1,3-Dichloropropene	15.33	75	48547	4.12	ug/l	96
32) 1,3-Dichloropropane	16.38	76	48663	4.19	ug/l	96
33) Dibromochloromethane	17.03	129	67860	4.08	ug/l	100
34) Bromoform	20.76	173	33494	4.04	ug/l #	100
35) Toluene	14.90	92	107139	3.88	ug/l	100
36) 1,1,2-Trichloroethane	15.75	97	35559	4.24	ug/l	98
37) Tetrachloroethene	16.56	164	75912	3.74	ug/l	96
38) 1,2-Dibromoethane	17.54	107	48762	4.16	ug/l	98
39) Chlorobenzene	18.56	112	147667	4.03	ug/l	99
40) 1,1,1,2-Tetrachloroethane	18.66	131	70489	4.12	ug/l	96
41) Ethylbenzene	18.69	106	70189	3.84	ug/l m	36
42) m,p-Xylenes	18.88	106	176690	7.99	ug/l	91

001942

43)	o-Xylene	19.91	106	81928	3.96 ug/l	92
44)	Styrene	19.98	104	127881	4.06 ug/l	97
46)	Isopropylbenzene	20.76	105	239407	3.82 ug/l	97
48)	Bromobenzene	21.84	77	130933	4.16 ug/l	96
49)	1,1,2,2-Tetrachloroethane	21.18	83	40671	4.22 ug/l	99
50)	1,2,3-Trichloropropane	21.53	75	22272	4.22 ug/l	100
51)	n-Propylbenzene	21.76	91	289556	3.85 ug/l	95
52)	2-Chlorotoluene	22.17	91	207286	4.08 ug/l m	87
53)	4-Chlorotoluene	22.28	91	190036	4.21 ug/l	86
54)	1,3,5-Trimethylbenzene	22.15	105	182238	3.97 ug/l	97
55)	Tert-Butylbenzene	22.96	119	197345	3.86 ug/l	99
56)	1,2,4-Trimethylbenzene	23.04	105	187647	4.05 ug/l	99
57)	Sec-Butylbenzene	23.43	105	290586	3.86 ug/l	98
58)	1,3-Dichlorobenzene	23.90	146	131360	4.17 ug/l	99
59)	1,4-Dichlorobenzene	24.13	146	131832	4.16 ug/l	99
60)	p-Isopropyltoluene	23.73	119	224010	3.89 ug/l	98
61)	1,2-Dichlorobenzene	24.87	146	105745	4.23 ug/l	97
62)	n-Butylbenzene	24.58	91	226241	3.87 ug/l	99
63)	1,2-Dibromo-3-Chloropropan	26.36	75	6508	4.03 ug/l	72
64)	1,2,4-Trichlorobenzene	28.08	180	94701	4.14 ug/l	95
65)	Naphthalene	28.63	128	80120	4.21 ug/l	97
66)	Hexachlorobutadiene	28.38	225	80159	3.85 ug/l	96
67)	1,2,3-Trichlorobenzene	29.19	180	74186	4.23 ug/l	97

(#) = qualifier out of range (m) = manual integration

W6398.D 524JL.M

Tue Jul 16 09:34:25 1996

VOA3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL14\W6399.D
 Acq Time : 14 Jul 96 10:06 am
 Sample : 10PPB 524.2 STD/5PTS
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 9:47 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 09:08:46 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.13	96	477469	10.00	ug/l	0.01
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.80	150	263665	9.60	ug/l	95.96%
47) Bromofluorobenzene	21.36	95	252597	9.75	ug/l	97.51%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.22	85	173615	10.10	ug/l	97
3) Chloromethane	3.57	50	54736	10.23	ug/l	94
4) Vinyl Chloride	3.75	62	64266	10.19	ug/l	95
5) Bromomethane	4.40	94	95734	9.89	ug/l	94
6) Chloroethane	4.51	64	44794	10.15	ug/l	94
7) Freon 123	4.86	83	240574	10.59	ug/l	99
8) Trichlorofluoromethane	4.90	101	243748	10.53	ug/l	100
9) Acetone	5.61	43	13799	33.93	ug/l	100
10) 1,1-Dichloroethene	5.81	96	96302	10.33	ug/l	97
11) Freon 113	5.53	101	215585	10.53	ug/l	97
12) Methylene Chloride	6.55	84	66823	9.87	ug/l	92
13) 1,2-Dichloroethene (trans-)	7.04	96	94889	10.27	ug/l	97
14) 1,1-Dichloroethane	7.73	63	137055	10.08	ug/l	98
15) Methyl Ethyl Ketone	8.49	43	26645	43.32	ug/l	100
16) 2,2-Dichloropropane	8.74	77	224998	11.04	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.81	96	142668	12.98	ug/l	95
18) Bromochloromethane	9.43	130	88571	9.99	ug/l	88
19) Chloroform	9.11	83	263314	11.58	ug/l	99
20) 1,1-Dichloropropene	10.18	75	215208	10.59	ug/l	98
21) 1,2-Dichloroethane	10.67	62	101989	9.85	ug/l	97
22) 1,1,1-Trichloroethane	9.88	97	288244	10.56	ug/l	95
23) Carbon Tetrachloride	10.39	117	274208	10.74	ug/l	99
24) Benzene	10.73	78	369435	10.08	ug/l	m 100
25) Trichloroethene	11.97	130	204051	10.43	ug/l	96
26) 1,2-Dichloropropane	12.36	63	125938	10.00	ug/l	54
27) Dibromomethane	12.97	174	91722	10.00	ug/l	88
28) Bromodichloromethane	12.87	83	234461	10.13	ug/l	99
29) Methyl Isobutyl Ketone	13.62	43	101651	40.05	ug/l	91
30) cis-1,3-Dichloropropene	14.06	75	165759	10.04	ug/l	97
31) trans-1,3-Dichloropropene	15.33	75	115242	9.85	ug/l	97
32) 1,3-Dichloropropane	16.38	76	115109	9.97	ug/l	98
33) Dibromochloromethane	17.03	129	164537	9.96	ug/l	99
34) Bromoform	20.73	173	82700	10.03	ug/l	# 100
35) Toluene	14.87	92	281901	10.28	ug/l	99
36) 1,1,2-Trichloroethane	15.73	97	82865	9.94	ug/l	99
37) Tetrachloroethene	16.55	164	213421	10.58	ug/l	95
38) 1,2-Dibromoethane	17.53	107	116681	10.01	ug/l	99
39) Chlorobenzene	18.55	112	370373	10.18	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.66	131	170593	10.05	ug/l	95
41) Ethylbenzene	18.69	106	190214	10.48	ug/l	m 36
42) m,p-Xylenes	18.87	106	448797	20.42	ug/l	93

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43)	o-Xylene	19.89	106	208496	10.15 ug/l	92
44)	Styrene	19.97	104	315219	10.08 ug/l	96
46)	Isopropylbenzene	20.74	105	658045	10.56 ug/l	97
48)	Bromobenzene	21.82	77	315482	10.08 ug/l	97
49)	1,1,2,2-Tetrachloroethane	21.15	83	93204	9.74 ug/l m	55
50)	1,2,3-Trichloropropane	21.53	75	57065	10.88 ug/l m	89
51)	n-Propylbenzene	21.75	91	785783	10.51 ug/l	94
52)	2-Chlorotoluene	22.16	91	504717	10.01 ug/l m	84
53)	4-Chlorotoluene	22.26	91	457631	10.20 ug/l	85
54)	1,3,5-Trimethylbenzene	22.13	105	477414	10.47 ug/l	97
55)	Tert-Butylbenzene	22.94	119	535244	10.54 ug/l	98
56)	1,2,4-Trimethylbenzene	23.02	105	473749	10.30 ug/l	97
57)	Sec-Butylbenzene	23.41	105	800487	10.70 ug/l	98
58)	1,3-Dichlorobenzene	23.89	146	317230	10.13 ug/l	99
59)	1,4-Dichlorobenzene	24.11	146	320217	10.17 ug/l	99
60)	p-Isopropyltoluene	23.71	119	611209	10.69 ug/l	99
61)	1,2-Dichlorobenzene	24.86	146	248881	10.03 ug/l	96
62)	n-Butylbenzene	24.56	91	625208	10.78 ug/l	98
63)	1,2-Dibromo-3-Chloropropan	26.36	75	15993	9.96 ug/l	73
64)	1,2,4-Trichlorobenzene	28.06	180	227354	10.01 ug/l	97
65)	Naphthalene	28.61	128	181074	9.58 ug/l	97
66)	Hexachlorobutadiene	28.37	225	223314	10.79 ug/l	96
67)	1,2,3-Trichlorobenzene	29.17	180	171992	9.87 ug/l	99

(#) = qualifier out of range (m) = manual integration

W6399.D 524JL.M

Tue Jul 16 09:48:12 1996

VOA3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL14\W6400.D
 Acq Time : 14 Jul 96 10:42 am
 Sample : 20PPB 524.2 STD/5PTS
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 9:44 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 09:08:46 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.12	96	509789	10.00	ug/l	0.00
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.81	150	301999	10.29	ug/l	102.94%
47) Bromofluorobenzene	21.36	95	272237	9.84	ug/l	98.43%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.20	85	421352	22.96	ug/l	98
3) Chloromethane	3.55	50	123340	21.59	ug/l	92
4) Vinyl Chloride	3.72	62	147730	21.94	ug/l	97
5) Bromomethane	4.38	94	220514	21.33	ug/l	91
6) Chloroethane	4.49	64	102005	21.65	ug/l	94
7) Freon 123	4.84	83	535011	22.06	ug/l	98
8) Trichlorofluoromethane	4.87	101	556269	22.51	ug/l	100
9) Acetone	5.58	43	34477	79.40	ug/l	100
10) 1,1-Dichloroethene	5.78	96	217444	21.85	ug/l	97
11) Freon 113	5.50	101	485619	22.21	ug/l	96
12) Methylene Chloride	6.53	84	149056	20.63	ug/l	92
13) 1,2-Dichloroethene (trans-	7.01	96	209019	21.19	ug/l	98
14) 1,1-Dichloroethane	7.72	63	291240	20.06	ug/l	98
15) Methyl Ethyl Ketone	8.48	43	60493	92.12	ug/l	100
16) 2,2-Dichloropropane	8.72	77	489055	22.48	ug/l	97
17) 1,2-Dichloroethene (cis-)	8.79	96	317265	27.04	ug/l	96
18) Bromochloromethane	9.41	130	193292	20.42	ug/l	87
19) Chloroform	9.09	83	568544	23.43	ug/l	m 69
20) 1,1-Dichloropropene	10.18	75	469935	21.65	ug/l	98
21) 1,2-Dichloroethane	10.66	62	222301	20.12	ug/l	96
22) 1,1,1-Trichloroethane	9.87	97	625712	21.47	ug/l	96
23) Carbon Tetrachloride	10.38	117	600852	22.05	ug/l	99
24) Benzene	10.72	78	807415	20.64	ug/l	100
25) Trichloroethene	11.97	130	439072	21.02	ug/l	96
26) 1,2-Dichloropropane	12.35	63	273170	20.31	ug/l	52
27) Dibromomethane	12.98	174	195175	19.93	ug/l	83
28) Bromodichloromethane	12.86	83	505568	20.46	ug/l	m 47
29) Methyl Isobutyl Ketone	13.61	43	214974	79.33	ug/l	91
30) cis-1,3-Dichloropropene	14.08	75	358243	20.32	ug/l	97
31) trans-1,3-Dichloropropene	15.32	75	251597	20.14	ug/l	97
32) 1,3-Dichloropropane	16.37	76	243587	19.76	ug/l	97
33) Dibromochloromethane	17.03	129	356036	20.19	ug/l	100
34) Bromoform	20.75	173	179284	20.37	ug/l	# 100
35) Toluene	14.88	92	605070	20.67	ug/l	98
36) 1,1,2-Trichloroethane	15.72	97	173392	19.48	ug/l	98
37) Tetrachloroethene	16.56	164	452575	21.01	ug/l	95
38) 1,2-Dibromoethane	17.53	107	245481	19.72	ug/l	99
39) Chlorobenzene	18.55	112	782188	20.15	ug/l	99
40) 1,1,1,2-Tetrachloroethane	18.65	131	361813	19.95	ug/l	95
41) Ethylbenzene	18.69	106	389072	20.08	ug/l	m 37
42) m,p-Xylenes	18.88	106	932832	39.76	ug/l	92

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43)	o-Xylene	19.90	106	439769	20.05 ug/l	90
44)	Styrene	19.98	104	671236	20.10 ug/l	97
46)	Isopropylbenzene	20.75	105	1353548	20.34 ug/l	97
48)	Bromobenzene	21.82	77	640539	19.17 ug/l	96
49)	1,1,2,2-Tetrachloroethane	21.16	83	196597	19.25 ug/l m	89
50)	1,2,3-Trichloropropane	21.52	75	120939	21.61 ug/l m	86
51)	n-Propylbenzene	21.75	91	1606556	20.12 ug/l	94
52)	2-Chlorotoluene	22.15	91	1018655	18.92 ug/l m	85
53)	4-Chlorotoluene	22.27	91	944890	19.73 ug/l	86
54)	1,3,5-Trimethylbenzene	22.13	105	959479	19.71 ug/l	97
55)	Tert-Butylbenzene	22.94	119	1088349	20.08 ug/l	98
56)	1,2,4-Trimethylbenzene	23.03	105	965306	19.65 ug/l	97
57)	Sec-Butylbenzene	23.42	105	1598429	20.02 ug/l	98
58)	1,3-Dichlorobenzene	23.89	146	643892	19.26 ug/l	99
59)	1,4-Dichlorobenzene	24.11	146	645844	19.21 ug/l	99
60)	p-Isopropyltoluene	23.72	119	1225573	20.08 ug/l	98
61)	1,2-Dichlorobenzene	24.87	146	512010	19.32 ug/l	96
62)	n-Butylbenzene	24.57	91	1234289	19.92 ug/l	99
63)	1,2-Dibromo-3-Chloropropan	26.36	75	34897	20.35 ug/l	74
64)	1,2,4-Trichlorobenzene	28.07	180	480488	19.82 ug/l	96
65)	Naphthalene	28.61	128	387701	19.21 ug/l	95
66)	Hexachlorobutadiene	28.37	225	449747	20.35 ug/l	96
67)	1,2,3-Trichlorobenzene	29.18	180	365802	19.65 ug/l	98

(#) = qualifier out of range (m) = manual integration

W6400.D 524JL.M

Tue Jul 16 09:44:59 1996

VOA3

001947

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL14\W6401.D
 Acq Time : 14 Jul 96 11:20 am
 Sample : 30PPB 524.2 STD/5PTS
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 9:45 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 09:08:46 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.13	96	486677	10.00	ug/l	0.01
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.81	150	301866	10.78	ug/l	%Recovery 107.78%
47) Bromofluorobenzene	21.36	95	256887	9.73	ug/l	97.29%
Target Compounds						
2) Dichlorodifluoromethane	3.21	85	609951	34.82	ug/l	Qvalue 98
3) Chloromethane	3.57	50	171693	31.48	ug/l	93
4) Vinyl Chloride	3.74	62	206936	32.19	ug/l	96
5) Bromomethane	4.40	94	311423	31.55	ug/l	91
6) Chloroethane	4.51	64	144793	32.19	ug/l	93
7) Freon 123	4.86	83	759671	32.81	ug/l	98
8) Trichlorofluoromethane	4.89	101	802466	34.01	ug/l	100
9) Acetone	5.60	43	41739	100.68	ug/l	100
10) 1,1-Dichloroethene	5.80	96	315750	33.24	ug/l	97
11) Freon 113	5.52	101	718174	34.41	ug/l	96
12) Methylene Chloride	6.54	84	207051	30.02	ug/l	92
13) 1,2-Dichloroethene (trans-	7.03	96	300364	31.90	ug/l	97
14) 1,1-Dichloroethane	7.73	63	428687	30.93	ug/l	98
15) Methyl Ethyl Ketone	8.49	43	73929	117.93	ug/l	100
16) 2,2-Dichloropropane	8.74	77	702682	33.84	ug/l	97
17) 1,2-Dichloroethene (cis-)	8.81	96	440824	39.35	ug/l	94
18) Bromochloromethane	9.42	130	263716	29.19	ug/l	88
19) Chloroform	9.10	83	801516	34.60	ug/l	99
20) 1,1-Dichloropropene	10.18	75	678002	32.73	ug/l	98
21) 1,2-Dichloroethane	10.67	62	300881	28.52	ug/l	96
22) 1,1,1-Trichloroethane	9.88	97	912080	32.78	ug/l	96
23) Carbon Tetrachloride	10.39	117	879333	33.80	ug/l	99
24) Benzene	10.72	78	1130544	30.27	ug/l m	100
25) Trichloroethene	11.98	130	621344	31.16	ug/l	96
26) 1,2-Dichloropropane	12.35	63	373449	29.09	ug/l	52
27) Dibromomethane	12.98	174	264526	28.30	ug/l	83
28) Bromodichloromethane	12.85	83	699409	29.65	ug/l	98
29) Methyl Isobutyl Ketone	13.60	43	294909	114.00	ug/l	91
30) cis-1,3-Dichloropropene	14.08	75	491571	29.20	ug/l	97
31) trans-1,3-Dichloropropene	15.32	75	348482	29.21	ug/l	97
32) 1,3-Dichloropropane	16.37	76	337921	28.72	ug/l	98
33) Dibromochloromethane	17.02	129	491558	29.20	ug/l	99
34) Bromoform	20.74	173	246889	29.39	ug/l #	100
35) Toluene	14.88	92	861317	30.82	ug/l	97
36) 1,1,2-Trichloroethane	15.72	97	239158	28.15	ug/l m	78
37) Tetrachloroethene	16.55	164	647174	31.47	ug/l	95
38) 1,2-Dibromoethane	17.52	107	339620	28.58	ug/l	99
39) Chlorobenzene	18.55	112	1102460	29.74	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.65	131	499840	28.88	ug/l	96
41) Ethylbenzene	18.68	106	556407	30.08	ug/l m	35
42) m,p-Xylenes	18.88	106	1328067	50.74	ug/l	95

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43)	o-Xylene	19.89	106	629014	30.04	ug/l	89
44)	Styrene	19.97	104	947658	29.72	ug/l	97
46)	Isopropylbenzene	20.75	105	1947217	30.65	ug/l	97
48)	Bromobenzene	21.81	77	891866	27.96	ug/l	95
49)	1,1,2,2-Tetrachloroethane	21.17	83	274179	28.12	ug/l m	92
50)	1,2,3-Trichloropropane	21.52	75	124049	23.21	ug/l	86
51)	n-Propylbenzene	21.75	91	2319621	30.43	ug/l	94
52)	2-Chlorotoluene	22.15	91	1547462	30.11	ug/l m	81
53)	4-Chlorotoluene	22.27	91	1291083	28.25	ug/l	81
54)	1,3,5-Trimethylbenzene	22.13	105	1345283	28.95	ug/l	97
55)	Tert-Butylbenzene	22.95	119	1554547	30.05	ug/l	98
56)	1,2,4-Trimethylbenzene	23.03	105	1352195	28.83	ug/l	97
57)	Sec-Butylbenzene	23.42	105	2287324	30.01	ug/l	98
58)	1,3-Dichlorobenzene	23.90	146	893713	28.01	ug/l	99
59)	1,4-Dichlorobenzene	24.12	146	888640	27.68	ug/l	99
60)	p-Isopropyltoluene	23.72	119	1725308	29.61	ug/l	99
61)	1,2-Dichlorobenzene	24.86	146	695901	27.51	ug/l	96
62)	n-Butylbenzene	24.56	91	1751589	29.62	ug/l	98
63)	1,2-Dibromo-3-Chloropropan	26.36	75	48267	29.48	ug/l	68
64)	1,2,4-Trichlorobenzene	28.07	180	668039	28.86	ug/l	96
65)	Naphthalene	28.61	128	541914	28.13	ug/l	95
66)	Hexachlorobutadiene	28.37	225	647921	30.71	ug/l	97
67)	1,2,3-Trichlorobenzene	29.17	180	512822	28.86	ug/l	98

(#) = qualifier out of range (m) = manual integration

W6401.D

524JL.M

Tue Jul 16 09:46:18 1996

VOA3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL14\W6402.D
 Acq Time : 14 Jul 96 11:59 am
 Sample : 50PPB 524.2 SSC STD/5PTS
 Misc : 25ML/VO9607021,VO9607022
 Quant Time: Jul 16 12:11 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Double gas spiked

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.12	96	532147	10.00	ug/l	0.00
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.80	150	292726	9.56	ug/l	95.59%
47) Bromofluorobenzene	21.35	95	287318	9.95	ug/l	99.51%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.21	85	439883	22.97	ug/l	98
3) Chloromethane	3.57	50	120479	20.21	ug/l	93
4) Vinyl Chloride	3.73	62	142556	20.28	ug/l	96
5) Bromomethane	4.39	94	229914	21.30	ug/l	92
6) Chloroethane	4.50	64	94774	19.27	ug/l	94
7) Freon 123	4.85	83	269199	10.63	ug/l	98
8) Trichlorofluoromethane	4.88	101	525525	20.37	ug/l	100
9) Acetone	5.59	43	10279	22.68	ug/l	100
10) 1,1-Dichloroethene	5.79	96	98921	9.52	ug/l	97
11) Freon 113	5.51	101	232262	10.18	ug/l	97
12) Methylene Chloride	6.54	84	68725	9.11	ug/l	93
13) 1,2-Dichloroethene (trans-)	7.01	96	100233	9.74	ug/l	98
14) 1,1-Dichloroethane	7.73	63	146468	9.67	ug/l	99
15) Methyl Ethyl Ketone	8.47	43	19128	27.91	ug/l	100
16) 2,2-Dichloropropane	8.74	77	226613	9.98	ug/l	97
17) 1,2-Dichloroethene (cis-)	8.79	96	142367	11.60	ug/l	96
18) Bromochloromethane	9.40	130	87765	8.88	ug/l	87
19) Chloroform	9.09	83	276715	10.90	ug/l	98
20) 1,1-Dichloropropene	10.17	75	212315	9.37	ug/l	98
21) 1,2-Dichloroethane	10.65	62	102150	8.86	ug/l	97
22) 1,1,1-Trichloroethane	9.87	97	302589	9.95	ug/l	95
23) Carbon Tetrachloride	10.37	117	287140	10.10	ug/l	99
24) Benzene	10.71	78	370537	9.07	ug/l	100
25) Trichloroethene	11.96	130	211454	9.70	ug/l	96
26) 1,2-Dichloropropane	12.34	63	126274	8.99	ug/l	53
27) Dibromomethane	12.97	174	89783	8.78	ug/l	83
28) Bromodichloromethane	12.85	83	241940	9.38	ug/l	98
29) Methyl Isobutyl Ketone	13.61	43	105439	37.27	ug/l	91
30) cis-1,3-Dichloropropene	14.06	75	167845	9.12	ug/l	98
31) trans-1,3-Dichloropropene	15.30	75	117439	9.00	ug/l	98
32) 1,3-Dichloropropane	16.36	76	116921	9.09	ug/l	96
33) Dibromochloromethane	17.02	129	160048	8.70	ug/l	98
34) Bromoform	20.72	173	85303	9.29	ug/l	100
35) Toluene	14.87	92	280280	9.17	ug/l	98
36) 1,1,2-Trichloroethane	15.71	97	83245	8.96	ug/l	70
37) Tetrachloroethene	16.55	164	214951	9.56	ug/l	95
38) 1,2-Dibromoethane	17.52	107	116610	8.97	ug/l	100
39) Chlorobenzene	18.54	112	375608	9.27	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.64	131	173899	9.19	ug/l	95
41) Ethylbenzene	18.68	106	191381	9.46	ug/l	94
42) m,p-Xylenes	18.86	106	454200	10.55	ug/l	94

001950

43)	o-Xylene	19.88	106	212257	9.27 ug/l	91
44)	Styrene	19.96	104	326736	9.37 ug/l	97
46)	Isopropylbenzene	20.74	105	658693	9.48 ug/l	97
48)	Bromobenzene	21.82	77	313835	9.00 ug/l	95
49)	1,1,2,2-Tetrachloroethane	21.15	83	96712	9.07 ug/l	98
50)	1,2,3-Trichloropropane	21.52	75	57945	9.92 ug/l	89
51)	n-Propylbenzene	21.74	91	788776	9.46 ug/l	94
52)	2-Chlorotoluene	22.15	91	528681	9.41 ug/l	92
53)	4-Chlorotoluene	22.25	91	468515	9.37 ug/l	83
54)	1,3,5-Trimethylbenzene	22.12	105	482300	9.49 ug/l	96
55)	Tert-Butylbenzene	22.94	119	552548	9.77 ug/l	96
56)	1,2,4-Trimethylbenzene	23.02	105	482381	9.41 ug/l	97
57)	Sec-Butylbenzene	23.40	105	800418	9.60 ug/l	98
58)	1,3-Dichlorobenzene	23.89	146	320156	9.18 ug/l	99
59)	1,4-Dichlorobenzene	24.11	146	324309	9.24 ug/l	98
60)	p-Isopropyltoluene	23.70	119	613528	9.63 ug/l	98
61)	1,2-Dichlorobenzene	24.86	146	255722	9.24 ug/l	97
62)	n-Butylbenzene	24.56	91	622490	9.63 ug/l	98
63)	1,2-Dibromo-3-Chloropropan	26.36	75	17061	9.53 ug/l	66
64)	1,2,4-Trichlorobenzene	28.06	180	246921	9.76 ug/l	96
65)	Naphthalene	28.61	128	227796	10.81 ug/l	96
66)	Hexachlorobutadiene	28.36	225	223758	9.70 ug/l	97
67)	1,2,3-Trichlorobenzene	29.17	180	196953	10.14 ug/l	97

(#) = qualifier out of range (m) = manual integration

W6402.D 524JL.M

Tue Jul 16 12:12:29 1996

VOA3

Library Search Compound Report

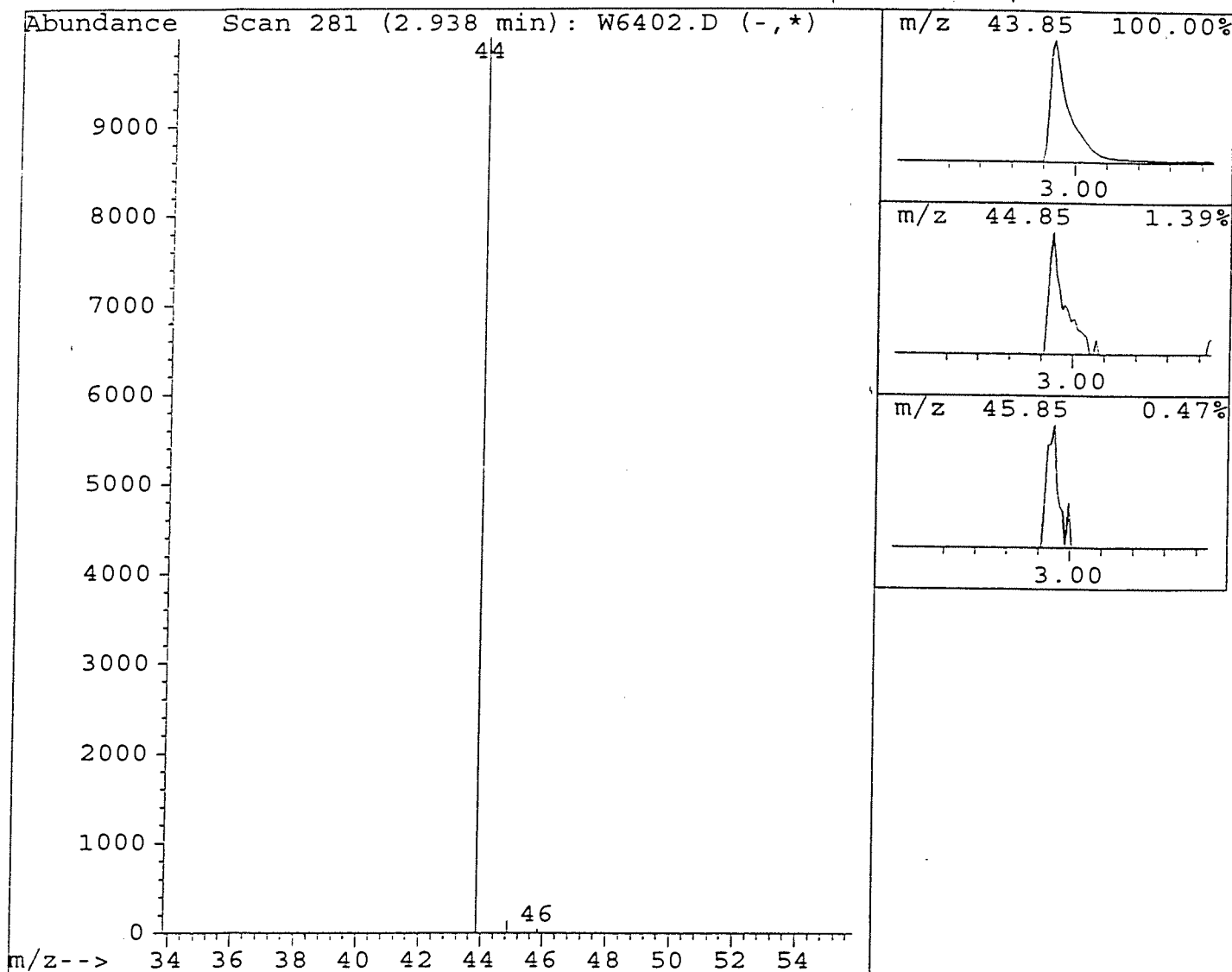
Data File : C:\HPCHEM\1\DATA\JUL14\W6402.D
Acq Time : 14 Jul 96 11:59 am
Sample : 50PPB 524.2 SSC STD/5PTS
Misc : 25ML/VO9607021,VO9607022

Operator: DWK
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96,ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.94	5.09 ug/l	548001	Fluorobenzene	11.12

Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L		0	000000-00-0	0



001952

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\JUL14\W6402.D
 Acq Time : 14 Jul 96 11:59 am
 Sample : 50PPB 524.2 SSC STD/5PTS
 Misc : 25ML/VO9607021,VO9607022

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96,ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Min. RRF : 0.100 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
1	Fluorobenzene	1.000	1.000	0.0	111	0.00
2	Dichlorodifluoromethane	0.360	0.827	-129.7#	253#	0.10
3	Chloromethane	0.112	0.226	-102.1#	220#	0.08
4	Vinyl Chloride	0.132	0.268	-102.8#	222#	0.06
5	Bromomethane	0.203	0.432	-113.0#	240#	0.03
6	Chloroethane	0.092	0.178	-92.7#	212#	0.03
7	Freon 123	0.476	0.506	-6.3	112	0.00
8	Trichlorofluoromethane	0.485	0.988	-103.7#	216#	0.00
9	Acetone	0.009	0.005#	43.3#	74	-0.04
10	1,1-Dichloroethene	0.195	0.186	4.8	103	-0.04
11	Freon 113	0.429	0.436	-1.8	108	-0.03
12	Methylene Chloride	0.142	0.129	8.9	103	-0.06
13	1,2-Dichloroethene (trans-)	0.193	0.188	2.6	106	-0.10
14	1,1-Dichloroethane	0.285	0.275	3.3	107	-0.12
15	Methyl Ethyl Ketone	0.013	0.009#	30.2#	66	-0.39
16	2,2-Dichloropropane	0.427	0.426	0.2	101	-0.13
17	1,2-Dichloroethene (cis-)	0.231	0.268	-16.0	100	-0.16
18	Bromochloromethane	0.186	0.165	11.2	99	-0.16
19	Chloroform	0.477	0.520	-9.0	105	-0.15
20	1,1-Dichloropropene	0.426	0.399	6.3	99	-0.17
21	1,2-Dichloroethane	0.217	0.192	11.4	100	-0.19
22	1,1,1-Trichloroethane	0.572	0.569	0.5	105	-0.16
23	Carbon Tetrachloride	0.534	0.540	-1.0	105	-0.18
24	Benzene	0.767	0.696	9.3	100	-0.02
25	Trichloroethene	0.410	0.397	3.0	104	-0.19
26	1,2-Dichloropropane	0.264	0.237	10.1	100	-0.21
27	Dibromomethane	0.192	0.169	12.2	98	-0.21
28	Bromodichloromethane	0.485	0.455	6.2	103	-0.02
29	Methyl Isobutyl Ketone	0.053	0.050#	6.8	104	-0.19
30	cis-1,3-Dichloropropene	0.346	0.315	8.8	101	-0.23
31	trans-1,3-Dichloropropene	0.245	0.221	10.0	102	-0.26
32	1,3-Dichloropropane	0.242	0.220	9.1	102	-0.23
33	Dibromochloromethane	0.346	0.301	13.0	97	-0.23
34	Bromoform	0.173	0.160	7.1	103	-0.24
35	Toluene	0.574	0.527	8.3	99	-0.26
36	1,1,2-Trichloroethane	0.175	0.156	10.4	100	-0.24
37	Tetrachloroethene	0.423	0.404	4.4	101	-0.23
38	1,2-Dibromoethane	0.244	0.219	10.3	100	-0.22
39	Chlorobenzene	0.762	0.706	7.3	101	-0.20
0	1,1,1,2-Tetrachloroethane	0.356	0.327	8.1	102	-0.21
41	Ethylbenzene	0.380	0.360	5.4	101	-0.01
42	m,p-Xylenes	0.460	0.427	7.2	101	0.00
43	o-Xylene	0.430	0.399	7.3	102	-0.19
44	Styrene	0.655	0.614	6.3	104	-0.18
45 S	1,2-Dichlorobenzene-d4	0.575	0.550	4.4	111	-0.13
46	Isopropylbenzene	1.306	1.238	5.2	100	-0.21

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47	S	Bromofluorobenzene	0.543	0.540	0.5	114	-0.20
48		Bromobenzene	0.655	0.590	10.0	99	-0.18
49		1,1,2,2-Tetrachloroethane	0.200	0.182	9.3	104	0.00
50		1,2,3-Trichloropropane	0.110	0.109	0.8	102	-0.01
51		n-Propylbenzene	1.566	1.482	5.4	100	-0.18
52		2-Chlorotoluene	1.056	0.993	5.9	106	-0.01
53		4-Chlorotoluene	0.939	0.880	6.3	102	0.01
54		1,3,5-Trimethylbenzene	0.955	0.906	5.1	101	-0.16
55		Tert-Butylbenzene	1.063	1.038	2.3	103	-0.13
56		1,2,4-Trimethylbenzene	0.964	0.906	5.9	102	0.00
57		Sec-Butylbenzene	1.566	1.504	4.0	100	-0.14
58		1,3-Dichlorobenzene	0.656	0.602	8.2	101	0.00
59		1,4-Dichlorobenzene	0.660	0.609	7.6	101	0.00
60		p-Isopropyltoluene	1.197	1.153	3.7	100	-0.13
61		1,2-Dichlorobenzene	0.520	0.481	7.6	103	-0.12
62		n-Butylbenzene	1.215	1.170	3.7	100	-0.10
63		1,2-Dibromo-3-Chloropropane	0.034	0.032#	4.7	107	-0.10
64		1,2,4-Trichlorobenzene	0.476	0.464	2.4	109	-0.18
65		Naphthalene	0.396	0.428	-8.1	126	-0.21
66		Hexachlorobutadiene	0.434	0.420	3.0	100	0.00
67		1,2,3-Trichlorobenzene	0.365	0.370	-1.4	115	-0.25

(#) = Out of Range
W6399.D 524JL.M

SPCC's out = 0 CCC's out = 0
Tue Jul 16 12:13:29 1996 VOA3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL14\W6407.D
 Acq Time : 14 Jul 96 2:36 pm
 Sample : 5PPB 524.2 STD/5PTS
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 9:50 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 09:08:46 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.13	96	461234	10.00	ug/l	0.00
System Monitoring Compounds						% Recovery
45) 1,2-Dichlorobenzene-d4	24.79	150	253043	9.53	ug/l	95.33%
47) Bromofluorobenzene	21.34	95	248199	9.92	ug/l	99.18%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.21	85	53991	3.25	ug/l	99
3) Chloromethane	3.56	50	19818	3.83	ug/l	92
4) Vinyl Chloride	3.74	62	23269	3.82	ug/l	99
5) Bromomethane	4.38	94	41138	4.40	ug/l	96
6) Chloroethane	4.50	64	17312	4.06	ug/l	97
7) Freon 123	4.84	83	84043	3.83	ug/l	98
8) Trichlorofluoromethane	4.88	101	78992	3.53	ug/l	97
9) Acetone	5.59	43	5074	12.91	ug/l	100
10) 1,1-Dichloroethene	5.79	96	33485	3.72	ug/l	93
11) Freon 113	5.49	101	66099	3.34	ug/l	96
12) Methylene Chloride	6.53	84	30173	4.62	ug/l	88
13) 1,2-Dichloroethene (trans-	7.01	96	36675	4.11	ug/l	98
14) 1,1-Dichloroethane	7.72	63	56946	4.34	ug/l	98
15) Methyl Ethyl Ketone	8.47	43	13357	22.48	ug/l	100
16) 2,2-Dichloropropane	8.72	77	85032	4.32	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.80	96	62983	5.93	ug/l	99
18) Bromochloromethane	9.40	130	39159	4.57	ug/l	87
19) Chloroform	9.09	83	113579	5.17	ug/l	99
20) 1,1-Dichloropropene	10.16	75	78568	4.00	ug/l	98
21) 1,2-Dichloroethane	10.65	62	46249	4.63	ug/l	96
22) 1,1,1-Trichloroethane	9.86	97	108225	4.10	ug/l	96
23) Carbon Tetrachloride	10.38	117	97533	3.96	ug/l	100
24) Benzene	10.70	78	152911	4.32	ug/l m	100
25) Trichloroethene	11.96	130	81332	4.30	ug/l	96
26) 1,2-Dichloropropane	12.33	63	53273	4.38	ug/l	52
27) Dibromomethane	12.95	174	38826	4.38	ug/l	81
28) Bromodichloromethane	12.85	83	99080	4.43	ug/l	98
29) Methyl Isobutyl Ketone	13.60	43	43103	17.58	ug/l	93
30) cis-1,3-Dichloropropene	14.05	75	68533	4.30	ug/l	96
31) trans-1,3-Dichloropropene	15.29	75	48266	4.27	ug/l	98
32) 1,3-Dichloropropane	16.36	76	49942	4.48	ug/l	99
33) Dibromochloromethane	17.01	129	69303	4.34	ug/l	99
34) Bromoform	20.72	173	33979	4.27	ug/l	100
35) Toluene	14.85	92	114252	4.31	ug/l	99
36) 1,1,2-Trichloroethane	15.71	97	35041	4.35	ug/l	97
37) Tetrachloroethene	16.53	164	81576	4.19	ug/l	96
38) 1,2-Dibromoethane	17.51	107	50624	4.49	ug/l	99
39) Chlorobenzene	18.53	112	159287	4.53	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.63	131	75672	4.61	ug/l	98
41) Ethylbenzene	18.66	106	77245	4.41	ug/l m	36

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43)	o-Xylene	19.87	106	88522	4.46 ug/l	91
44)	Styrene	19.95	104	139154	4.60 ug/l	98
46)	Isopropylbenzene	20.73	105	262882	4.37 ug/l	97
48)	Bromobenzene	21.79	77	135750	4.49 ug/l	95
49)	1,1,2,2-Tetrachloroethane	21.14	83	40564	4.39 ug/l	98
50)	1,2,3-Trichloropropane	21.49	75	27368	5.40 ug/l m	39
51)	n-Propylbenzene	22.13	91	226267	3.13 ug/l	47
52)	2-Chlorotoluene	22.13	91	238926	4.90 ug/l m	86
53)	4-Chlorotoluene	22.24	91	196681	4.54 ug/l	86
54)	1,3,5-Trimethylbenzene	22.11	105	199646	4.53 ug/l	97
55)	Tert-Butylbenzene	22.93	119	222811	4.54 ug/l	98
56)	1,2,4-Trimethylbenzene	23.01	105	203830	4.59 ug/l	97
57)	Sec-Butylbenzene	23.39	105	319866	4.43 ug/l	98
58)	1,3-Dichlorobenzene	23.88	146	142579	4.71 ug/l	98
59)	1,4-Dichlorobenzene	24.09	146	142658	4.69 ug/l	99
60)	p-Isopropyltoluene	23.69	119	252197	4.57 ug/l	99
61)	1,2-Dichlorobenzene	24.84	146	112411	4.69 ug/l	97
62)	n-Butylbenzene	24.54	91	250618	4.47 ug/l	98
63)	1,2-Dibromo-3-Chloropropan	26.35	75	6286	4.05 ug/l	64
64)	1,2,4-Trichlorobenzene	28.05	180	101679	4.64 ug/l	97
65)	Naphthalene	28.59	128	78102	4.28 ug/l	96
66)	Hexachlorobutadiene	28.35	225	89421	4.47 ug/l	100
67)	1,2,3-Trichlorobenzene	29.15	180	77398	4.60 ug/l	97

(#) = qualifier out of range (m) = manual integration

W6407.D

524JL.M

Tue Jul 16 09:51:16 1996

VOA3

001956

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL15\W6427.D
 Acq Time : 15 Jul 96 7:11 pm
 Sample : 10PPB-QCCS-2/B#96419
 Misc : 25ML/VO9607026->524.2 SSC STD
 Quant Time: Jul 16 9:10 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

SSC met 1.5%
 except
 MEK
 2.2 DCP

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 09:08:46 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.09	96	400776	10.00	ug/l	-0.03
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.78	150	231047	10.02	ug/l	100.18%
47) Bromofluorobenzene	21.33	95	214886	9.88	ug/l	98.82%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.20	85	111568	7.73	ug/l	98
3) Chloromethane	3.56	50	36696	8.17	ug/l	94
4) Vinyl Chloride	3.72	62	44879	8.48	ug/l	94
5) Bromomethane	4.37	94	78666	9.68	ug/l	95
6) Chloroethane	4.49	64	32863	8.87	ug/l	96
7) Freon 123	4.83	83	192054	10.07	ug/l	98
8) Trichlorofluoromethane	4.87	101	187087	9.63	ug/l	99
9) Acetone	5.59	43	13152	38.53	ug/l	100
10) 1,1-Dichloroethene	5.78	96	76451	9.77	ug/l	96
11) Freon 113	5.49	101	168289	9.79	ug/l	97
12) Methylene Chloride	6.51	84	67635	11.91	ug/l	92
13) 1,2-Dichloroethene (trans-)	7.00	96	74612	9.62	ug/l	98
14) 1,1-Dichloroethane	7.69	63	113393	9.94	ug/l	98
15) Methyl Ethyl Ketone	8.45	43	15453	29.93	ug/l	100
16) 2,2-Dichloropropane	8.71	77	120499	7.05	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.78	96	91217	9.89	ug/l	98
18) Bromochloromethane	9.39	130	71161	9.56	ug/l	86
19) Chloroform	9.07	83	215877	11.32	ug/l	100
20) 1,1-Dichloropropene	10.13	75	162765	9.54	ug/l	98
21) 1,2-Dichloroethane	10.64	62	83578	9.62	ug/l	96
22) 1,1,1-Trichloroethane	9.84	97	236309	10.31	ug/l	95
23) Carbon Tetrachloride	10.37	117	213145	9.95	ug/l	99
24) Benzene	10.69	78	292257	9.50	ug/l	100
25) Trichloroethene	11.95	130	165983	10.11	ug/l	95
26) 1,2-Dichloropropane	12.33	63	97233	9.20	ug/l	53
27) Dibromomethane	12.94	174	73542	9.55	ug/l	80
28) Bromodichloromethane	12.82	83	197645	10.17	ug/l	99
29) Methyl Isobutyl Ketone	13.58	43	84525	39.68	ug/l	92
30) cis-1,3-Dichloropropene	14.04	75	135818	9.80	ug/l	96
31) trans-1,3-Dichloropropene	15.29	75	97819	9.96	ug/l	99
32) 1,3-Dichloropropane	16.34	76	100703	10.39	ug/l	99
33) Dibromochloromethane	16.99	129	131128	9.46	ug/l	99
34) Bromoform	20.71	173	72341	10.46	ug/l	100
35) Toluene	14.83	92	224445	9.75	ug/l	99
36) 1,1,2-Trichloroethane	15.68	97	68249	9.76	ug/l	99
37) Tetrachloroethene	16.51	164	161178	9.52	ug/l	95
38) 1,2-Dibromoethane	17.50	107	96567	9.87	ug/l	98
39) Chlorobenzene	18.51	112	303899	9.96	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.61	131	135278	9.49	ug/l	96
41) Ethylbenzene	18.66	106	152954	10.04	ug/l	37
42) n-Butylbenzene	18.84	106	361123	19.58	ug/l	92

001957

43)	o-Xylene	19.86	106	168006	9.74 ug/l	89
44)	Styrene	19.94	104	266500	10.15 ug/l	97
46)	Isopropylbenzene	20.71	105	526295	10.06 ug/l	97
48)	Bromobenzene	21.78	77	257988	9.82 ug/l	95
49)	1,1,2,2-Tetrachloroethane	21.13	83	78418	9.77 ug/l	98
50)	1,2,3-Trichloropropane	21.49	75	45509	10.34 ug/l	87
51)	n-Propylbenzene	21.72	91	629266	10.02 ug/l	94
52)	2-Chlorotoluene	22.11	91	425716	10.06 ug/l	m 83
53)	4-Chlorotoluene	22.23	91	365047	9.70 ug/l	84
54)	1,3,5-Trimethylbenzene	22.09	105	378906	9.90 ug/l	96
55)	Tert-Butylbenzene	22.92	119	433325	10.17 ug/l	98
56)	1,2,4-Trimethylbenzene	22.99	105	378133	9.79 ug/l	97
57)	Sec-Butylbenzene	23.39	105	619079	9.86 ug/l	98
58)	1,3-Dichlorobenzene	23.86	146	251905	9.59 ug/l	99
59)	1,4-Dichlorobenzene	24.09	146	255509	9.67 ug/l	97
60)	p-Isopropyltoluene	23.69	119	475121	9.90 ug/l	98
61)	1,2-Dichlorobenzene	24.84	146	209260	10.04 ug/l	97
62)	n-Butylbenzene	24.54	91	477158	9.80 ug/l	98
63)	1,2-Dibromo-3-Chloropropan	26.33	75	14190	10.52 ug/l	78
64)	1,2,4-Trichlorobenzene	28.04	180	188855	9.91 ug/l	96
65)	Naphthalene	28.58	128	169937	10.71 ug/l	96
66)	Hexachlorobutadiene	28.35	225	168061	9.67 ug/l	100
67)	1,2,3-Trichlorobenzene	29.14	180	149892	10.24 ug/l	98

(#) = qualifier out of range (m) = manual integration

W6427.D 524JL.M

Tue Jul 16 09:10:40 1996

VOA3

001958

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\JUL15\W6427.D
 Acq Time : 15 Jul 96 7:11 pm
 Sample : 10PPB-QCCS-2/B#96419
 Misc : 25ML/VO9607026->524.2 SSC STD

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Min. RRF : 0.100 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
1	Fluorobenzene	1.000	1.000	0.0	84	-0.03
2	Dichlorodifluoromethane	0.360	0.278	22.7	64	0.09
3	Chloromethane	0.112	0.092#	18.3	67	0.07
4	Vinyl Chloride	0.132	0.112	15.2	70	0.05
5	Bromomethane	0.203	0.196	3.2	82	0.01
6	Chloroethane	0.092	0.082#	11.3	73	0.02
7	Freon 123	0.476	0.479	-0.7	80	-0.02
8	Trichlorofluoromethane	0.485	0.467	3.7	77	0.00
9	Acetone	0.009	0.008#	3.7	95	-0.04
10	1,1-Dichloroethene	0.195	0.191	2.3	79	-0.05
11	Freon 113	0.429	0.420	2.1	78	-0.05
12	Methylene Chloride	0.142	0.169	-19.1	101	-0.09
13	1,2-Dichloroethene (trans-)	0.193	0.186	3.8	79	-0.11
14	1,1-Dichloroethane	0.285	0.283	0.6	83	-0.16
15	Methyl Ethyl Ketone	0.013	0.010#	25.2	53	-0.41
16	2,2-Dichloropropane	0.427	0.301	29.5	54	-0.16
17	1,2-Dichloroethene (cis-)	0.231	0.228	1.3	64	-0.17
18	Bromochloromethane	0.186	0.178	4.4	80	-0.17
19	Chloroform	0.477	0.539	-12.9	82	-0.17
20	1,1-Dichloropropene	0.426	0.406	4.6	76	-0.21
21	1,2-Dichloroethane	0.217	0.209	3.8	82	-0.20
22	1,1,1-Trichloroethane	0.572	0.590	-3.1	82	-0.19
23	Carbon Tetrachloride	0.534	0.532	0.5	78	-0.18
24	Benzene	0.767	0.729	5.0	79	-0.04
25	Trichloroethene	0.410	0.414	-1.1	81	-0.20
26	1,2-Dichloropropane	0.264	0.243	8.0	77	-0.22
27	Dibromomethane	0.192	0.183	4.5	80	-0.24
28	Bromodichloromethane	0.485	0.493	-1.7	84	-0.05
29	Methyl Isobutyl Ketone	0.053	0.053#	0.8	83	-0.22
30	cis-1,3-Dichloropropene	0.346	0.339	2.0	82	-0.25
31	trans-1,3-Dichloropropene	0.245	0.244	0.4	85	-0.27
32	1,3-Dichloropropane	0.242	0.251	-3.9	87	-0.25
33	Dibromochloromethane	0.346	0.327	5.4	80	-0.26
34	Bromoform	0.173	0.181	-4.6	87	-0.25
35	Toluene	0.574	0.560	2.5	80	-0.30
36	1,1,2-Trichloroethane	0.175	0.170	2.4	82	-0.27
37	Tetrachloroethene	0.423	0.402	4.8	76	-0.27
38	1,2-Dibromoethane	0.244	0.241	1.3	83	-0.24
39	Chlorobenzene	0.762	0.758	0.4	82	-0.23
40	1,1,1,2-Tetrachloroethane	0.356	0.338	5.1	79	-0.24
41	Ethylbenzene	0.380	0.382	-0.4	80	-0.03
42	m,p-Xylenes	0.460	0.451	2.1	80	-0.03
43	o-Xylene	0.430	0.419	2.6	81	-0.21
44	Styrene	0.655	0.665	-1.5	85	-0.20
45 S	1,2-Dichlorobenzene-d4	0.575	0.576	-0.2	88	-0.15
46	Isopropylbenzene	1.306	1.313	-0.5	80	-0.24

001959

47	S	Bromofluorobenzene	0.543	0.536	1.2	85	-0.22
48		Bromobenzene	0.655	0.644	1.8	82	-0.22
49		1,1,2,2-Tetrachloroethane	0.200	0.196	2.3	84	-0.02
50		1,2,3-Trichloropropane	0.110	0.114	-3.4	80	-0.04
51		n-Propylbenzene	1.566	1.570	-0.2	80	-0.20
52		2-Chlorotoluene	1.056	1.062	-0.6	85	-0.05
53		4-Chlorotoluene	0.939	0.911	3.0	80	-0.01
54		1,3,5-Trimethylbenzene	0.955	0.945	1.0	79	-0.19
55		Tert-Butylbenzene	1.063	1.081	-1.7	81	-0.15
56		1,2,4-Trimethylbenzene	0.964	0.944	2.1	80	-0.02
57		Sec-Butylbenzene	1.566	1.545	1.4	77	-0.15
58		1,3-Dichlorobenzene	0.656	0.629	4.1	79	-0.02
59		1,4-Dichlorobenzene	0.660	0.638	3.3	80	0.00
60		p-Isopropyltoluene	1.197	1.186	1.0	78	-0.14
61		1,2-Dichlorobenzene	0.520	0.522	-0.4	84	-0.14
62		n-Butylbenzene	1.215	1.191	2.0	76	-0.12
63		1,2-Dibromo-3-Chloropropane	0.034	0.035#	-5.2	89	-0.13
64		1,2,4-Trichlorobenzene	0.476	0.471	0.9	83	-0.20
65		Naphthalene	0.396	0.424	-7.1	94	-0.24
66		Hexachlorobutadiene	0.434	0.419	3.3	75	-0.01
67		1,2,3-Trichlorobenzene	0.365	0.374	-2.4	87	-0.28

(#) = Out of Range
W6399.D 524JL.M

SPCC's out = 0, CCC's out = 0
Tue Jul 16 10:40:33 1996 VOA3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL15\W6438.D
 Acq Time : 16 Jul 96 2:19 am
 Sample : 10PPB-QCCS-3/B#96419
 Misc : 25ML/VO9607026->524.2 SSC STD
 Quant Time: Jul 16 9:12 1996

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

SSC met $\pm 15\%$

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3 *except M*
 Last Update : Tue Jul 16 09:08:46 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.09	96	379630	10.00	ug/l	-0.03
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.78	150	232596	10.65	ug/l	%Recovery 106.47%
47) Bromofluorobenzene	21.32	95	211551	10.27	ug/l	102.71%
Target Compounds						
2) Dichlorodifluoromethane	3.19	85	122859	8.99	ug/l	Qvalue 99
3) Chloromethane	3.56	50	39892	9.38	ug/l	91
4) Vinyl Chloride	3.72	62	48368	9.65	ug/l	98
5) Bromomethane	4.38	94	79913	10.38	ug/l	90
6) Chloroethane	4.49	64	34494	9.83	ug/l	98
7) Freon 123	4.83	83	178307	9.87	ug/l	97
8) Trichlorofluoromethane	4.87	101	196569	10.68	ug/l	99
9) Acetone	5.58	43	13266	41.02	ug/l	100
10) 1,1-Dichloroethene	5.77	96	73715	9.95	ug/l	98
11) Freon 113	5.49	101	155839	9.57	ug/l	97
12) Methylene Chloride	6.51	84	63732	11.84	ug/l	91
13) 1,2-Dichloroethene (trans-)	7.00	96	74192	10.10	ug/l	95
14) 1,1-Dichloroethane	7.69	63	109761	10.15	ug/l	99
15) Methyl Ethyl Ketone	8.44	43	13412	27.43	ug/l	100
16) 2,2-Dichloropropane	8.71	77	119248	7.36	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.77	96	102072	11.68	ug/l	99
18) Bromochloromethane	9.38	130	65960	9.36	ug/l	85
19) Chloroform	9.06	83	210370	11.64	ug/l	99
20) 1,1-Dichloropropene	10.14	75	152889	9.46	ug/l	98
21) 1,2-Dichloroethane	10.62	62	79636	9.68	ug/l	96
22) 1,1,1-Trichloroethane	9.83	97	226160	10.42	ug/l	96
23) Carbon Tetrachloride	10.34	117	201289	9.92	ug/l	99
24) Benzene	10.68	78	283558	9.73	ug/l	m 100
25) Trichloroethene	11.94	130	160461	10.32	ug/l	96
26) 1,2-Dichloropropane	12.31	63	92953	9.28	ug/l	49
27) Dibromomethane	12.93	174	68156	9.35	ug/l	83
28) Bromodichloromethane	12.82	83	187315	10.18	ug/l	97
29) Methyl Isobutyl Ketone	13.57	43	77163	38.24	ug/l	92
30) cis-1,3-Dichloropropene	14.03	75	123011	9.37	ug/l	97
31) trans-1,3-Dichloropropene	15.28	75	87376	9.39	ug/l	99
32) 1,3-Dichloropropane	16.33	76	91970	10.02	ug/l	97
33) Dibromochloromethane	16.99	129	123498	9.41	ug/l	99
34) Bromoform	20.70	173	68837	10.50	ug/l	# 100
35) Toluene	14.83	92	219380	10.06	ug/l	97
36) 1,1,2-Trichloroethane	15.68	97	62521	9.43	ug/l	97
37) Tetrachloroethene	16.50	164	157464	9.82	ug/l	96
38) 1,2-Dibromoethane	17.49	107	89022	9.60	ug/l	99
39) Chlorobenzene	18.51	112	292403	10.11	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.62	131	131764	9.76	ug/l	96
41) Ethylbenzene	18.65	106	148475	10.29	ug/l	m 35
42) m,p-Xylenes	18.83	106	364237	20.85	ug/l	89

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43)	o-Xylene	19.85	106	166580	10.20 ug/l	90
44)	Styrene	19.93	104	262266	10.54 ug/l	99
46)	Isopropylbenzene	20.70	105	530273	10.70 ug/l	97
48)	Bromobenzene	21.78	77	250710	10.08 ug/l	95
49)	1,1,2,2-Tetrachloroethane	21.12	83	73855	9.71 ug/l	95
50)	1,2,3-Trichloropropane	21.49	75	43499	10.44 ug/l	90
51)	n-Propylbenzene	21.71	91	636932	10.71 ug/l	94
52)	2-Chlorotoluene	22.11	91	426439	10.64 ug/l	m 83
53)	4-Chlorotoluene	22.23	91	379833	10.65 ug/l	84
54)	1,3,5-Trimethylbenzene	22.08	105	388586	10.72 ug/l	96
55)	Tert-Butylbenzene	22.91	119	448133	11.10 ug/l	98
56)	1,2,4-Trimethylbenzene	22.99	105	393640	10.76 ug/l	97
57)	Sec-Butylbenzene	23.38	105	648512	10.91 ug/l	97
58)	1,3-Dichlorobenzene	23.85	146	261034	10.49 ug/l	99
59)	1,4-Dichlorobenzene	24.08	146	266453	10.64 ug/l	99
60)	p-Isopropyltoluene	23.68	119	496593	10.93 ug/l	98
61)	1,2-Dichlorobenzene	24.83	146	211471	10.72 ug/l	97
62)	n-Butylbenzene	24.54	91	511104	11.08 ug/l	98
63)	1,2-Dibromo-3-Chloropropan	26.34	75	13313	10.42 ug/l	75
64)	1,2,4-Trichlorobenzene	28.03	180	194074	10.75 ug/l	96
65)	Naphthalene	28.58	128	152498	10.15 ug/l	97
66)	Hexachlorobutadiene	28.33	225	184725	11.22 ug/l	99
67)	1,2,3-Trichlorobenzene	29.14	180	153540	11.08 ug/l	98

(#) = qualifier out of range (m) = manual integration

W6438.D 524JL.M Tue Jul 16 09:13:09 1996 VOA3

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\JUL15\W6438.D
 Acq Time : 16 Jul 96 2:19 am
 Sample : 10PPB-QCCS-3/B#96419
 Misc : 25ML/VO9607026->524.2 SSC STD

Operator: DWK
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Min. RRF : 0.100 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRRF CRRF		%Dev	Area%	Dev (Min)
1	Fluorobenzene	1.000	1.000	0.0	80	-0.03
2	Dichlorodifluoromethane	0.360	0.324	10.1	71	0.08
3	Chloromethane	0.112	0.105	6.2	73	0.07
4	Vinyl Chloride	0.132	0.127	3.5	75	0.05
5	Bromomethane	0.203	0.211	-3.8	83	0.02
6	Chloroethane	0.092	0.091#	1.7	77	0.02
7	Freon 123	0.476	0.470	1.3	74	-0.02
8	Trichlorofluoromethane	0.485	0.518	-6.8	81	0.00
9	Acetone	0.009	0.009#	-2.6	96	-0.05
10	1,1-Dichloroethene	0.195	0.194	0.5	77	-0.06
11	Freon 113	0.429	0.411	4.3	72	-0.05
12	Methylene Chloride	0.142	0.168	-18.4	95	-0.09
13	1,2-Dichloroethene (trans-)	0.193	0.195	-1.0	78	-0.11
14	1,1-Dichloroethane	0.285	0.289	-1.5	80	-0.16
15	Methyl Ethyl Ketone	0.013	0.009#	31.4#	46#	-0.42
16	2,2-Dichloropropane	0.427	0.314	26.4	53	-0.16
17	1,2-Dichloroethene (cis-)	0.231	0.269	-16.6	72	-0.18
18	Bromochloromethane	0.186	0.174	6.4	74	-0.18
19	Chloroform	0.477	0.554	-16.2	80	-0.18
20	1,1-Dichloropropene	0.426	0.403	5.4	71	-0.20
21	1,2-Dichloroethane	0.217	0.210	3.2	78	-0.22
22	1,1,1-Trichloroethane	0.572	0.596	-4.2	78	-0.20
23	Carbon Tetrachloride	0.534	0.530	0.8	73	-0.21
24	Benzene	0.767	0.747	2.7	77	-0.05
25	Trichloroethene	0.410	0.423	-3.2	79	-0.21
26	1,2-Dichloropropane	0.264	0.245	7.2	74	-0.24
27	Dibromomethane	0.192	0.180	6.5	74	-0.25
28	Bromodichloromethane	0.485	0.493	-1.8	80	-0.05
29	Methyl Isobutyl Ketone	0.053	0.051#	4.4	76	-0.23
30	cis-1,3-Dichloropropene	0.346	0.324	6.3	74	-0.26
31	trans-1,3-Dichloropropene	0.245	0.230	6.1	76	-0.28
32	1,3-Dichloropropane	0.242	0.242	-0.2	80	-0.26
33	Dibromochloromethane	0.346	0.325	5.9	75	-0.26
34	Bromoform	0.173	0.181	-5.0	83	-0.26
35	Toluene	0.574	0.578	-0.6	78	-0.30
36	1,1,2-Trichloroethane	0.175	0.165	5.7	75	-0.27
37	Tetrachloroethene	0.423	0.415	1.8	74	-0.28
38	1,2-Dibromoethane	0.244	0.234	4.0	76	-0.25
39	Chlorobenzene	0.762	0.770	-1.1	79	-0.23
40	1,1,1,2-Tetrachloroethane	0.356	0.347	2.4	77	-0.23
41	Ethylbenzene	0.380	0.391	-2.9	78	-0.04
42	m,p-Xylenes	0.460	0.480	-4.2	81	-0.04
43	o-Xylene	0.430	0.439	-2.0	80	-0.22
44	Styrene	0.655	0.691	-5.4	83	-0.21
45 S	1,2-Dichlorobenzene-d4	0.575	0.613	-6.5	88	-0.15

001963

47	S	Bromofluorobenzene	0.543	0.557	-2.7	84	-0.23
48		Bromobenzene	0.655	0.660	-0.8	79	-0.22
49		1,1,2,2-Tetrachloroethane	0.200	0.195	2.9	79	-0.03
50		1,2,3-Trichloropropane	0.110	0.115	-4.4	77	-0.04
51		n-Propylbenzene	1.566	1.678	-7.1	81	-0.21
52		2-Chlorotoluene	1.056	1.123	-6.4	85	-0.05
53		4-Chlorotoluene	0.939	1.001	-6.5	83	-0.01
54		1,3,5-Trimethylbenzene	0.955	1.024	-7.2	81	-0.20
55		Tert-Butylbenzene	1.063	1.180	-11.0	84	-0.16
56		1,2,4-Trimethylbenzene	0.964	1.037	-7.6	83	-0.02
57		Sec-Butylbenzene	1.566	1.708	-9.1	81	-0.16
58		1,3-Dichlorobenzene	0.656	0.688	-4.9	82	-0.03
59		1,4-Dichlorobenzene	0.660	0.702	-6.4	83	-0.02
60		p-Isopropyltoluene	1.197	1.308	-9.3	81	-0.15
61		1,2-Dichlorobenzene	0.520	0.557	-7.2	85	-0.15
62		n-Butylbenzene	1.215	1.346	-10.8	82	-0.12
63		1,2-Dibromo-3-Chloropropane	0.034	0.035#	-4.2	83	-0.12
64		1,2,4-Trichlorobenzene	0.476	0.511	-7.5	85	-0.21
65		Naphthalene	0.396	0.402	-1.5	84	-0.24
66		Hexachlorobutadiene	0.434	0.487	-12.2	83	-0.03
67		1,2,3-Trichlorobenzene	0.365	0.404	-10.8	89	-0.28

(#) = Out of Range
W6399.D 524JL.M

SPCC's out = 0 CCC's out = 0
Tue Jul 16 10:39:54 1996. VOA3

001964

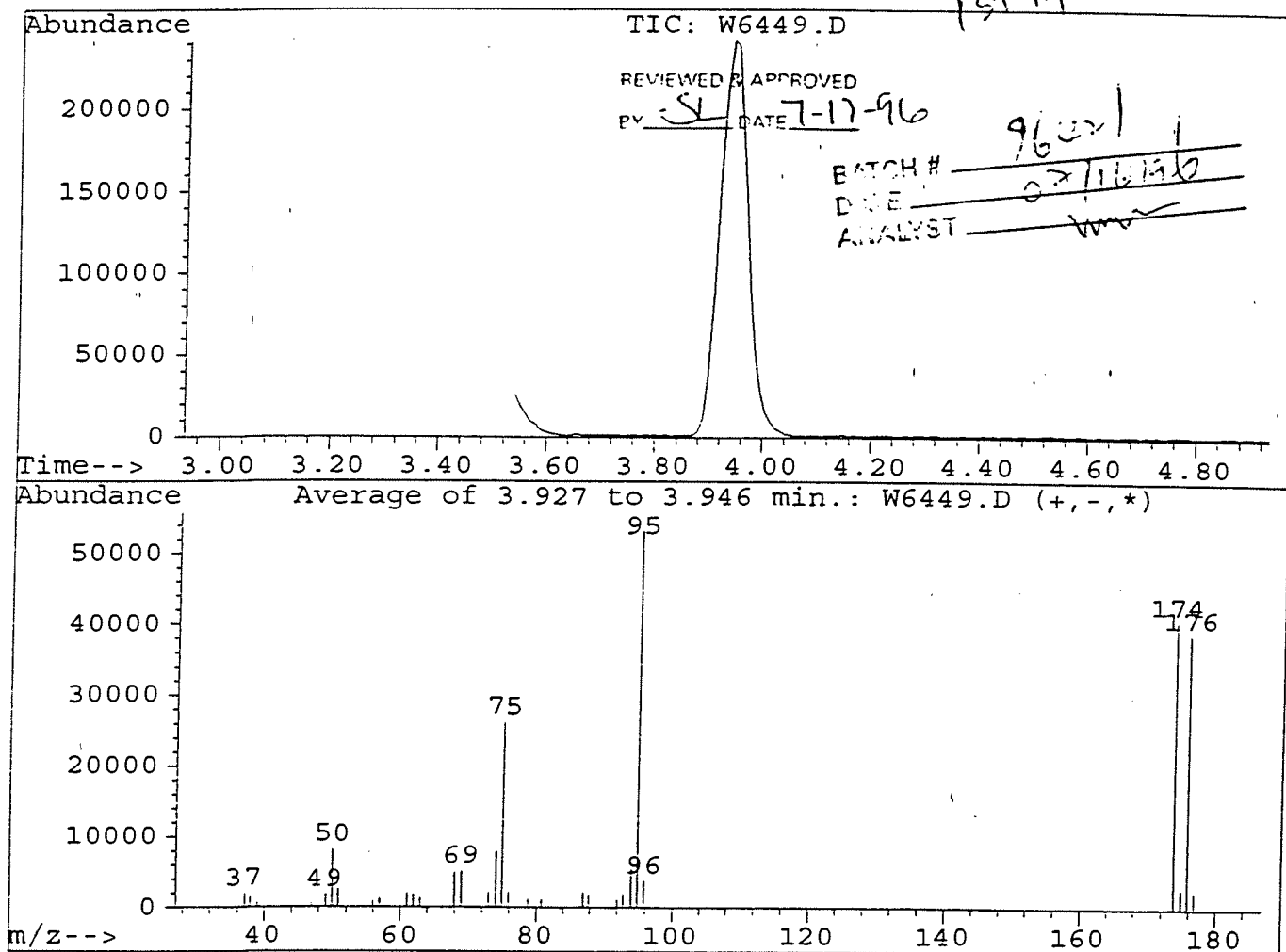
Raw Data (Chromatograms)

BFB

Data File : C:\HPCHEM\1\DATA\JUL16\W6449.D
 Acq Time : 16 Jul 96 3:32 pm
 Sample : 50 NG BFB/B#96421
 Misc : 1UL/VO9602070

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
 Title :



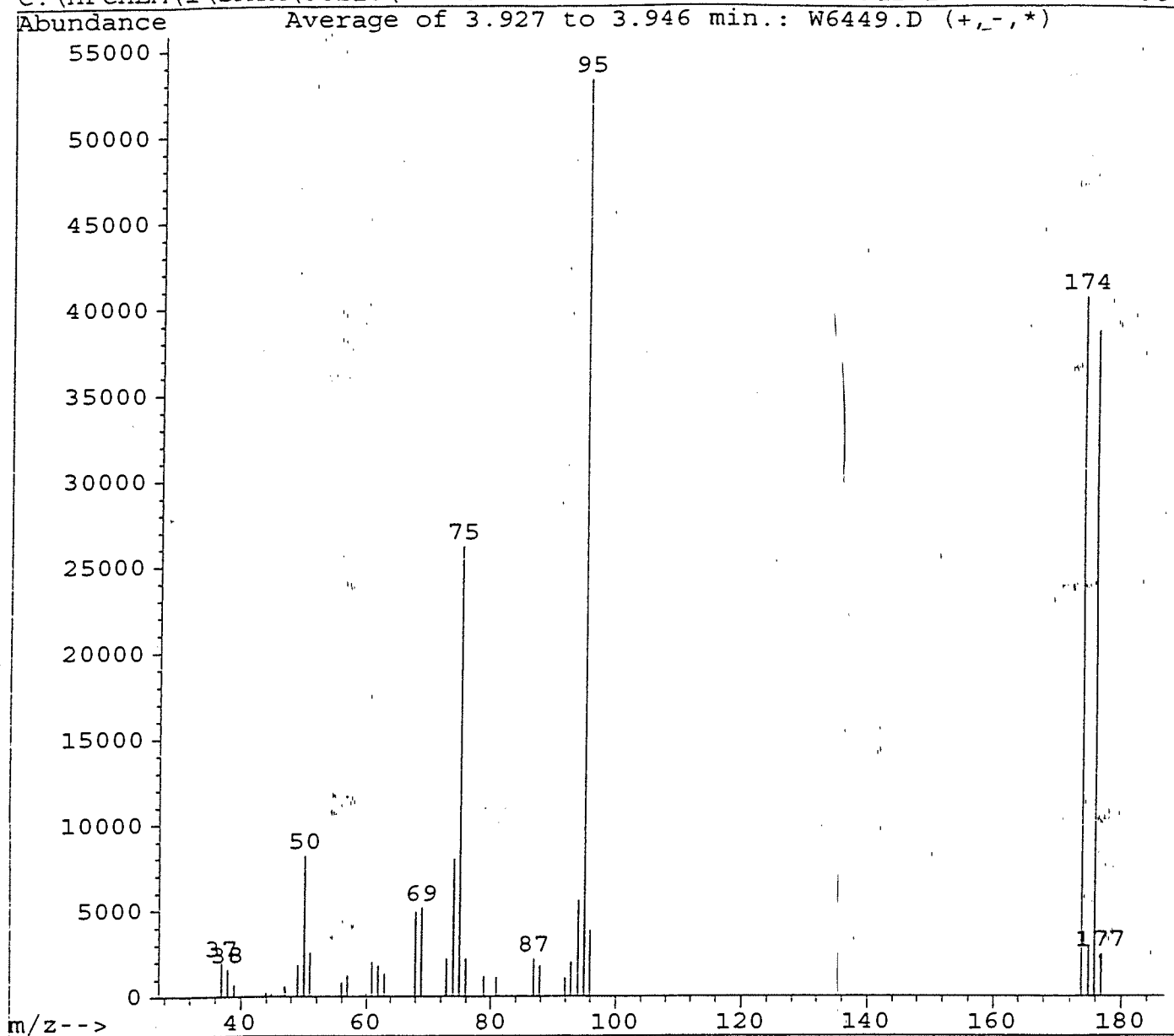
Peak Apex is scan: 42

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.4	8178	PASS
75	95	30	60	49.2	26203	PASS
95	95	100	100	100.0	53272	PASS
96	95	5	9	7.1	3793	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	76.3	40667	PASS
175	174	5	9	7.1	2869	PASS
176	174	95	101	95.2	38731	PASS
177	176	5	9	6.3	2436	PASS

BFB 624 Results

C:\HPCHEM\1\DATA\JUL16\W6449.D

Tue Jul 16 15:37:51 1996



Peak Apex is scan: 42

Average of 3 scans: 41, 42, 43 minus background scan 34

Target Mass	Comparison Mass	Lower Limit, %	Upper Limit, %	Relative Abundance, %	Result Pass/Fail
50	95	15	40	15.4	PASS
75	95	30	60	49.2	PASS
95	95	100	100	100.0	PASS
96	95	5	9	7.1	PASS
173	174	0	2	0.0	PASS
174	95	50	100	76.3	PASS
175	174	5	9	7.1	PASS
176	174	95	101	95.2	PASS
177	176	5	9	6.3	PASS

001967

47	S	Bromofluorobenzene	0.543	0.525	3.3	90	-0.20
48		Bromobenzene	0.655	0.543	17.2	75	-0.21
49		1,1,2,2-Tetrachloroethane	0.200	0.161	19.9	75	0.00
50		1,2,3-Trichloropropane	0.110	0.100	8.6	77	-0.03
51		n-Propylbenzene	1.566	1.407	10.2	78	-0.18
52		2-Chlorotoluene	1.056	0.894	15.3	78	-0.03
53		4-Chlorotoluene	0.939	0.804	14.4	76	0.00
54		1,3,5-Trimethylbenzene	0.955	0.830	13.0	75	-0.17
55		Tert-Butylbenzene	1.063	0.978	8.0	79	-0.15
56		1,2,4-Trimethylbenzene	0.964	0.838	13.1	77	0.00
57		Sec-Butylbenzene	1.566	1.447	7.6	78	-0.14
58		1,3-Dichlorobenzene	0.656	0.560	14.5	77	0.00
59		1,4-Dichlorobenzene	0.660	0.563	14.6	76	0.00
60		p-Isopropyltoluene	1.197	1.097	8.4	78	-0.13
61		1,2-Dichlorobenzene	0.520	0.434	16.5	76	-0.13
62		n-Butylbenzene	1.215	1.092	10.1	76	-0.11
63		1,2-Dibromo-3-Chloropropane	0.034	0.028#	16.2	76	-0.11
64		1,2,4-Trichlorobenzene	0.476	0.401	15.8	76	-0.19
65		Naphthalene	0.396	0.332	16.0	80	-0.21
66		Hexachlorobutadiene	0.434	0.364	16.0	71	0.00
67		1,2,3-Trichlorobenzene	0.365	0.305	16.4	77	-0.25

(#) = Out of Range
W6399.D 524JL.M

SPCC's out = 0 CCC's out = 0
Tue Jul 16 16:21:40 1996 VOA3

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6450.D
 Acq Time : 16 Jul 96 3:43 pm
 Sample : VSTD010/10PPB-524.2 STD/B#96421
 Misc : 25ML/VO9607015

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Min. RRF : 0.100 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev (Min)
1	Fluorobenzene	1.000	1.000	0.0	91	0.00
2	Dichlorodifluoromethane	0.360	0.340	5.6	85	0.09
3	Chloromethane	0.112	0.100	10.4	79	0.08
4	Vinyl Chloride	0.132	0.141	-6.5	95	0.06
5	Bromomethane	0.203	0.166	18.3	75	0.02
6	Chloroethane	0.092	0.078#	15.2	76	0.02
7	Freon 123	0.476	0.455	4.3	82	0.00
8	Trichlorofluoromethane	0.485	0.489	-0.8	87	0.00
9	Acetone	0.009	0.002#	70.7#	31#	-0.04
10	1,1-Dichloroethene	0.195	0.192	1.6	86	-0.05
11	Freon 113	0.429	0.436	-1.6	88	-0.04
12	Methylene Chloride	0.142	0.140	1.1	91	-0.08
13	1,2-Dichloroethene (trans-)	0.193	0.182	5.8	83	-0.09
4	1,1-Dichloroethane	0.285	0.258	9.4	82	-0.13
15	Methyl Ethyl Ketone	0.013	0.009#	32.3#	52	-0.38
16	2,2-Dichloropropane	0.427	0.419	1.8	81	-0.15
17	1,2-Dichloroethene (cis-)	0.231	0.262	-13.8	80	-0.16
18	Bromochloromethane	0.186	0.160	13.8	78	-0.16
19	Chloroform	0.477	0.476	0.3	78	-0.15
20	1,1-Dichloropropene	0.426	0.403	5.3	81	-0.18
21	1,2-Dichloroethane	0.217	0.192	11.5	81	-0.18
22	1,1,1-Trichloroethane	0.572	0.545	4.6	82	-0.17
23	Carbon Tetrachloride	0.534	0.501	6.3	79	-0.17
24	Benzene	0.767	0.659	14.1	77	-0.02
25	Trichloroethene	0.410	0.381	7.0	81	-0.19
26	1,2-Dichloropropane	0.264	0.223	15.7	77	-0.21
27	Dibromomethane	0.192	0.167	12.9	79	-0.21
28	Bromodichloromethane	0.485	0.409	15.5	76	-0.03
29	Methyl Isobutyl Ketone	0.053	0.042#	21.9	71	-0.19
30	cis-1,3-Dichloropropene	0.346	0.284	17.9	74	-0.23
31	trans-1,3-Dichloropropene	0.245	0.199	18.7	75	-0.26
32	1,3-Dichloropropane	0.242	0.203	16.1	76	-0.23
33	Dibromochloromethane	0.346	0.284	17.9	75	-0.23
34	Bromoform	0.173	0.145	16.1	76	-0.24
35	Toluene	0.574	0.496	13.7	76	-0.28
36	1,1,2-Trichloroethane	0.175	0.142	18.6	74	-0.24
37	Tetrachloroethene	0.423	0.394	6.7	80	-0.24
38	1,2-Dibromoethane	0.244	0.204	16.3	76	-0.23
39	Chlorobenzene	0.762	0.667	12.4	78	-0.21
40	1,1,1,2-Tetrachloroethane	0.356	0.310	13.0	79	-0.21
41	Ethylbenzene	0.380	0.343	9.7	78	-0.02
42	m,p-Xylenes	0.460	0.408	11.4	78	-0.01
43	o-Xylene	0.430	0.368	14.6	76	-0.19
44	Styrene	0.655	0.574	12.4	79	-0.18
45 S	1,2-Dichlorobenzene-d4	0.575	0.534	7.2	88	-0.14
46	Isopropylbenzene	1.306	1.182	9.4	78	-0.22

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Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6450.D
 Acq Time : 16 Jul 96 3:43 pm
 Sample : VSTD010/10PPB-524.2 STD/B#96421
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 16:16 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96 ON 537-32/
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.12	96	433386	10.00	ug/l	0.00

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
45) 1,2-Dichlorobenzene-d4	24.79	150	231535	9.28	ug/l	92.83%
47) Bromofluorobenzene	21.35	95	227473	9.67	ug/l	96.74%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethane	3.20	85	147246	9.44	ug/l	97
3) Chloromethane	3.57	50	43498	8.96	ug/l	94
4) Vinyl Chloride	3.73	62	60964	10.65	ug/l	95
5) Bromomethane	4.38	94	71776	8.17	ug/l	96
6) Chloroethane	4.49	64	33946	8.48	ug/l	96
7) Freon 123	4.85	83	197266	9.57	ug/l	97
8) Trichlorofluoromethane	4.87	101	211762	10.08	ug/l	100
9) Acetone	5.59	43	4323	11.71	ug/l	100
10) 1,1-Dichloroethene	5.78	96	83215	9.84	ug/l	98
11) Freon 113	5.50	101	188773	10.16	ug/l	96
12) Methylene Chloride	6.52	84	60766	9.89	ug/l	91
13) 1,2-Dichloroethene (trans-)	7.02	96	78955	9.42	ug/l	96
14) 1,1-Dichloroethane	7.72	63	111862	9.06	ug/l	100
15) Methyl Ethyl Ketone	8.48	43	15122	27.09	ug/l	100
16) 2,2-Dichloropropane	8.72	77	181658	9.82	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.79	96	113733	11.38	ug/l	97
18) Bromochloromethane	9.40	130	69367	8.62	ug/l	85
19) Chloroform	9.09	83	206172	9.97	ug/l	99
20) 1,1-Dichloropropene	10.16	75	174693	9.47	ug/l	98
21) 1,2-Dichloroethane	10.66	62	83117	8.85	ug/l	98
22) 1,1,1-Trichloroethane	9.86	97	236369	9.54	ug/l	96
23) Carbon Tetrachloride	10.38	117	217044	9.37	ug/l	98
24) Benzene	10.71	78	285818	8.59	ug/l	100
25) Trichloroethene	11.96	130	165145	9.30	ug/l	94
26) 1,2-Dichloropropane	12.34	63	96443	8.43	ug/l	55
27) Dibromomethane	12.97	174	72530	8.71	ug/l	84
28) Bromodichloromethane	12.84	83	177467	8.45	ug/l	98
29) Methyl Isobutyl Ketone	13.61	43	72012	31.26	ug/l	79
30) cis-1,3-Dichloropropene	14.06	75	123099	8.21	ug/l	97
31) trans-1,3-Dichloropropene	15.30	75	86350	8.13	ug/l	96
32) 1,3-Dichloropropane	16.36	76	87881	8.39	ug/l	99
33) Dibromochloromethane	17.02	129	123078	8.21	ug/l	99
34) Bromoform	20.72	173	62789	8.39	ug/l	100
35) Toluene	14.85	92	214782	8.63	ug/l	99
36) 1,1,2-Trichloroethane	15.71	97	61578	8.14	ug/l	100
37) Tetrachloroethene	16.54	164	170848	9.33	ug/l	96
38) 1,2-Dibromoethane	17.51	107	88573	8.37	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6450.D
Acq Time : 16 Jul 96 3:43 pm
Sample : VSTD010/10PPB-524.2 STD/B#96421
Misc : 25ML/VO9607015
Quant Time: Jul 16 16:16 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Chlorobenzene	18.53	112	289075	8.76	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.64	131	134147	8.70	ug/l	97
41) Ethylbenzene	18.67	106	148754	9.03	ug/l	94
42) m,p-Xylenes	18.86	106	353427	17.72	ug/l	93
43) o-Xylene	19.88	106	159307	8.54	ug/l	92
44) Styrene	19.96	104	248884	8.76	ug/l	99
46) Isopropylbenzene	20.73	105	512402	9.06	ug/l	97
48) Bromobenzene	21.79	77	235122	8.28	ug/l	95
49) 1,1,2,2-Tetrachloroethane	21.15	83	69559	8.01	ug/l	97
50) 1,2,3-Trichloropropane	21.50	75	43512	9.14	ug/l	90
51) n-Propylbenzene	21.74	91	609807	8.98	ug/l	94
52) 2-Chlorotoluene	22.13	91	387469	8.47	ug/l	91
53) 4-Chlorotoluene	22.25	91	348563	8.56	ug/l	84
54) 1,3,5-Trimethylbenzene	22.11	105	359902	8.70	ug/l	95
55) Tert-Butylbenzene	22.92	119	423662	9.20	ug/l	98
56) 1,2,4-Trimethylbenzene	23.01	105	362981	8.69	ug/l	97
57) Sec-Butylbenzene	23.40	105	627019	9.24	ug/l	97
58) 1,3-Dichlorobenzene	23.87	146	242848	8.55	ug/l	98
59) 1,4-Dichlorobenzene	24.10	146	244144	8.54	ug/l	99
60) p-Isopropyltoluene	23.70	119	475579	9.16	ug/l	98
61) 1,2-Dichlorobenzene	24.85	146	188139	8.35	ug/l	97
62) n-Butylbenzene	24.55	91	473431	8.99	ug/l	97
63) 1,2-Dibromo-3-Chloropropan	26.35	75	12223	8.38	ug/l	79
64) 1,2,4-Trichlorobenzene	28.05	180	173643	8.42	ug/l	96
65) Naphthalene	28.61	128	144056	8.40	ug/l	96
66) Hexachlorobutadiene	28.37	225	157752	8.40	ug/l	88
67) 1,2,3-Trichlorobenzene	29.17	180	132302	8.36	ug/l	99

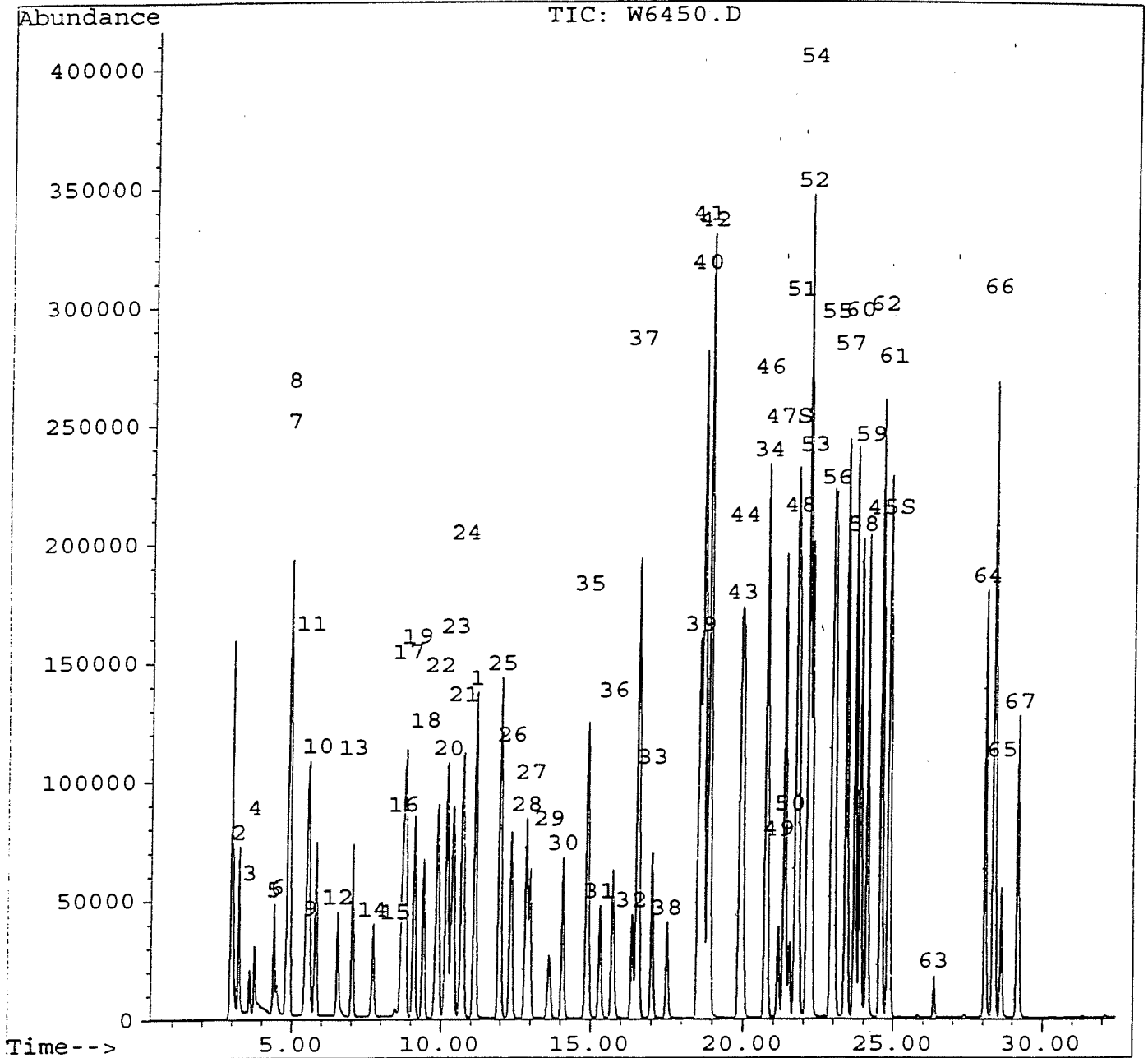
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6450.D
 Acq Time : 16 Jul 96 3:43 pm
 Sample : VSTD010/10PPB-524.2 STD/B#96421
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 16:16 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



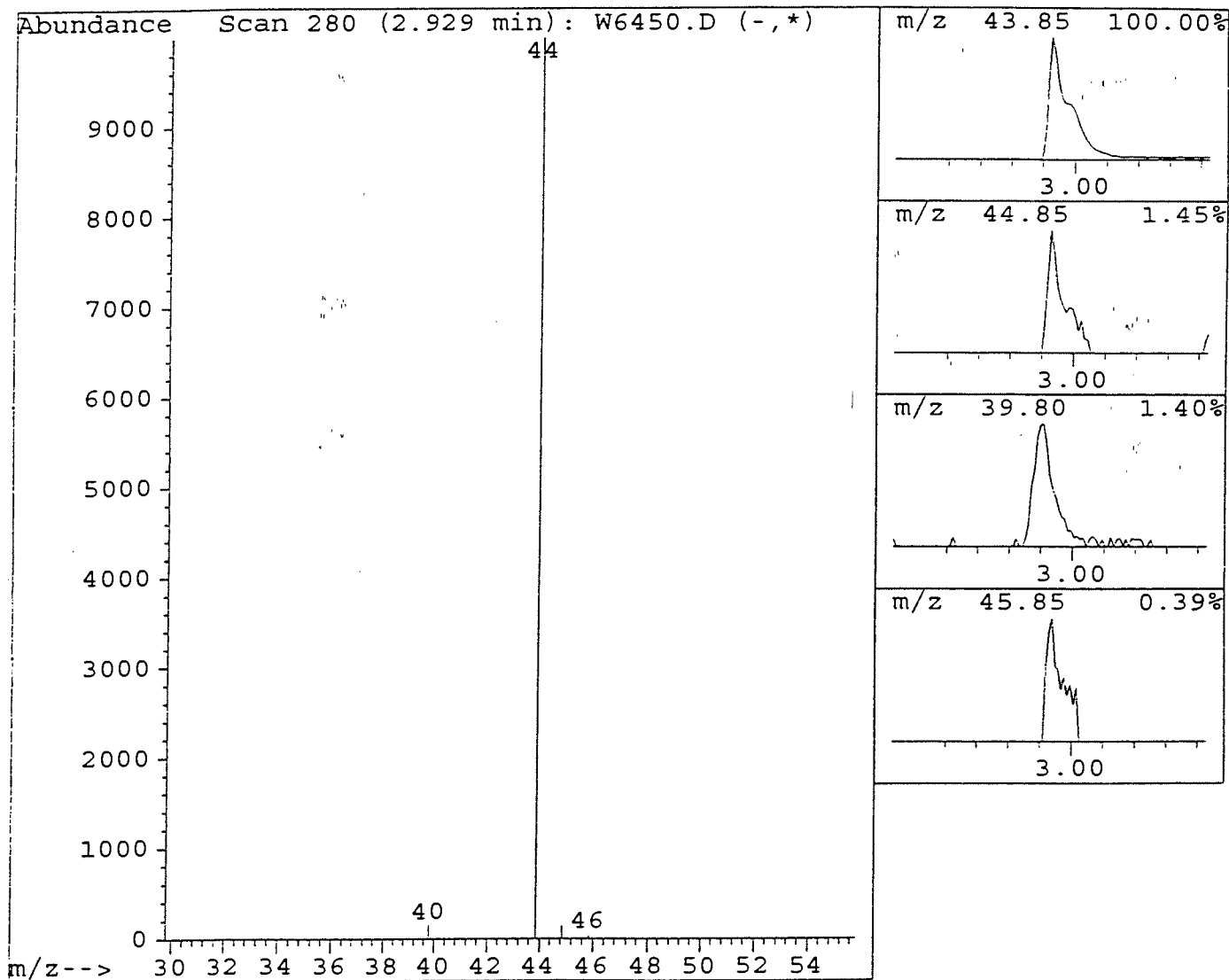
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6450.D
Acq Time : 16 Jul 96 3:43 pm
Sample : VSTD010/10PPB-524.2 STD/B#96421
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.93	7.89 ug/l	686658	Fluorobenzene	11.12	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits	From C:\DATABASE\NBS75K.L	0	000000-00-0	0



Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6451.D

Acq Time : 16 Jul 96 4:20 pm

Sample : 10PPB-QCCS-1/B#96421

Misc : 25ML/VO9607015

Quant Time: Jul 17 10:43 1996

BATCH #

DATE

ANALYST

Operator: DEBBIE

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Last Update : Tue Jul 16 10:03:38 1996

Response via : Multiple Level Calibration

REVIEWED
SL 7

V = 0.7 - 239

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.11	96	426463	10.00	ug/l	0.00

System Monitoring Compounds

	R.T.	QIon	Response	Conc	Units	%Recovery
45) 1,2-Dichlorobenzene-d4	24.81	150	243266	9.91	ug/l	99.12%
47) Bromofluorobenzene	21.35	95	228707	9.88	ug/l	98.84%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethane	3.20	85	173200	11.28	ug/l	98
3) Chloromethane	3.57	50	52609	11.01	ug/l	94
4) Vinyl Chloride	3.73	62	62570	11.11	ug/l	97
5) Bromomethane	4.38	94	92107	10.65	ug/l	93
6) Chloroethane	4.50	64	41942	10.64	ug/l	95
7) Freon 123	4.84	83	233794	11.52	ug/l	98
8) Trichlorofluoromethane	4.88	101	243917	11.80	ug/l	100
9) Acetone	5.59	43	16384	45.10	ug/l	100
10) 1,1-Dichloroethene	5.79	96	95274	11.44	ug/l	97
11) Freon 113	5.51	101	213227	11.66	ug/l	97
12) Methylene Chloride	6.53	84	77694	12.85	ug/l	91
13) 1,2-Dichloroethene (trans-	7.02	96	92579	11.22	ug/l	97
14) 1,1-Dichloroethane	7.71	63	132956	10.95	ug/l	98
15) Methyl Ethyl Ketone	8.48	43	18515	33.71	ug/l	100
16) 2,2-Dichloropropane	8.72	77	142290	7.82	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.80	96	108490	11.03	ug/l	97
18) Bromochloromethane	9.40	130	86620	10.94	ug/l	86
19) Chloroform	9.09	83	252635	12.42	ug/l	100
20) 1,1-Dichloropropene	10.16	75	203583	11.21	ug/l	98
21) 1,2-Dichloroethane	10.66	62	103395	11.18	ug/l	96
22) 1,1,1-Trichloroethane	9.86	97	276214	11.33	ug/l	96
23) Carbon Tetrachloride	10.38	117	250300	10.98	ug/l	99
24) Benzene	10.71	78	347480	10.62	ug/l	100
25) Trichloroethene	11.97	130	193953	11.10	ug/l	96
26) 1,2-Dichloropropane	12.34	63	119751	10.64	ug/l	53
27) Dibromomethane	12.97	174	90438	11.04	ug/l	84
28) Bromodichloromethane	12.84	83	223321	10.80	ug/l	99
29) Methyl Isobutyl Ketone	13.60	43	100136	44.17	ug/l	93
30) cis-1,3-Dichloropropene	14.06	75	157528	10.68	ug/l	97
31) trans-1,3-Dichloropropene	15.32	75	110411	10.56	ug/l	97
32) 1,3-Dichloropropane	16.37	76	111673	10.83	ug/l	97
33) Dibromochloromethane	17.02	129	159419	10.81	ug/l	99
34) Bromoform	0.00	173		Not Detected		
35) Toluene	14.87	92	265947	10.86	ug/l	99
36) 1,1,2-Trichloroethane	15.71	97	81700	10.97	ug/l	100
37) Tetrachloroethene	16.55	164	199238	11.06	ug/l	95
38) 1,2-Dibromoethane	17.53	107	115233	11.07	ug/l	100
39) Chlorobenzene	18.54	112	357269	11.00	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.65	131	165127	10.89	ug/l	96
41) Ethylbenzene	18.68	106	176334	10.88	ug/l	98
42) m,p-Xylenes	18.87	106	430591	21.94	ug/l	91

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43)	o-Xylene	19.89	106	199440	10.87 ug/l	90
44)	Styrene	19.97	104	312334	11.18 ug/l	98
46)	Isopropylbenzene	20.74	105	619859	11.13 ug/l	97
48)	Bromobenzene	21.82	77	297090	10.63 ug/l	93
49)	1,1,2,2-Tetrachloroethane	21.16	83	92400	10.81 ug/l	97
50)	1,2,3-Trichloropropane	21.53	75	54785	11.70 ug/l	88
51)	n-Propylbenzene	21.74	91	742159	11.11 ug/l	94
52)	2-Chlorotoluene	22.14	91	477882	10.61 ug/l	91
53)	4-Chlorotoluene	22.26	91	455430	11.37 ug/l	89
54)	1,3,5-Trimethylbenzene	22.12	105	449381	11.04 ug/l	96
55)	Tert-Butylbenzene	22.94	119	518485	11.44 ug/l	98
56)	1,2,4-Trimethylbenzene	23.02	105	454307	11.06 ug/l	96
57)	Sec-Butylbenzene	23.41	105	759011	11.36 ug/l	97
58)	1,3-Dichlorobenzene	23.88	146	302738	10.83 ug/l	99
59)	1,4-Dichlorobenzene	24.11	146	310739	11.05 ug/l	99
60)	p-Isopropyltoluene	23.71	119	587519	11.51 ug/l m	19
61)	1,2-Dichlorobenzene	24.86	146	244970	11.05 ug/l	96
62)	n-Butylbenzene	24.56	91	591428	11.41 ug/l	98
63)	1,2-Dibromo-3-Chloropropan	26.35	75	16218	11.30 ug/l	72
64)	1,2,4-Trichlorobenzene	28.06	180	230231	11.35 ug/l	96
65)	Naphthalene	28.61	128	199508	11.82 ug/l	95
66)	Hexachlorobutadiene	28.37	225	212036	11.47 ug/l	98
67)	1,2,3-Trichlorobenzene	29.17	180	180174	11.57 ug/l	98

(#) = qualifier out of range (m) = manual integration

W6451.D

524JL.M

Wed Jul 17 10:44:46 1996

VOA3

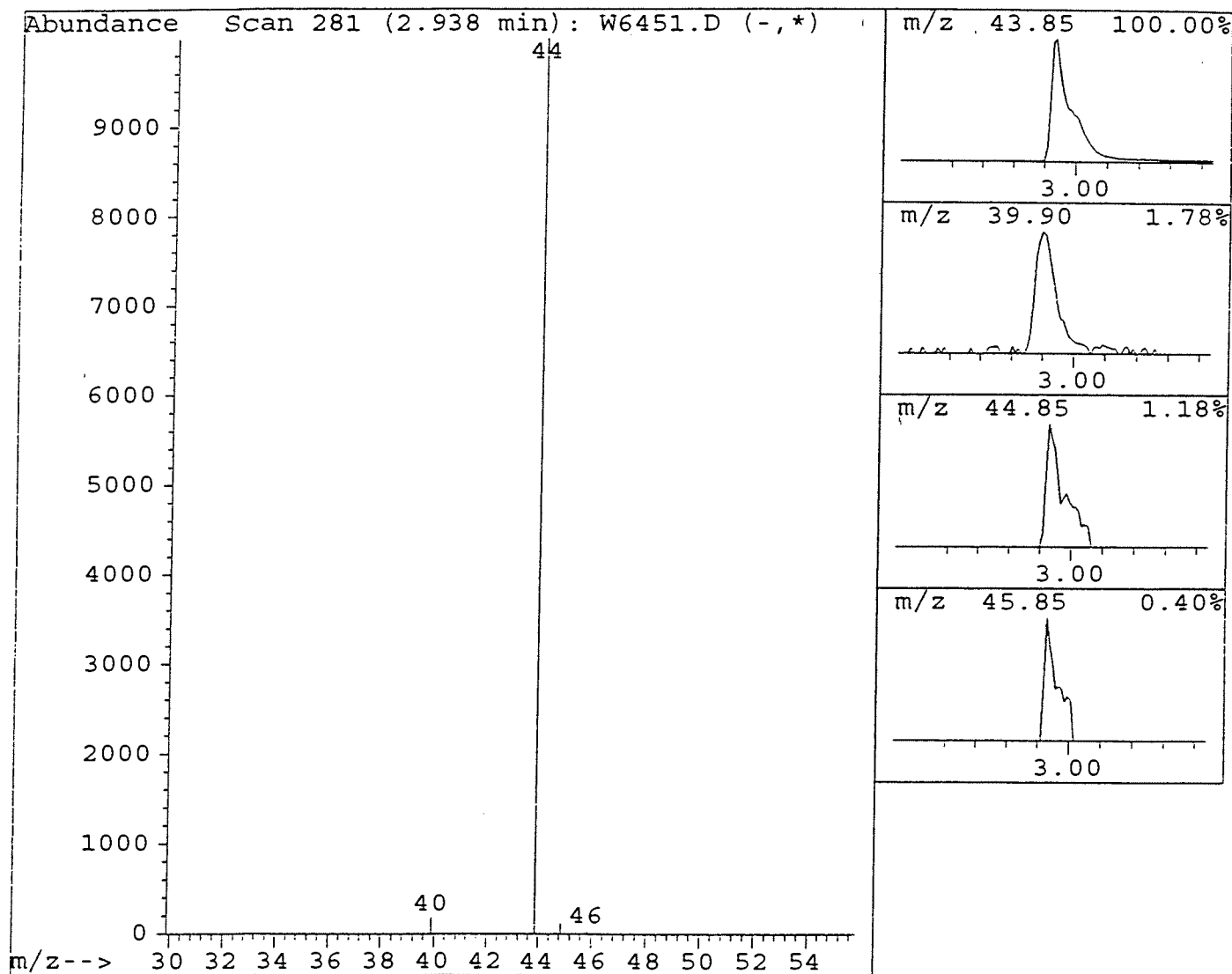
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6451.D
Acq Time : 16 Jul 96 4:20 pm
Sample : 10PPB-QCCS-1/B#96421
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.94	8.46 ug/l	731332	Fluorobenzene	11.11	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 No Hits From C:\DATABASE\NBS75K.L			0	000000-00-0	0

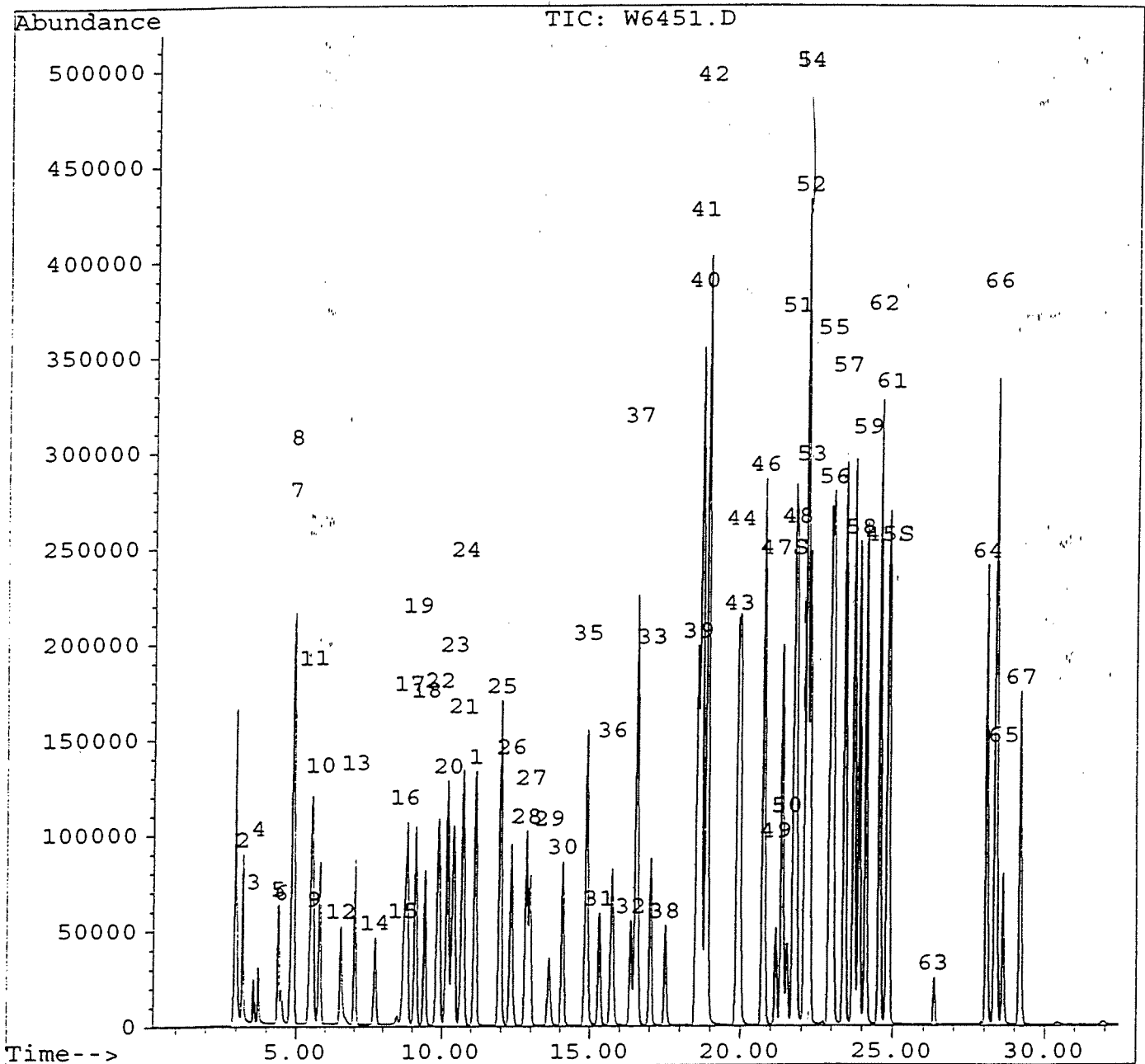


Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6451.D
 Acq Time : 16 Jul 96 4:20 pm
 Sample : 10PPB-QCCS-1/B#96421
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 16:53 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



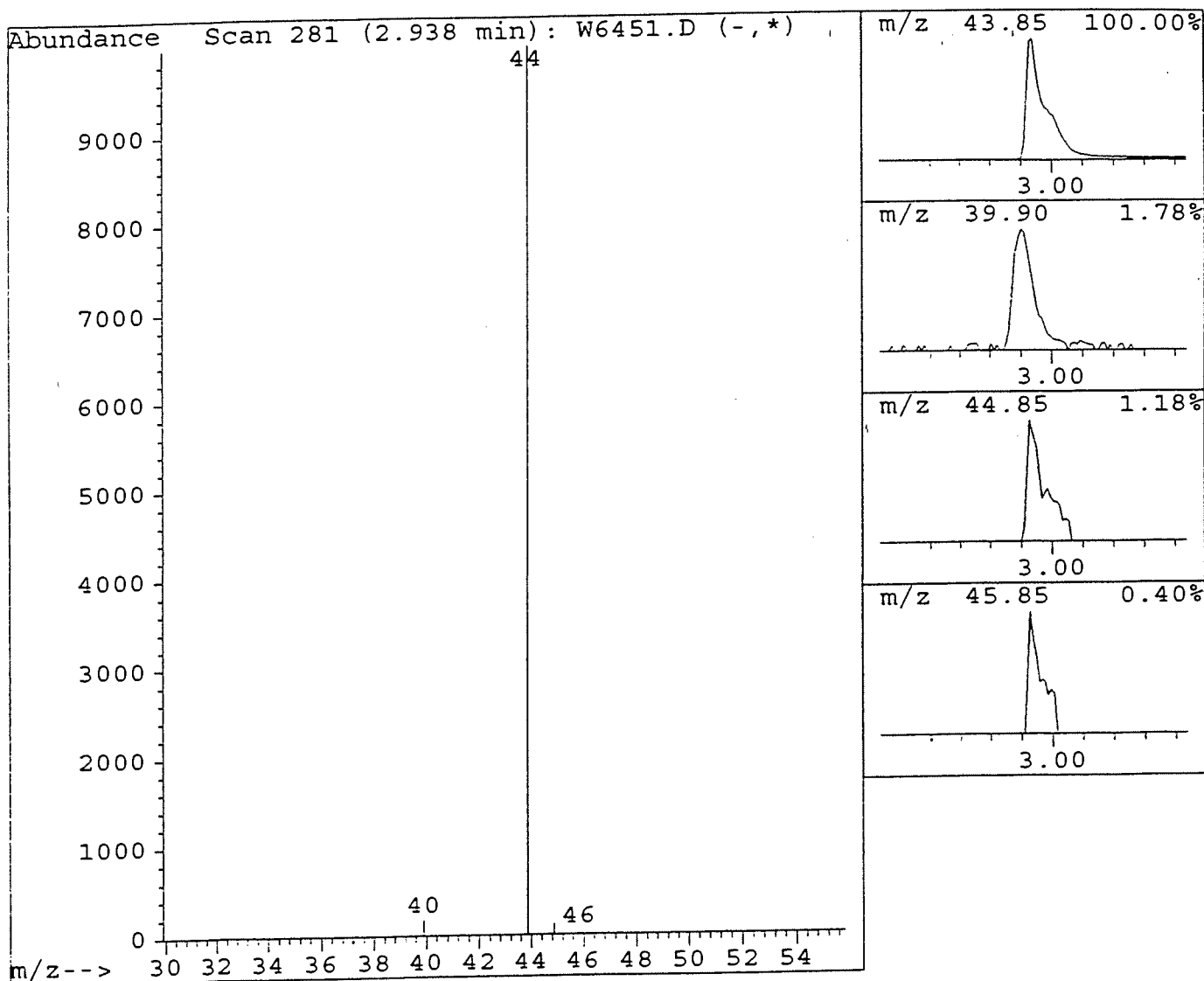
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6451.D
Acq Time : 16 Jul 96 4:20 pm
Sample : 10PPB-QCCS-1/B#96421
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.94	8.46 ug/l	731332	Fluorobenzene	11.11	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 No Hits From C:\DATABASE\NBS75K.L			0	000000-00-0	0



Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6452.D

Acq Time : 16 Jul 96 4:59 pm

Sample : 10PPB-QCCS-2/B#96421

Misc : 25ML/VO9607015

Quant Time: Jul 16 17:32 1996

Operator: DEBBIE

Inst : VOA3

Multiplr: 1.00

ANALYST

REVIEWED & APPROVED

Method : C:\HPCHEM\1\METHODS\524JL.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3 DATE 7-11

Last Update : Tue Jul 16 10:03:38 1996

Response via : Multiple Level Calibration

V=67-2392

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.12	96	422571	10.00	ug/l	0.00
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.79	150	239218	9.84	ug/l	%Recovery 98.37
47) Bromofluorobenzene	21.34	95	222854	9.72	ug/l	97.20
Target Compounds						
2) Dichlorodifluoromethane	3.21	85	161553	10.62	ug/l	Qvalue 98
3) Chloromethane	3.57	50	50846	10.74	ug/l	95
4) Vinyl Chloride	3.73	62	60374	10.82	ug/l	96
5) Bromomethane	4.39	94	88688	10.35	ug/l	93
6) Chloroethane	4.50	64	39205	10.04	ug/l	93
7) Freon 123	4.85	83	222758	11.08	ug/l	98
8) Trichlorofluoromethane	4.88	101	227836	11.12	ug/l	100
9) Acetone	5.59	43	14348	39.86	ug/l	100
10) 1,1-Dichloroethene	5.79	96	96020	11.64	ug/l	98
11) Freon 113	5.50	101	200289	11.05	ug/l	96
12) Methylene Chloride	6.54	84	72445	12.10	ug/l	92
13) 1,2-Dichloroethene (trans-)	7.02	96	88924	10.88	ug/l	97
14) 1,1-Dichloroethane	7.72	63	128189	10.65	ug/l	98
15) Methyl Ethyl Ketone	8.47	43	17562	32.26	ug/l	100
16) 2,2-Dichloropropane	8.72	77	11193	0.62	ug/l #	71
17) 1,2-Dichloroethene (cis-)	8.79	96	132603	13.61	ug/l	91
18) Bromochloromethane	9.41	130	84948	10.83	ug/l	85
19) Chloroform	9.09	83	245574	12.18	ug/l	100
20) 1,1-Dichloropropene	10.16	75	196837	10.94	ug/l	98
21) 1,2-Dichloroethane	10.66	62	98157	10.72	ug/l	95
22) 1,1,1-Trichloroethane	9.87	97	246867	10.22	ug/l	95
23) Carbon Tetrachloride	10.37	117	239726	10.61	ug/l	99
24) Benzene	10.71	78	340206	10.49	ug/l	100
25) Trichloroethene	11.96	130	186573	10.78	ug/l	96
26) 1,2-Dichloropropane	12.33	63	115849	10.39	ug/l	52
27) Dibromomethane	12.97	174	88386	10.89	ug/l	84
28) Bromodichloromethane	12.84	83	218575	10.67	ug/l	99
29) Methyl Isobutyl Ketone	13.60	43	96147	42.80	ug/l	91
30) cis-1,3-Dichloropropene	14.06	75	141974	9.71	ug/l	97
31) trans-1,3-Dichloropropene	15.30	75	77412	7.47	ug/l	98
32) 1,3-Dichloropropane	16.35	76	108507	10.62	ug/l	97
33) Dibromochloromethane	17.03	129	151908	10.39	ug/l	98
34) Bromoform	20.73	173	78208	10.72	ug/l	100
35) Toluene	14.85	92	254006	10.47	ug/l	99
36) 1,1,2-Trichloroethane	15.70	97	80468	10.91	ug/l	100
37) Tetrachloroethene	16.52	164	192460	10.78	ug/l	95
38) 1,2-Dibromoethane	17.51	107	111178	10.77	ug/l	100

(#)= qualifier out of range (m) = manual integration

W6452.D 524JL.M

Tue Jul 16 17:33:00 1996

VOA3

Page 1

001979

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6452.D
Acq Time : 16 Jul 96 4:59 pm
Sample : 10PPB-QCCS-2/B#96421
Misc : 25ML/VO9607015
Quant Time: Jul 16 17:32 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Chlorobenzene	18.54	112	338559	10.52	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.64	131	159372	10.60	ug/l	98
41) Ethylbenzene	18.68	106	168330	10.48	ug/l	96
42) m,p-Xylenes	18.86	106	409953	21.08	ug/l	91
43) o-Xylene	19.88	106	190157	10.46	ug/l	90
44) Styrene	19.95	104	296099	10.69	ug/l	98
46) Isopropylbenzene	20.73	105	582779	10.56	ug/l	97
48) Bromobenzene	21.80	77	290657	10.50	ug/l	95
49) 1,1,2,2-Tetrachloroethane	21.14	83	89488	10.57	ug/l	98
50) 1,2,3-Trichloropropane	21.51	75	54892	11.83	ug/l	91
51) n-Propylbenzene	21.73	91	695474	10.51	ug/l	94
52) 2-Chlorotoluene	22.12	91	456196	10.22	ug/l	90
53) 4-Chlorotoluene	22.25	91	433133	10.91	ug/l	84
54) 1,3,5-Trimethylbenzene	22.11	105	420600	10.43	ug/l	95
55) Tert-Butylbenzene	22.93	119	484876	10.79	ug/l	98
56) 1,2,4-Trimethylbenzene	23.01	105	426772	10.48	ug/l	97
57) Sec-Butylbenzene	23.40	105	710437	10.73	ug/l	97
58) 1,3-Dichlorobenzene	23.87	146	294127	10.62	ug/l	98
59) 1,4-Dichlorobenzene	24.10	146	297680	10.68	ug/l	99
60) p-Isopropyltoluene	23.70	119	550561	10.88	ug/l	99
61) 1,2-Dichlorobenzene	24.85	146	235960	10.74	ug/l	96
62) n-Butylbenzene	24.55	91	551589	10.74	ug/l	98
63) 1,2-Dibromo-3-Chloropropan	26.35	75	15266	10.74	ug/l	71
64) 1,2,4-Trichlorobenzene	28.05	180	222635	11.08	ug/l	96
65) Naphthalene	28.60	128	184903	11.05	ug/l	96
66) Hexachlorobutadiene	28.36	225	202912	11.08	ug/l	100
67) 1,2,3-Trichlorobenzene	29.16	180	174548	11.31	ug/l	97

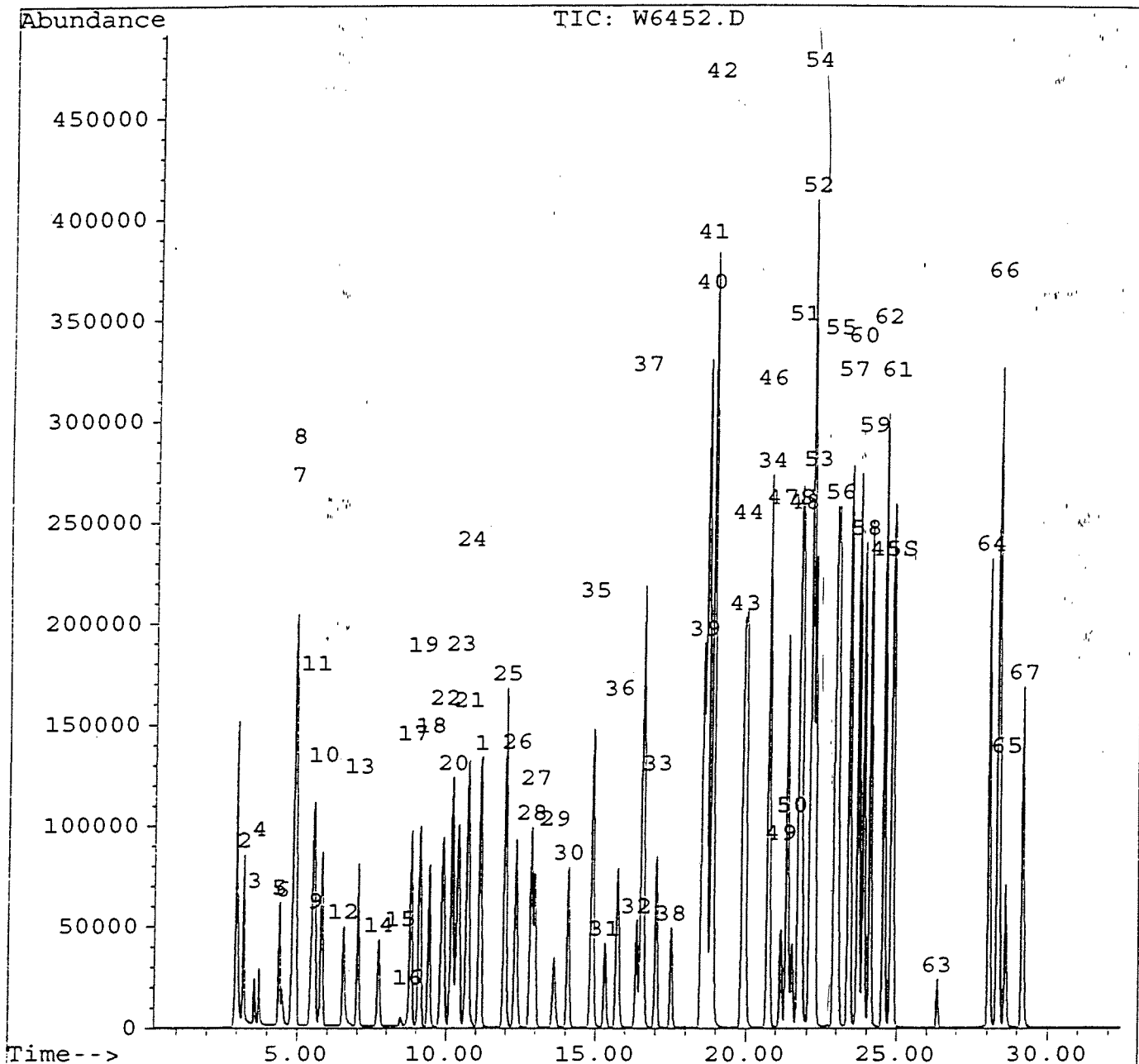
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6452.D
 Acq Time : 16 Jul 96 4:59 pm
 Sample : 10PPB-QCCS-2/B#96421
 Misc : 25ML/VO9607015
 Quant Time: Jul 16 17:32 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



Library Search Compound Report

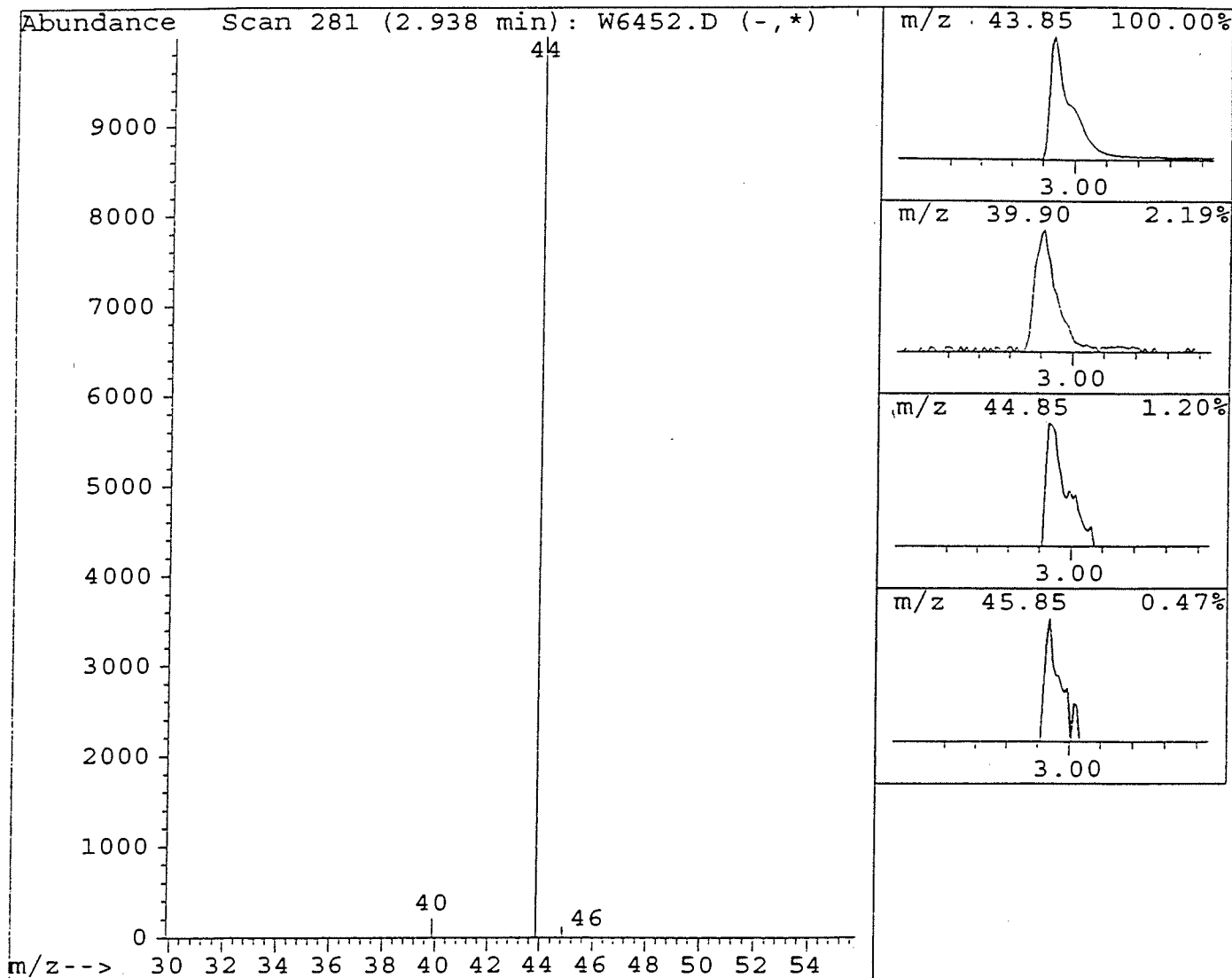
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Acq Time : 16 Jul 96 4:59 pm
Sample : 10PPB-QCCS-2/B#96421
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.94	8.08 ug/l	694686	Fluorobenzene	11.12

Hit#	of	Tentative ID	Ref#	CAS#	Qual
1	No Hits	From C:\DATABASE\NBS75K.L	0	000000-00-0	0



Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6454.D
 Acq Time : 16 Jul 96 6:17 pm
 Sample : METHOD-BLANK/B#96421
 Misc : 25ML/
 Quant Time: Jul 16 18:50 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.10	96	411913	10.00	ug/l	-0.02

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
45) 1,2-Dichlorobenzene-d4	24.78	150	240532	10.15	ug/l	101.47%
47) Bromofluorobenzene	21.33	95	237727	10.64	ug/l	106.37%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
9) Acetone	5.60	43	1439	4.10 0.79	ug/l	# 100
12) Methylene Chloride	6.51	84	4598	0.79	ug/l	# 100
21) 1,2-Dichloroethane	11.08	62	5707	0.64 0.27	ug/l	# 48
65) Naphthalene	28.61	128	4480	0.27	ug/l	# 81

V=524.2 207-1289

REVIEWED & APPROVED
 BY SL DATE 7-17-96

BATCH # 96421
 DATE 07/16/96
 ANALYST W

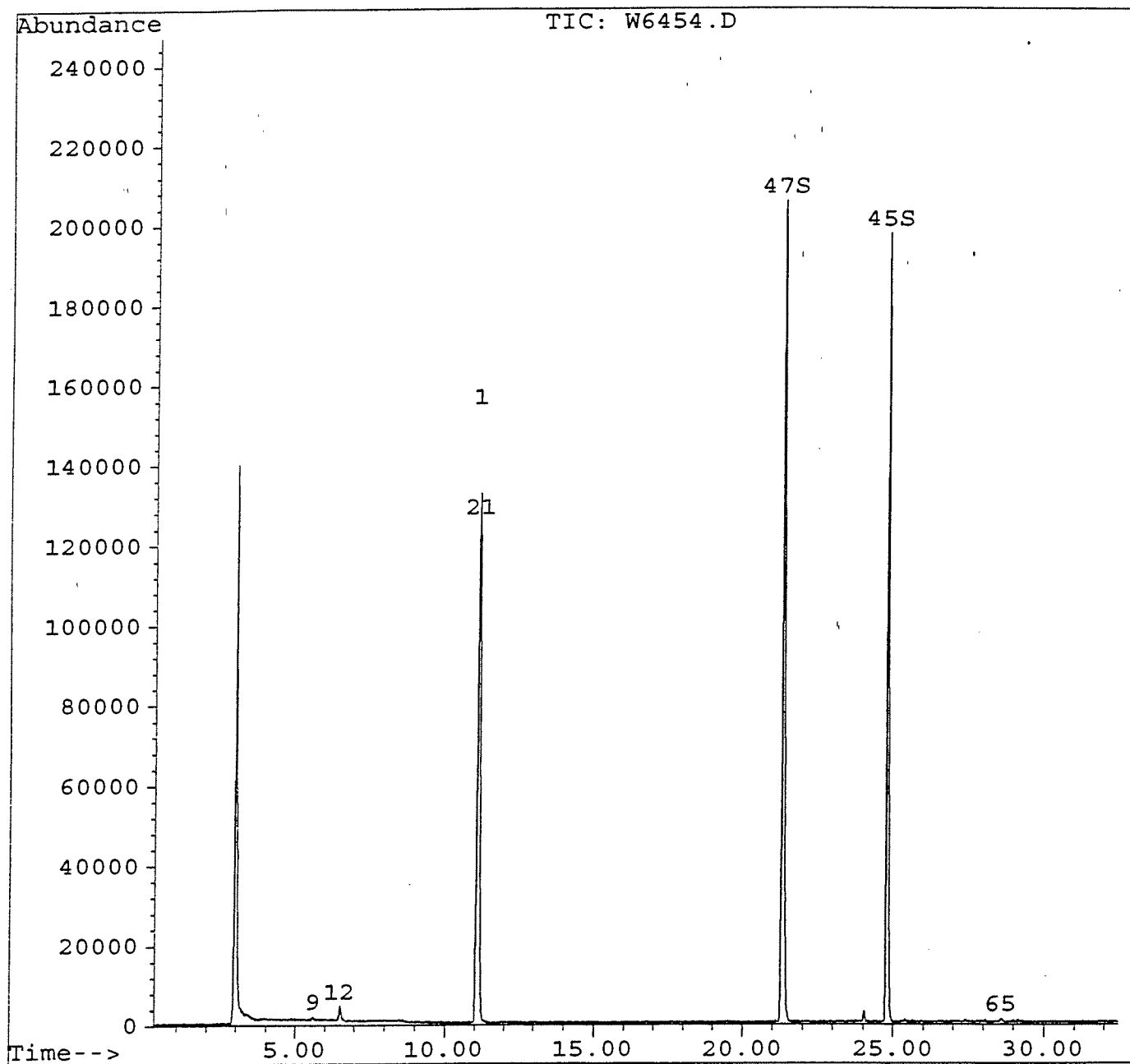
(#) = qualifier out of range (m) = manual integration

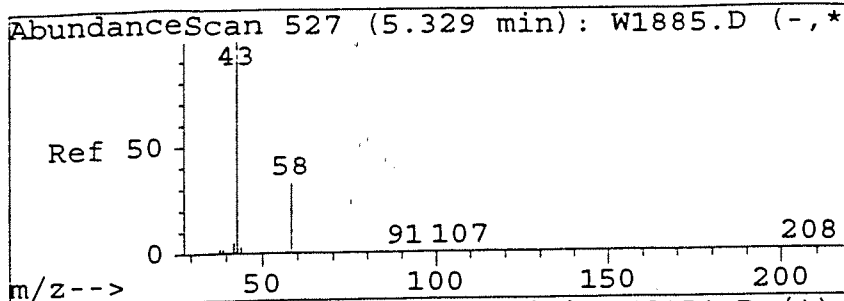
Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6454.D
Acq Time : 16 Jul 96 6:17 pm
Sample : METHOD-BLANK/B#96421
Misc : 25ML/
Quant Time: Jul 16 18:50 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

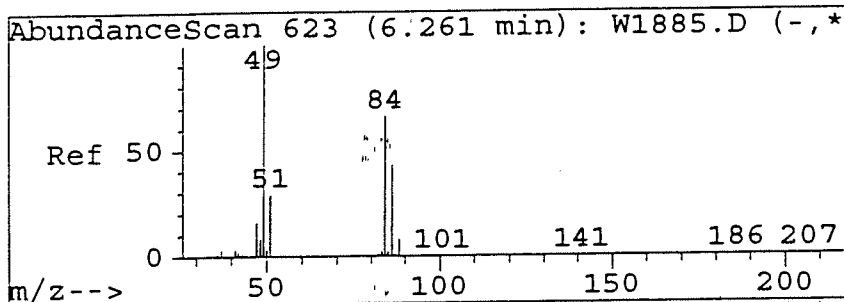
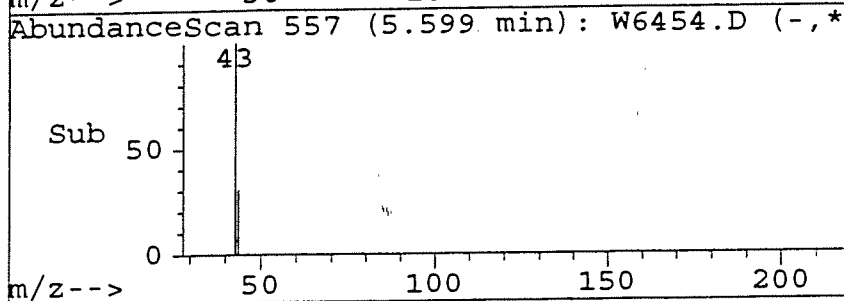
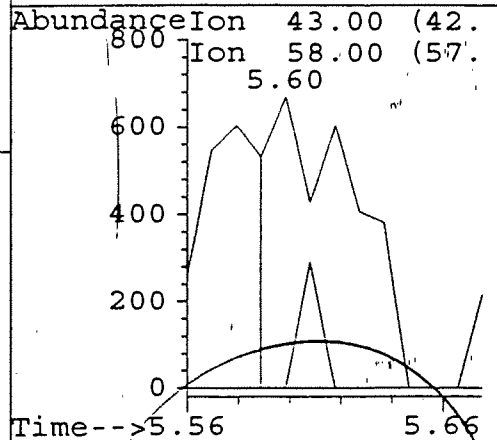
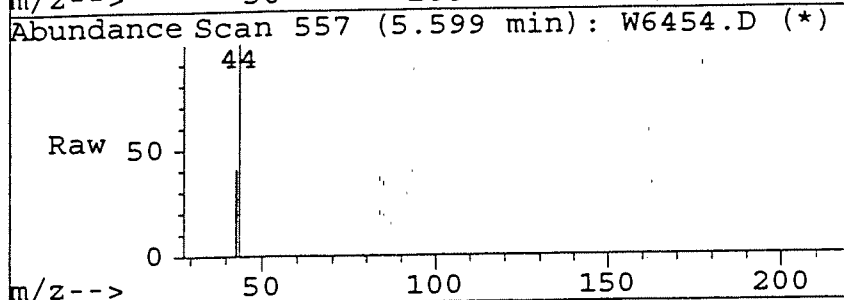
Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration





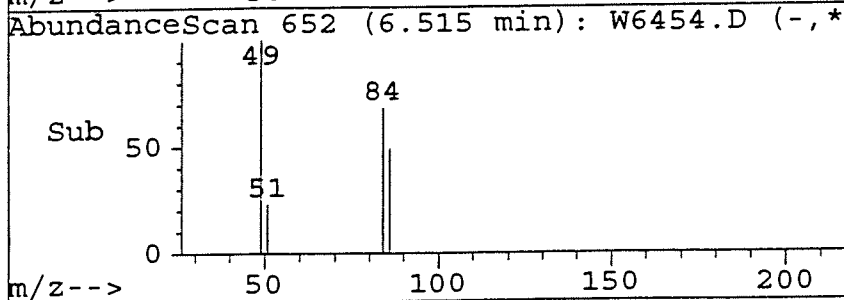
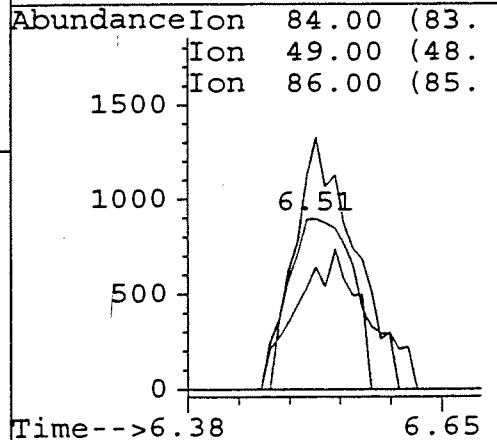
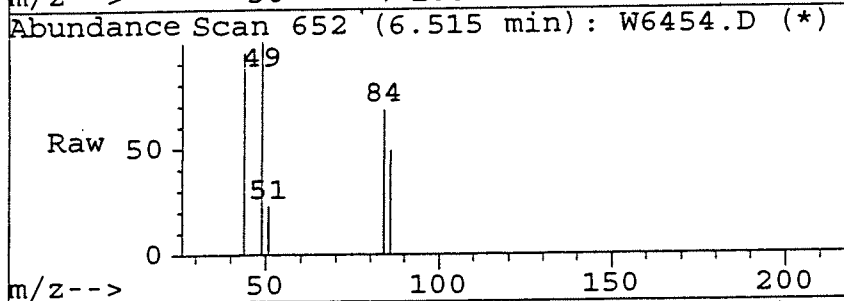
#9
Acetone
Concen: 4.10 ug/l
RT: 5.60 min Scan# 557
Delta R.T. -0.03 min
Lab File: W6454.D
Acq: 16 Jul 96 6:17 pm

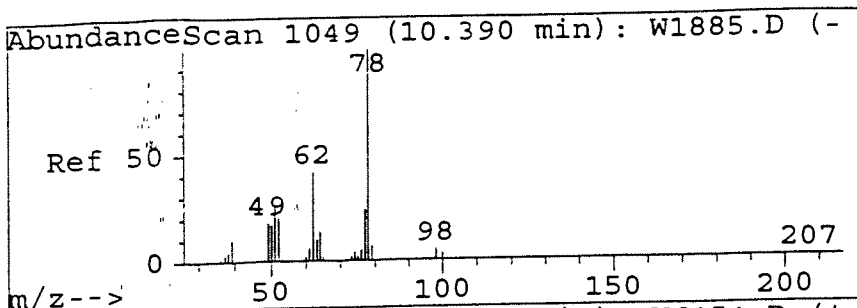
Tgt Ion:43	Resp:	1439
Ion Ratio	Lower	Upper
43 100		
58 0.0	0.0	50.0
0 0.0	0.0	0.0
0 0.0	0.0	0.0



#12
Methylene Chloride
Concen: 0.79 ug/l
RT: 6.51 min Scan# 652
Delta R.T. -0.09 min
Lab File: W6454.D
Acq: 16 Jul 96 6:17 pm

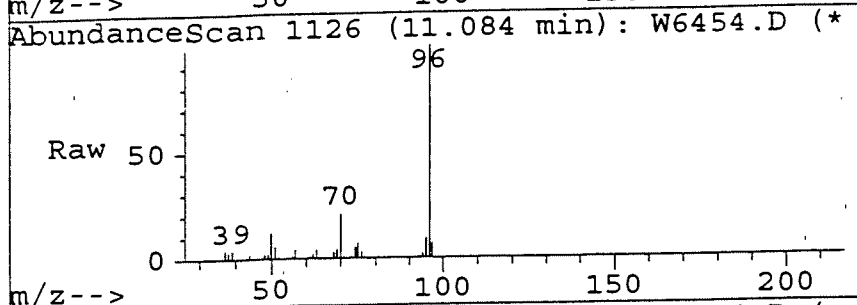
Tgt	Ion:84	Resp:	4598
Ion	Ratio	Lower	Upper
84	100		
49	132.1	41.6	221.6
86	66.8	0.0	157.2
0	0.0	0.0	0.0



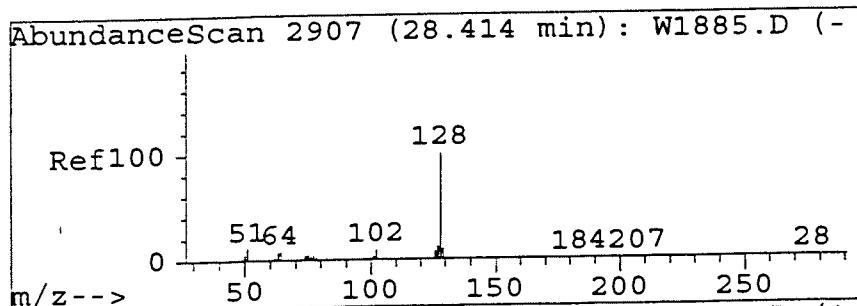
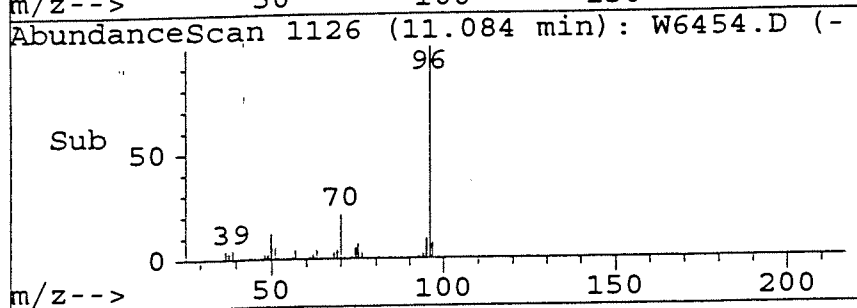
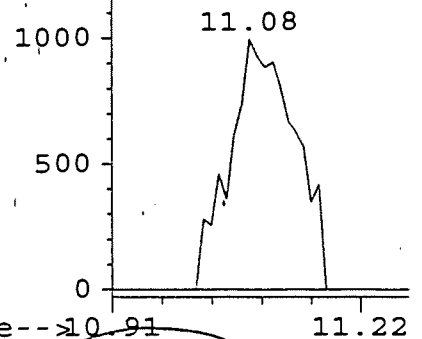


#21
1,2-Dichloroethane
Concen: 0.64 ug/l
RT: 11.08 min Scan# 1126
Delta R.T. -0.24 min
Lab File: W6454.D
Acq: 16 Jul 96 6:17 pm

Tgt Ion:	62	Resp:	5707
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0

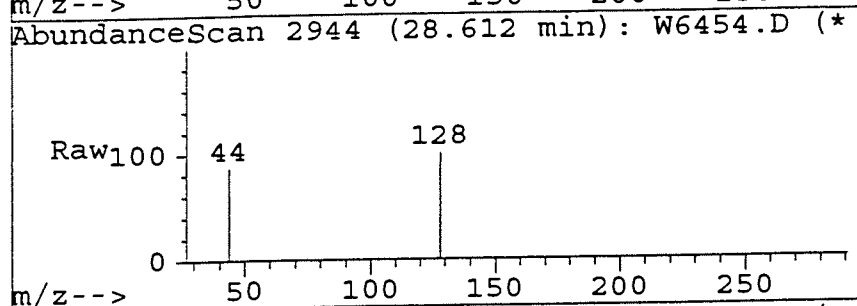


Abundance	Ion	62.00	(61.
	Ion	64.00	(63.
	Ion	98.00	(97.

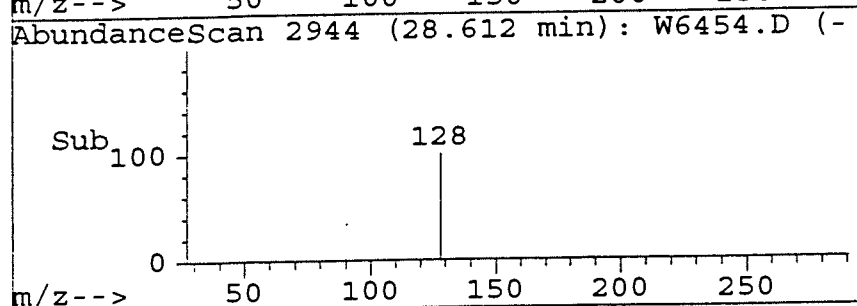
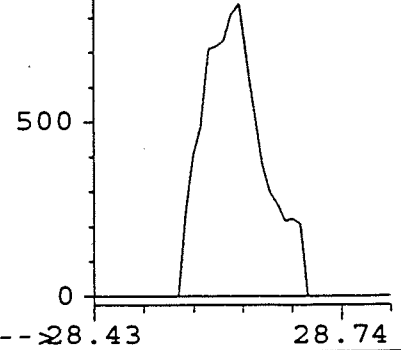


#65
Naphthalene
Concen: 0.27 ug/l
RT: 28.61 min Scan# 2944
Delta R.T. -0.21 min
Lab File: W6454.D
Acq: 16 Jul 96 6:17 pm

Tgt Ion:	128	Resp:	4480
Ion	Ratio	Lower	Upper
128	100		
102	0.0	0.0	81.5
0	0.0	0.0	0.0
0	0.0	0.0	0.0



Abundance	Ion	128.00	(127
	Ion	102.00	(101
		28.61	



Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6461.D
 Acq Time : 16 Jul 96 10:50 pm
 Sample : ~~G9607191-1~~ S1(3A)/B#96421 169607/191-1
 Misc : 25ML/GW-1/ALLIED SIGNAL
 Quant Time: Jul 16 23:23 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Mir
1) Fluorobenzene	11.10	96	404323	10.00	ug/l	-0.02
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.79	150	221747	9.53	ug/l	95.30
47) Bromofluorobenzene	21.33	95	216606	9.87	ug/l	98.74
Target Compounds						
2) Dichlorodifluoromethane	3.19	85	5710	0.39	ug/l	Qvalue # 139 88
3) Chloromethane	3.21	50	736	0.16	ug/l	# 44
9) Acetone	5.60	43	588	1.71	ug/l	# 100
10) 1,1-Dichloroethene	5.78	96	48962	6.20	ug/l	6.2 98
12) Methylene Chloride	6.52	84	1978	0.35	ug/l	95
14) 1,1-Dichloroethane	7.69	63	11101	0.96	ug/l	0.96 99
17) 1,2-Dichloroethene (cis-)	8.78	96	17934	1.92	ug/l	1.9 90
19) Chloroform	9.08	83	19495	1.01	ug/l	1.0 95
22) 1,1,1-Trichloroethane	9.83	97	87287	3.78	ug/l	3.8 96
23) Carbon Tetrachloride	10.34	117	33893	1.57	ug/l	1.6 99
25) Trichloroethene	11.93	130	1059438	63.95	ug/l	63.95 96
35) Toluene	14.85	92	91559	3.94	ug/l	3.9 99
37) Tetrachloroethene	16.52	164	51792	3.03	ug/l	3.0 96
50) 1,2,3-Trichloropropane	21.33	75	103960	23.42	ug/l	# 39
65) Naphthalene	28.61	128	2550	0.16	ug/l	# 81

*Review IX for TCE
 see W6492 on 7/18*

BATCH # 96421
 DATE 6/17/96
 ANALYST ma

REVIEWED & APPROVED
 BY SL DATE 7-19-96

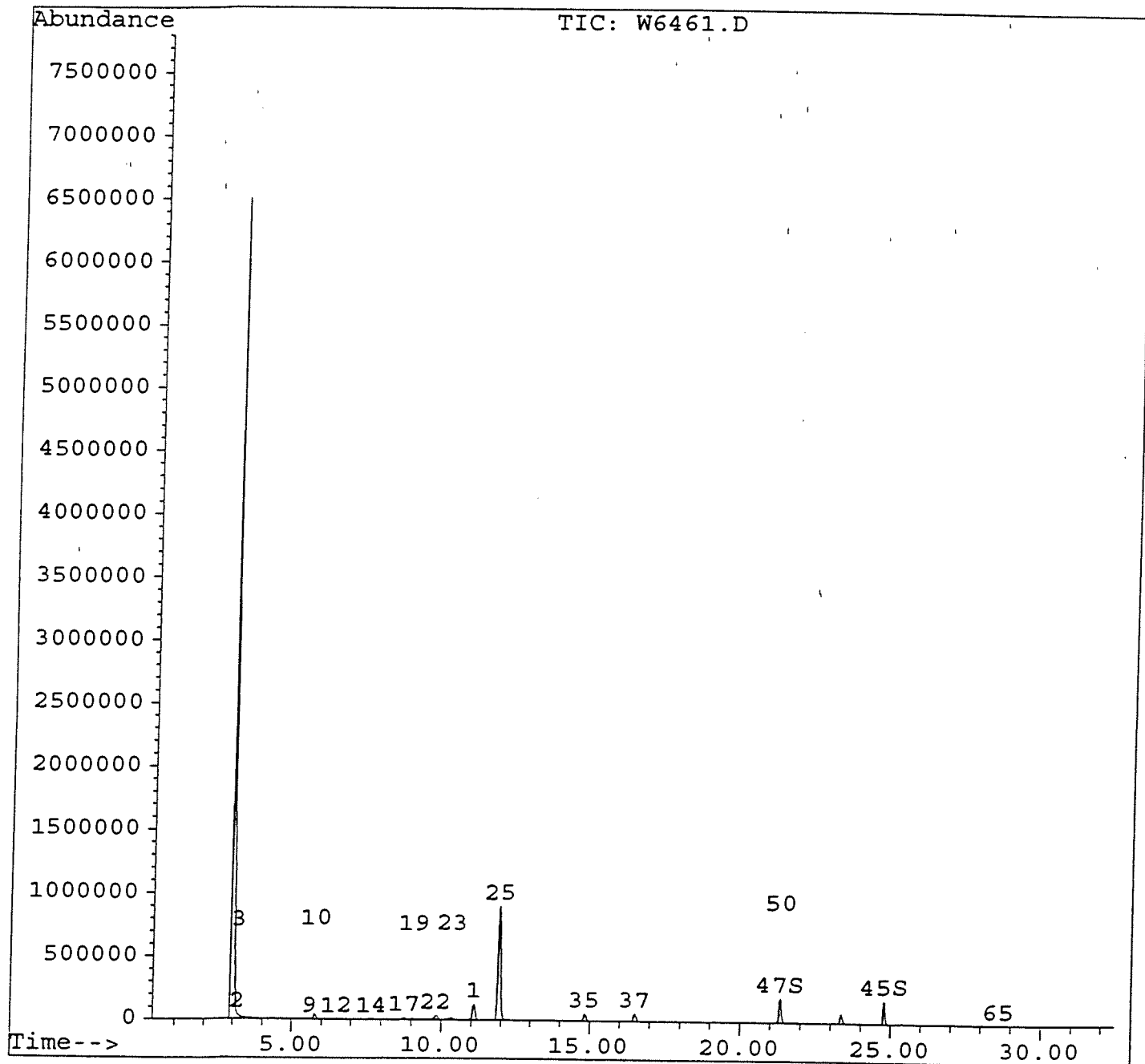
001987

Quantitation Report

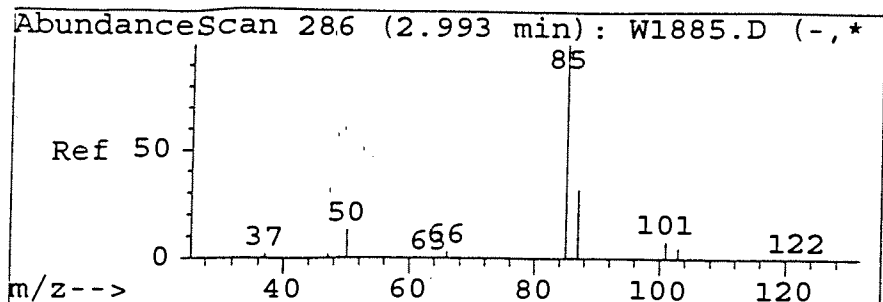
Data File : C:\HPCHEM\1\DATA\JUL16\W6461.D
Acq Time : 16 Jul 96 10:50 pm
Sample : G9607191-1S1(3A)/B#96421
Misc : 25ML/GW-1/ALLIED SIGNAL
Quant Time: Jul 16 23:23 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

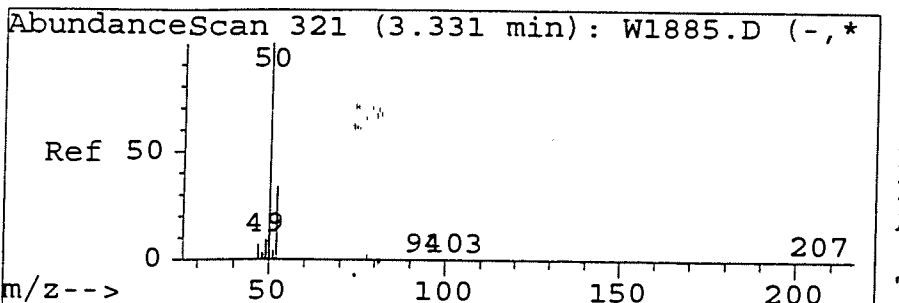
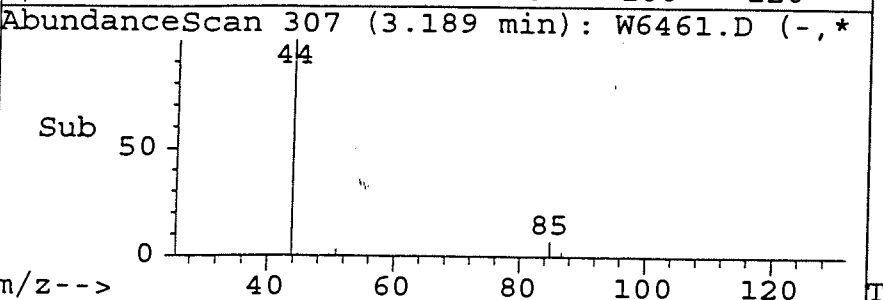
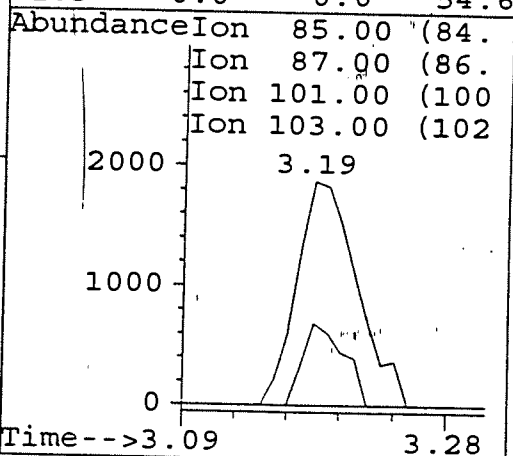
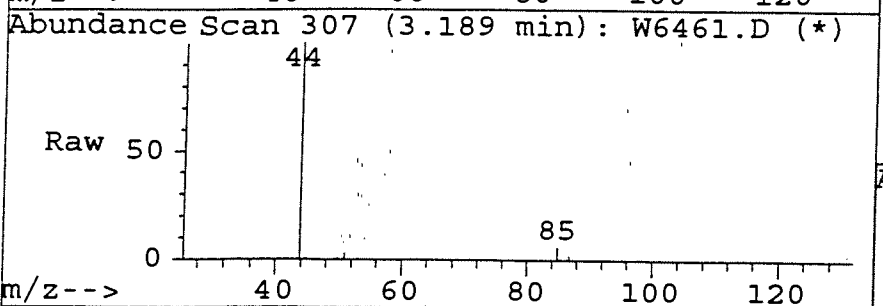


001988



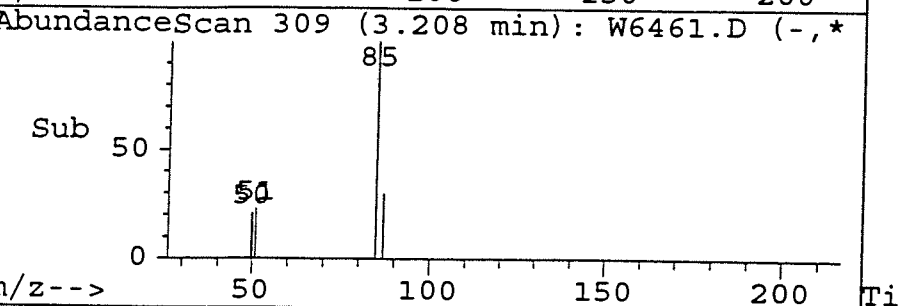
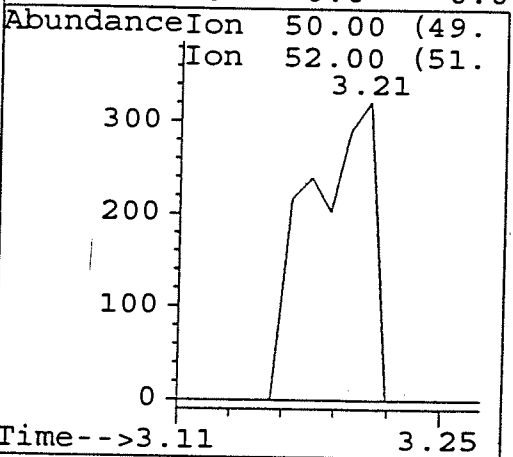
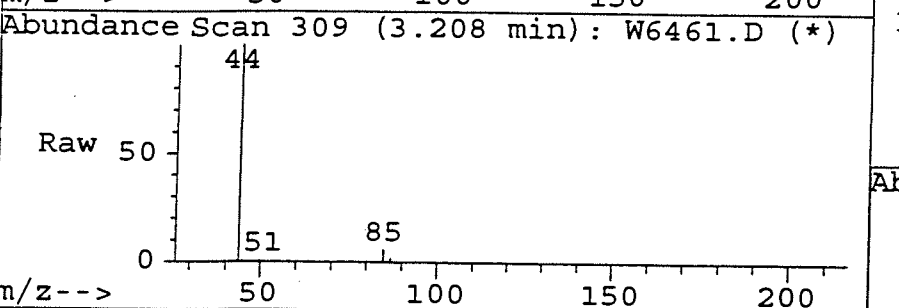
#2
 Dichlorodifluoromethane
 Concen: 0.39 ug/l
 RT: 3.19 min Scan# 307
 Delta R.T.: 0.08 min
 Lab File: W6461.D
 Acq: 16 Jul 96 10:50 pm

Tgt Ion:85	Resp:	5710
Ion Ratio	Lower	Upper
85 100		
87 25.3	0.0	84.3
101 0.0	0.0	58.1
103 0.0	0.0	54.6



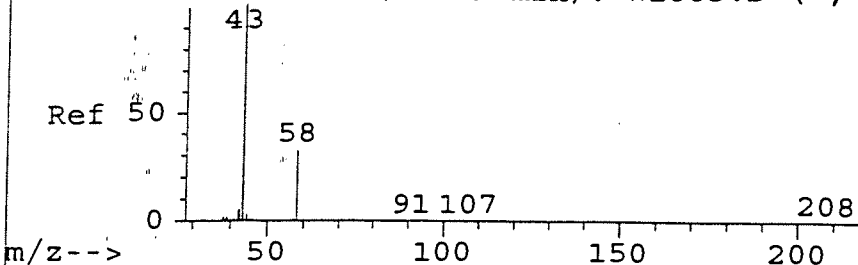
#3
 Chloromethane
 Concen: 0.16 ug/l
 RT: 3.21 min Scan# 309
 Delta R.T.: -0.28 min
 Lab File: W6461.D
 Acq: 16 Jul 96 10:50 pm

Tgt Ion:50	Resp:	736
Ion Ratio	Lower	Upper
50 100		
52 0.0	10.5	50.5#
0 0.0	0.0	0.0
0 0.0	0.0	0.0

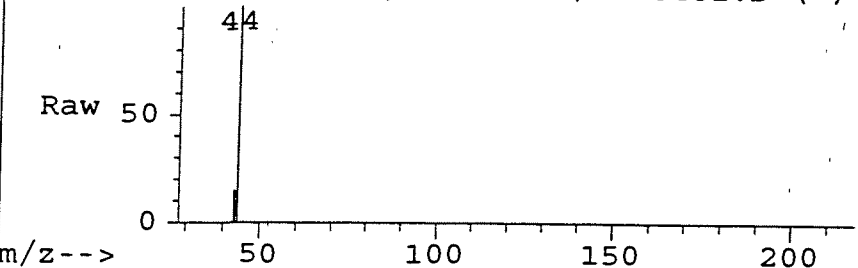


001989

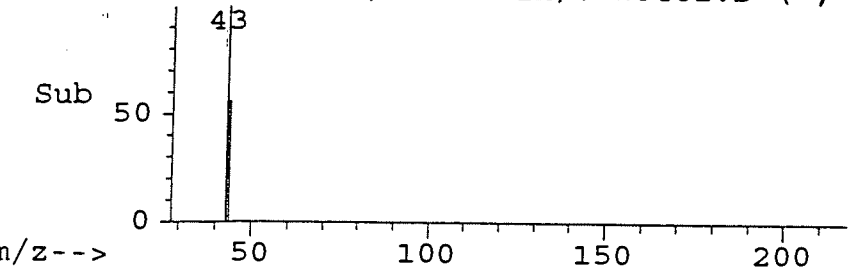
AbundanceScan 527 (5.329 min): W1885.D (-,*



AbundanceScan 557 (5.599 min): W6461.D (*)



AbundanceScan 557 (5.599 min): W6461.D (-,*



#9

Acetone

Concen: 1.71 ug/l

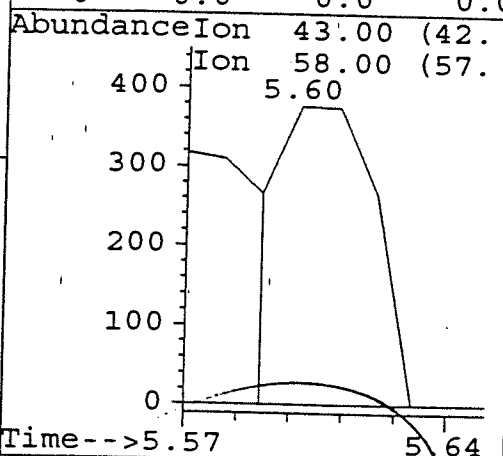
RT: 5.60 min Scan# 557

Delta R.T. -0.03 min

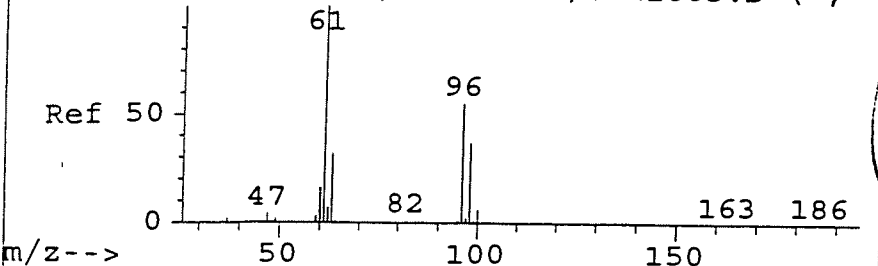
Lab File: W6461.D

Acq: 16 Jul 96 10:50 pm

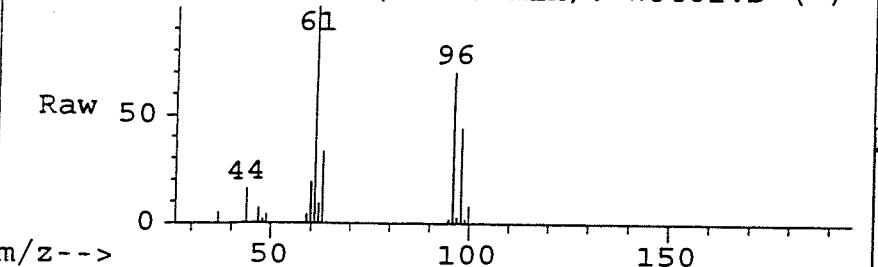
Tgt Ion	43	Resp:	588
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	50.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



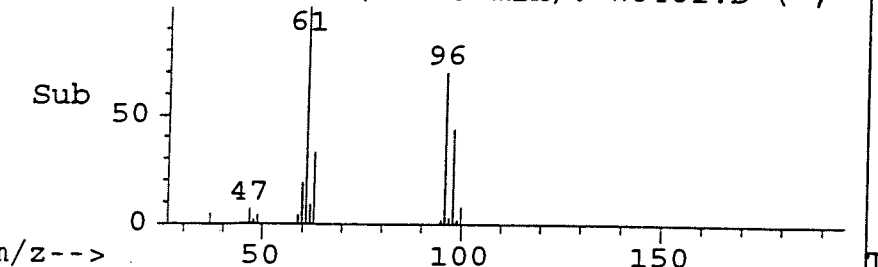
AbundanceScan 547 (5.524 min): W1885.D (-,*



AbundanceScan 576 (5.783 min): W6461.D (*)



AbundanceScan 576 (5.783 min): W6461.D (-,*



#10

1,1-Dichloroethene

Concen: 6.20 ug/l

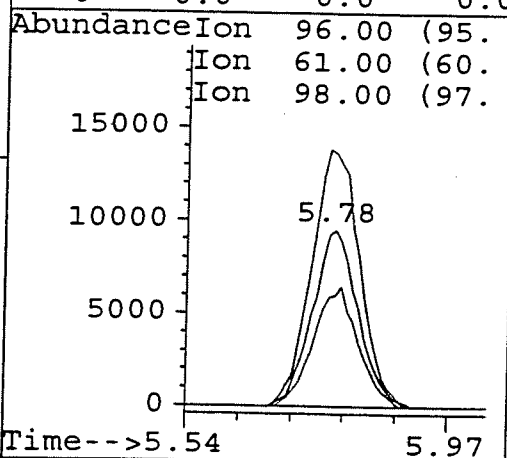
RT: 5.78 min Scan# 576

Delta R.T. -0.05 min

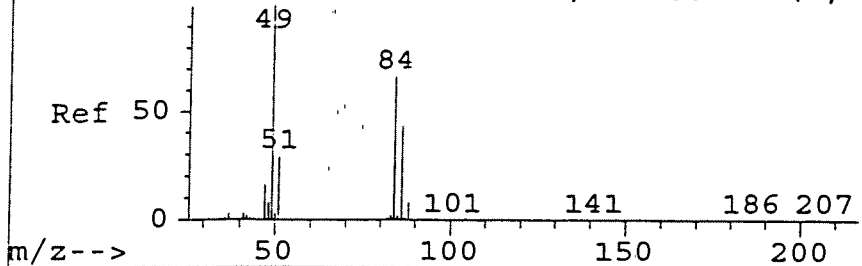
Lab File: W6461.D

Acq: 16 Jul 96 10:50 pm

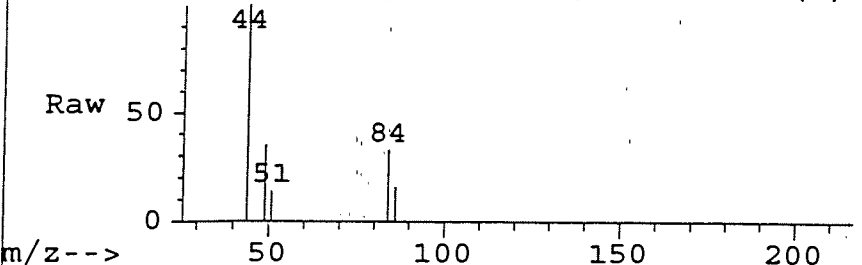
Tgt Ion	96	Resp:	48962
Ion	Ratio	Lower	Upper
96	100		
61	153.5	102.5	202.5
98	66.6	12.4	112.4
0	0.0	0.0	0.0



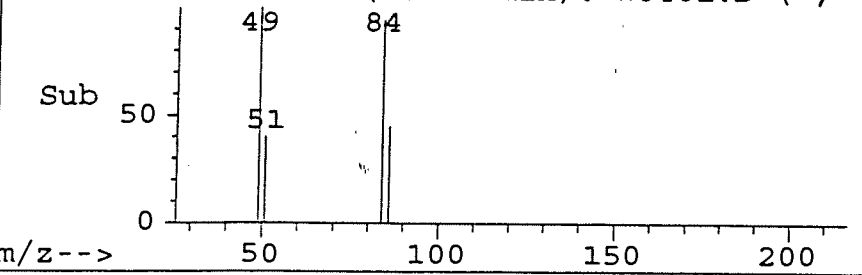
AbundanceScan 623 (6.261 min): W1885.D (-,*



AbundanceScan 652 (6.515 min): W6461.D (*)

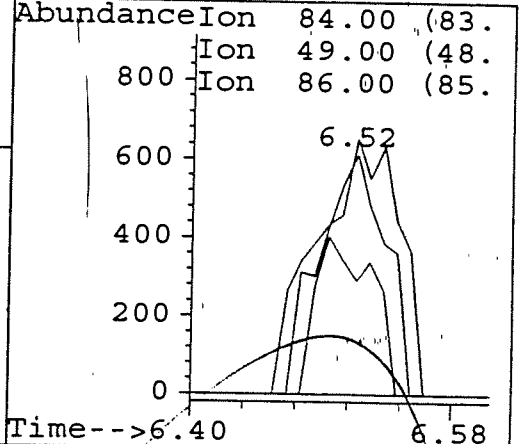


AbundanceScan 652 (6.515 min): W6461.D (-,*

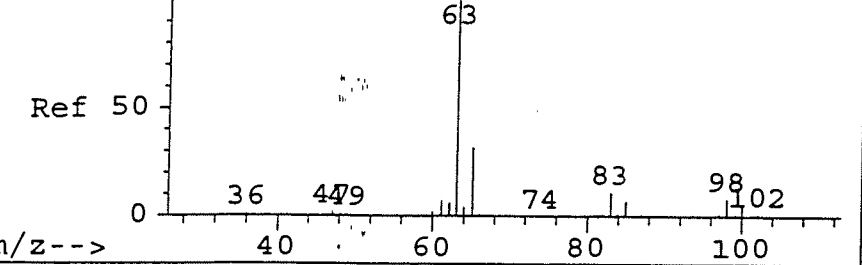


#12
Methylene Chloride
Concen: 0.35 ug/l
RT: 6.52 min Scan# 652
Delta R.T. -0.08 min
Lab File: W6461.D
Acq: 16 Jul 96 10:50 pm

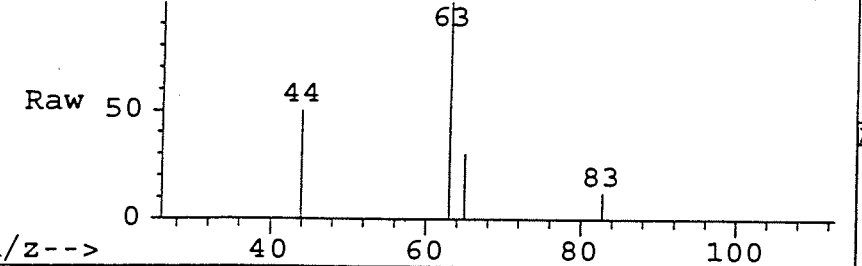
Tgt Ion:	84	Resp:	1978
Ion	Ratio	Lower	Upper
84	100		
49	132.6	41.6	221.6
86	56.2	0.0	157.2
0	0.0	0.0	0.0



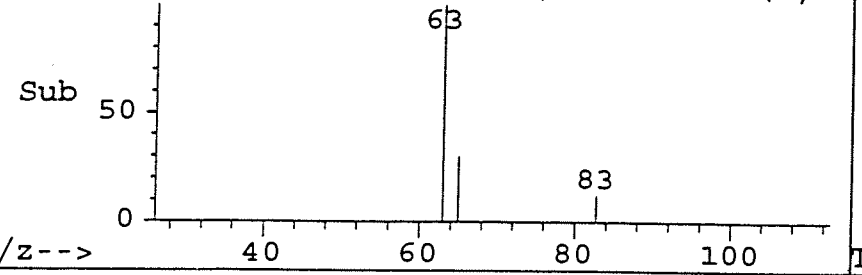
AbundanceScan 746 (7.453 min): W1885.D (-,*



AbundanceScan 774 (7.691 min): W6461.D (*)

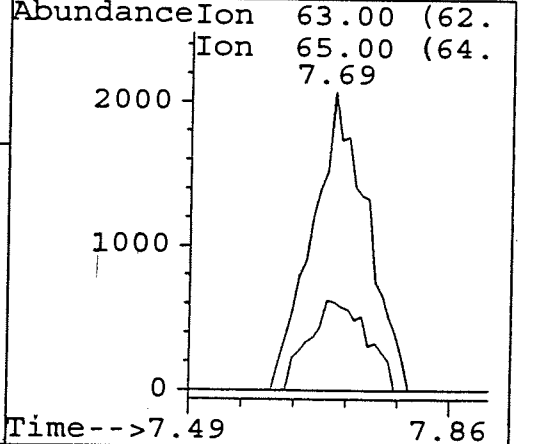


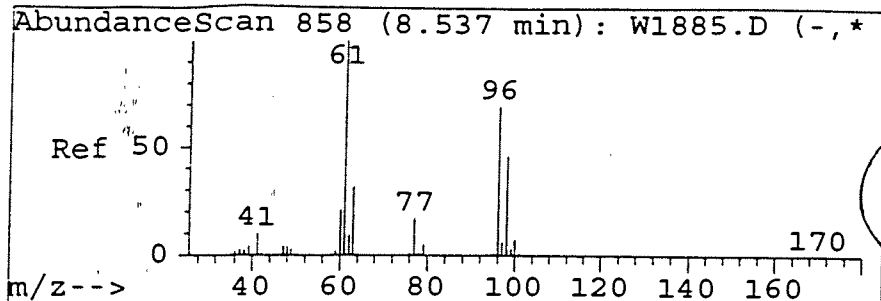
AbundanceScan 774 (7.691 min): W6461.D (-,*



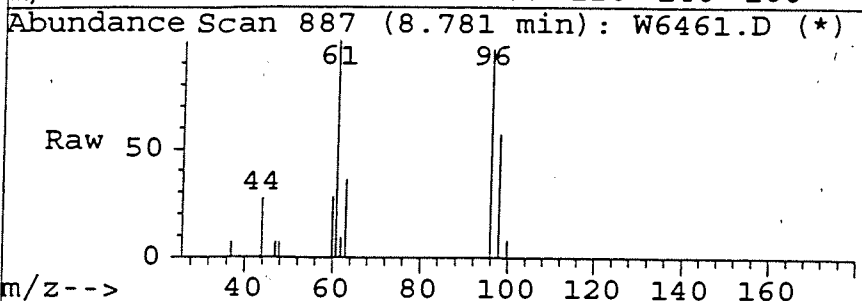
#14
1,1-Dichloroethane
Concen: 0.96 ug/l
RT: 7.69 min Scan# 774
Delta R.T. -0.16 min
Lab File: W6461.D
Acq: 16 Jul 96 10:50 pm

Tgt Ion:	63	Resp:	11101
Ion	Ratio	Lower	Upper
63	100		
65	32.0	0.0	81.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0

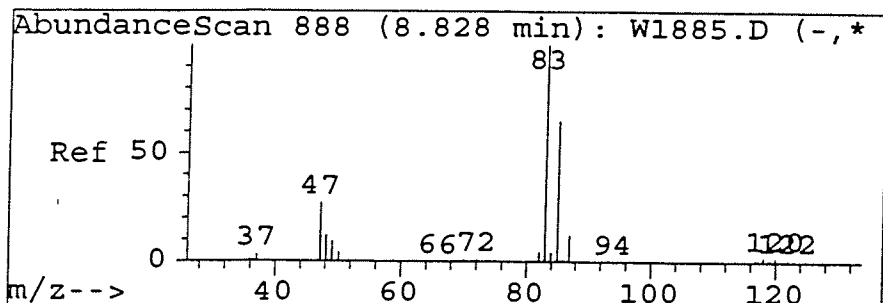
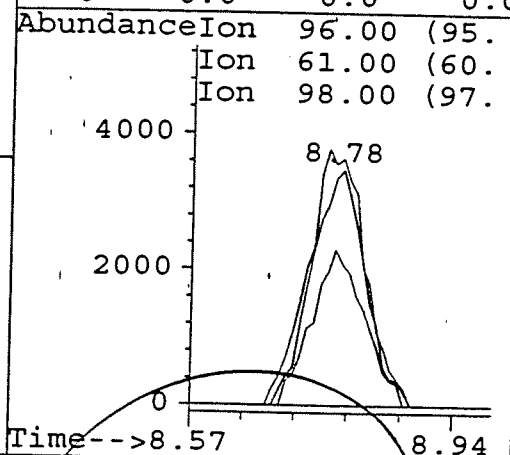
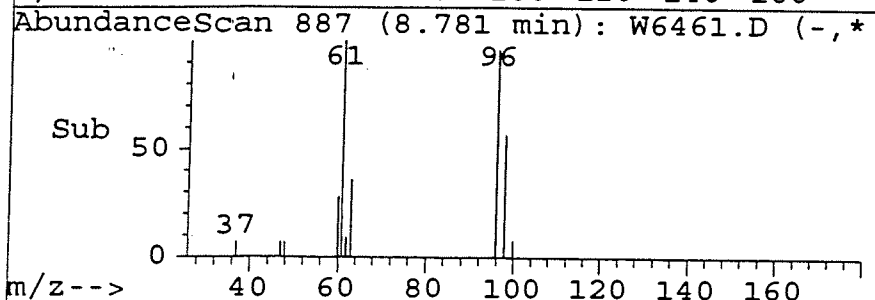




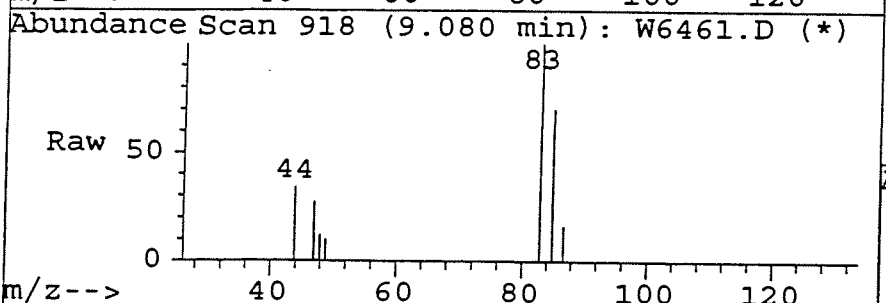
#17
1,2-Dichloroethene (cis-)
Concen: 1.92 ug/l
RT: 8.78 min Scan# 887
Delta R.T. -0.17 min
Lab File: W6461.D
Acq: 16 Jul 96 10:50 pm



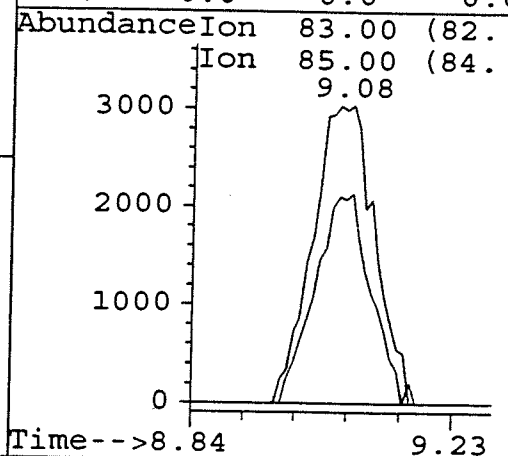
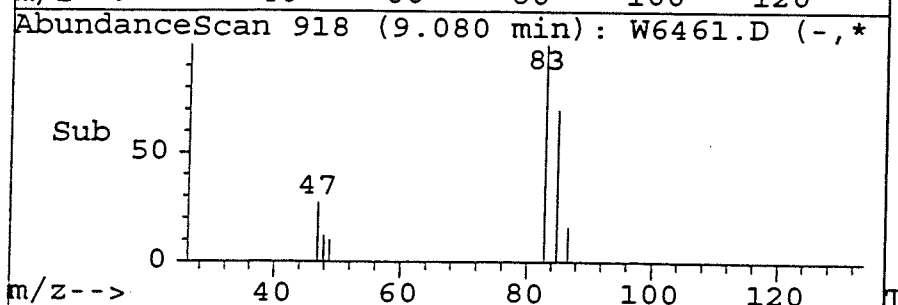
Tgt Ion	Ratio	Lower	Upper
96	100		
61	116.6	84.0	184.0
98	65.2	14.7	114.7
0	0.0	0.0	0.0



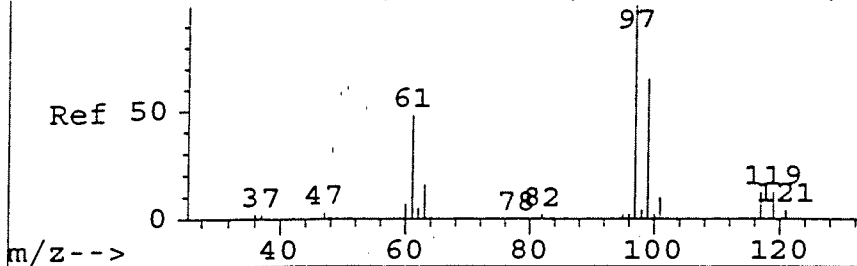
#19
Chloroform
Concen: 1.01 ug/l
RT: 9.08 min Scan# 918
Delta R.T. -0.16 min
Lab File: W6461.D
Acq: 16 Jul 96 10:50 pm



Tgt Ion	Ratio	Lower	Upper
83	100		
85	63.6	17.3	117.3
0	0.0	0.0	0.0
0	0.0	0.0	0.0



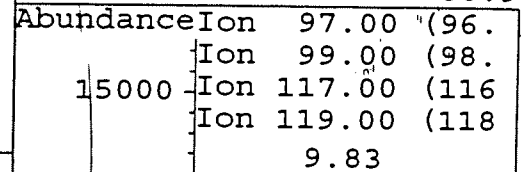
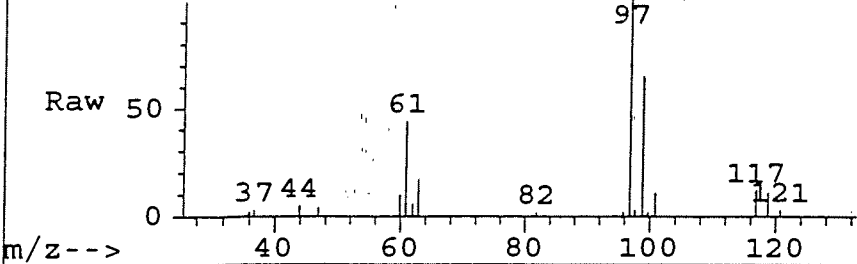
AbundanceScan 967 (9.594 min): W1885.D (-, *



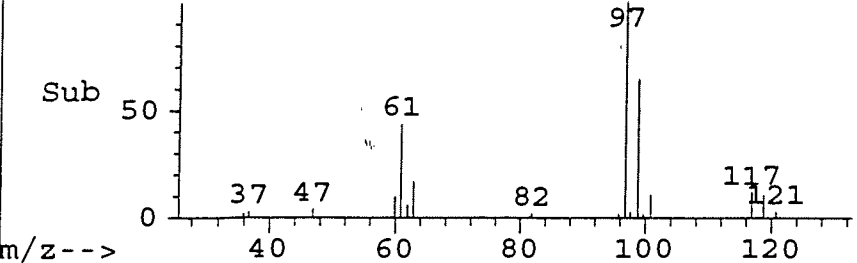
#22
1,1,1-Trichloroethane
Concen: 3.78 ug/l
RT: 9.83 min Scan# 996
Delta R.T. -0.20 min
Lab File: W6461.D
Acq: 16 Jul 96 10:50 pm

Tgt Ion	Ratio	Lower	Upper
97	100		
99	66.1	18.2	118.2
117	11.8	0.0	57.5
119	6.9	0.0	60.9

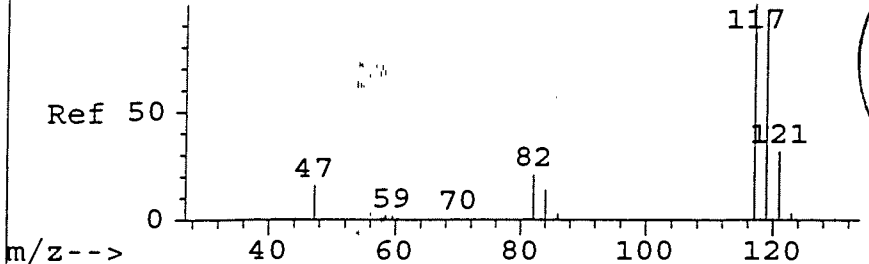
AbundanceScan 996 (9.832 min): W6461.D (*)



AbundanceScan 996 (9.832 min): W6461.D (-, *



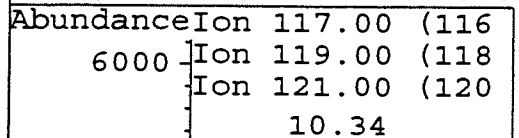
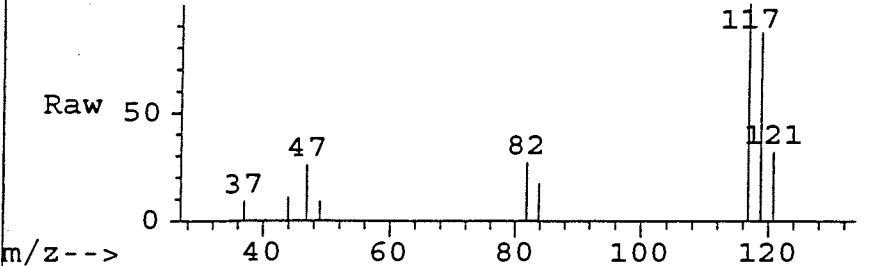
AbundanceScan 1020 (10.108 min): W1885.D (-, *



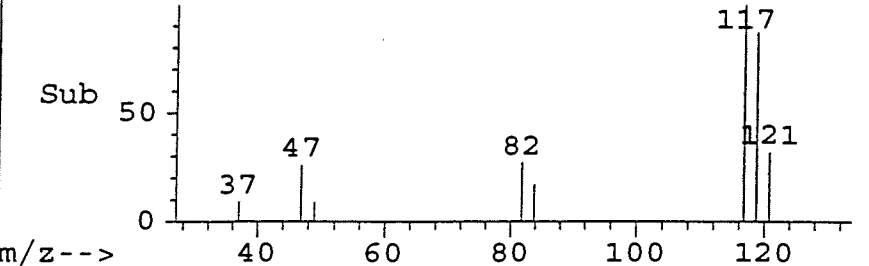
#23
Carbon Tetrachloride
Concen: 1.57 ug/l
RT: 10.34 min Scan# 1049
Delta R.T. -0.21 min
Lab File: W6461.D
Acq: 16 Jul 96 10:50 pm

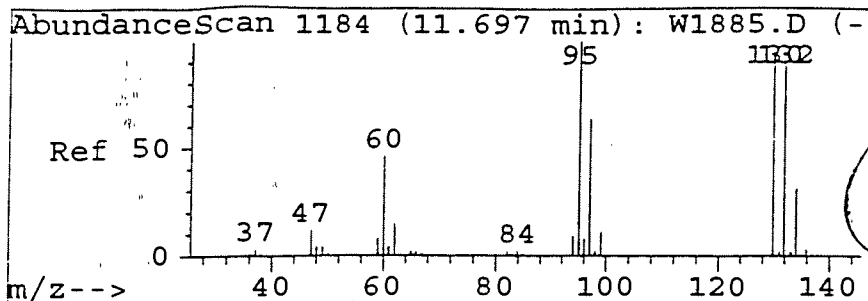
Tgt Ion	Ratio	Lower	Upper
117	100		
119	96.6	47.3	147.3
121	32.2	0.0	82.4
0	0.0	0.0	0.0

AbundanceScan 1049 (10.343 min): W6461.D (*)

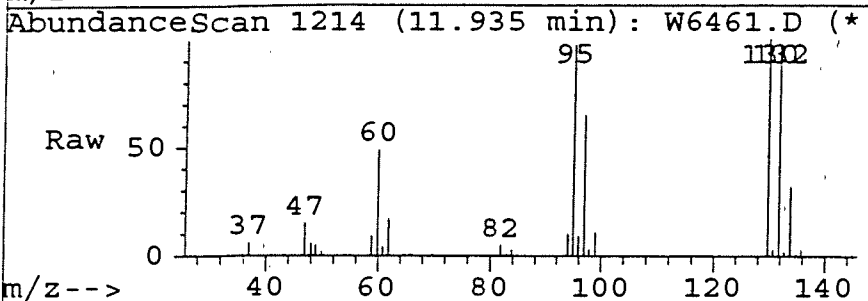


AbundanceScan 1049 (10.343 min): W6461.D (-, *

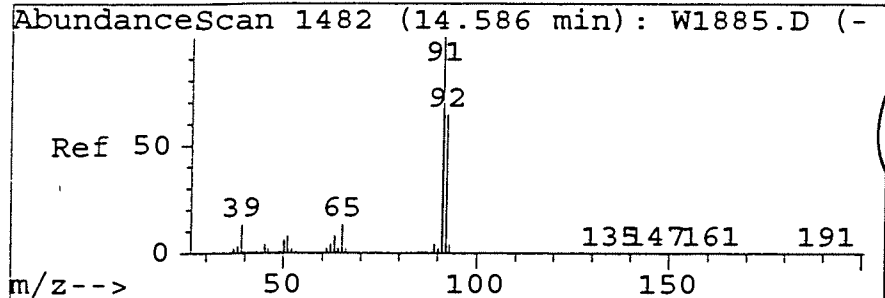
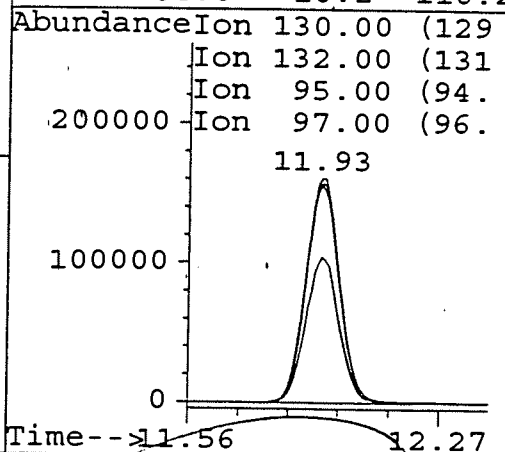
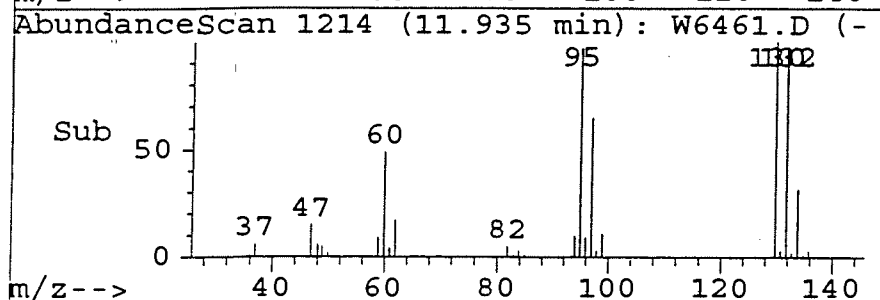




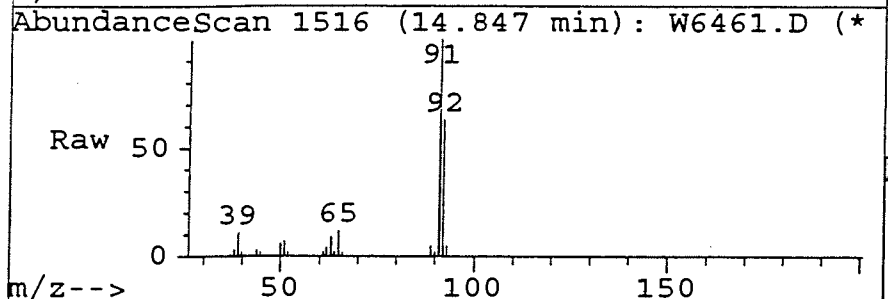
#25
Trichloroethene
Concen: 63.95 ug/l
RT: 11.93 min Scan# 1214
Delta R.T. -0.22 min
Lab File: W6461.D
Acq: 16 Jul 96 10:50 pm



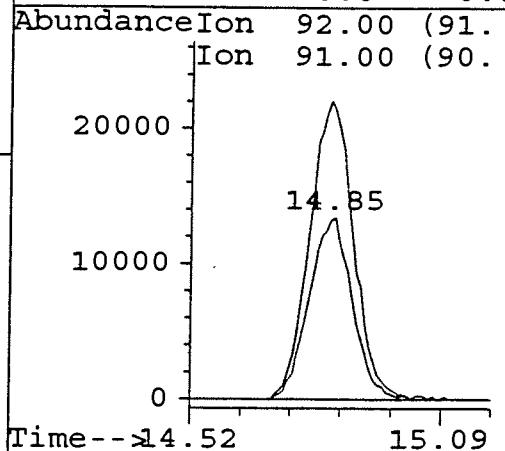
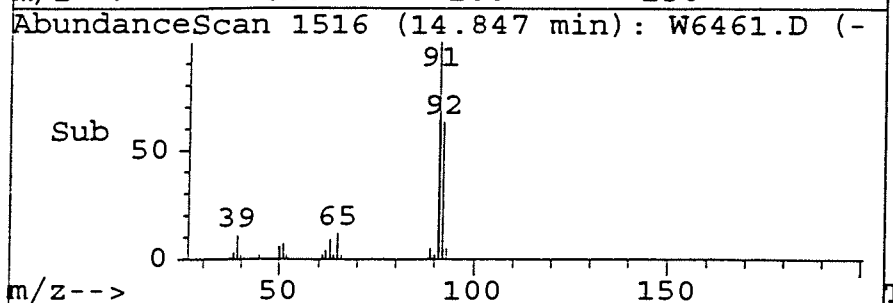
Tgt Ion:130 Resp: 1059438
Ion Ratio Lower Upper
130 100
132 98.0 46.4 146.4
95 97.0 54.1 154.1
97 64.0 16.2 116.2

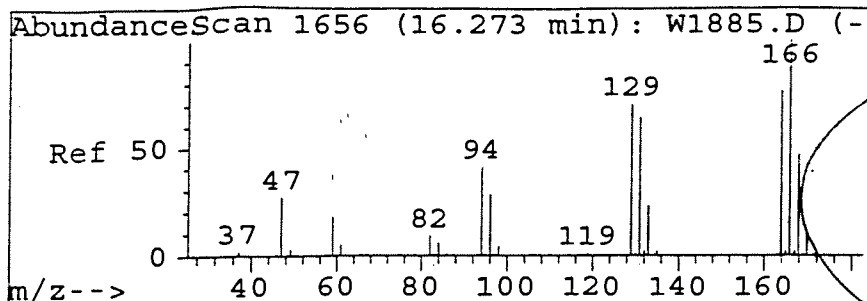


#25
Toluene
Concen: 3.94 ug/l
RT: 14.85 min Scan# 1516
Delta R.T. -0.28 min
Lab File: W6461.D
Acq: 16 Jul 96 10:50 pm



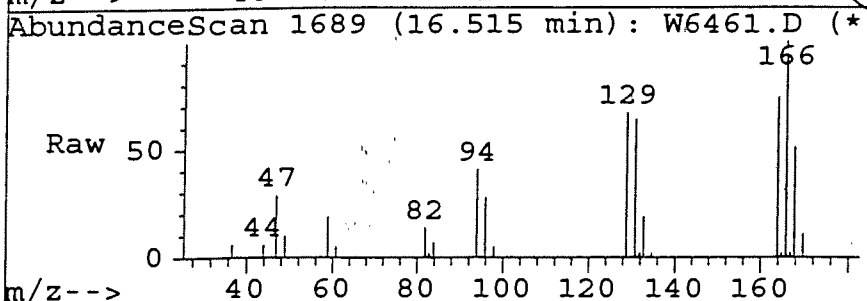
Tgt Ion:92 Resp: 91559
Ion Ratio Lower Upper
92 100
91 166.3 117.6 217.6
0 0.0 0.0 0.0
0 0.0 0.0 0.0



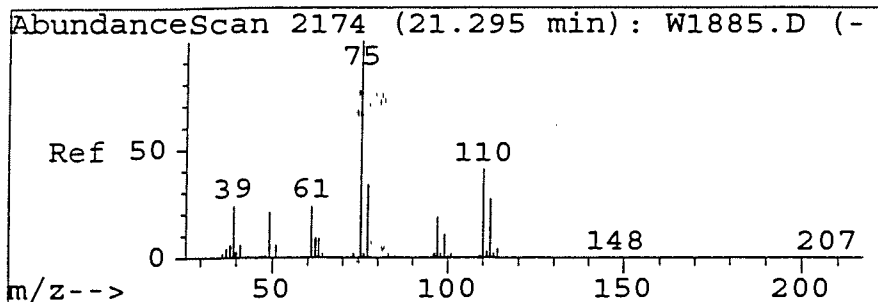
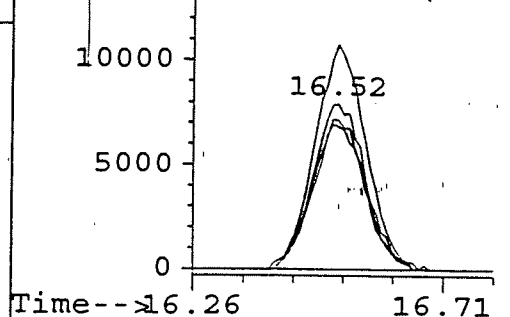
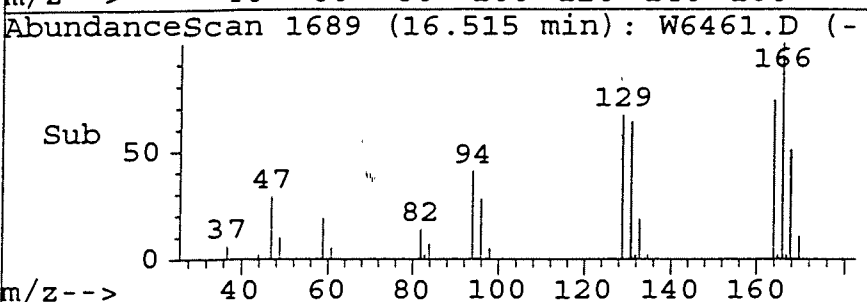


#37
Tetrachloroethene
Concen: 3.03 ug/l
RT: 16.52 min Scan# 1689
Delta R.T. -0.26 min
Lab File: W6461.D
Acq: 16 Jul 96 10:50 pm

Tgt Ion	Ratio	Lower	Upper
164	100		
166	132.3	81.6	181.6
129	89.8	33.6	133.6
131	86.7	29.4	129.4

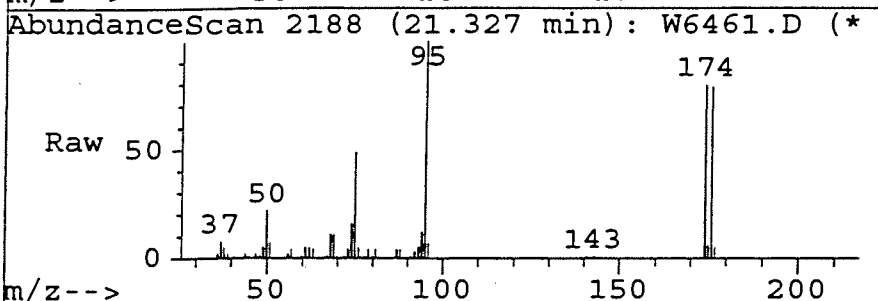


Abundance	Ion	m/z
15000	Ion 164.00	(163
	Ion 166.00	(165
	Ion 129.00	(128
	Ion 131.00	(130

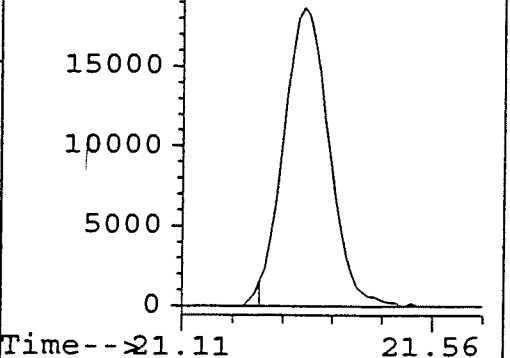
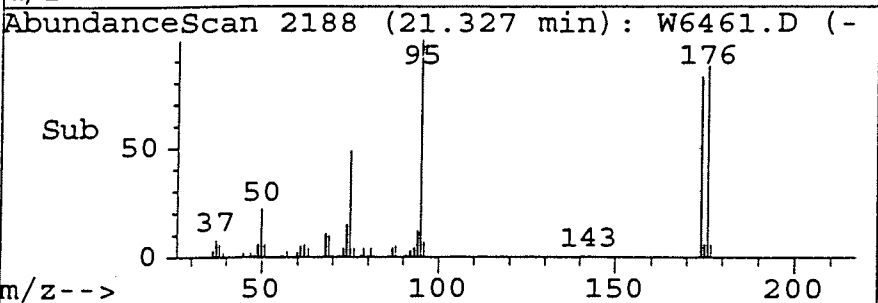


#50
1,2,3-Trichloropropane
Concen: 23.42 ug/l
RT: 21.33 min Scan# 2188
Delta R.T. -0.20 min
Lab File: W6461.D
Acq: 16 Jul 96 10:50 pm

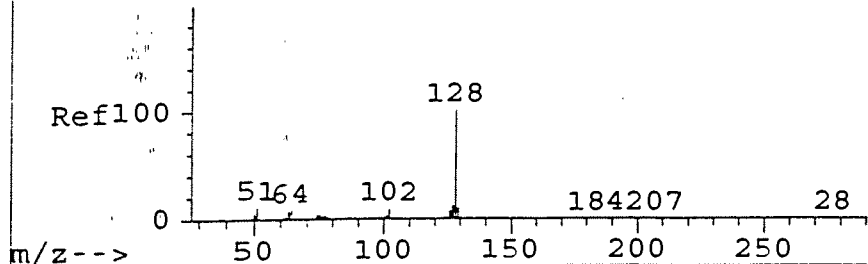
Tgt Ion	Ratio	Lower	Upper
75	100		
110	0.0	0.0	86.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



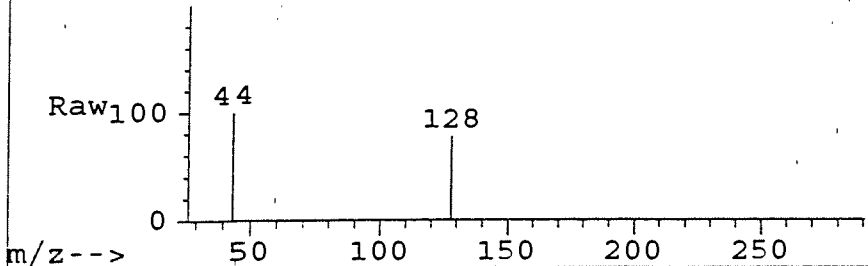
Abundance	Ion	m/z
20000	Ion 75.00	(74.
	Ion 110.00	(109



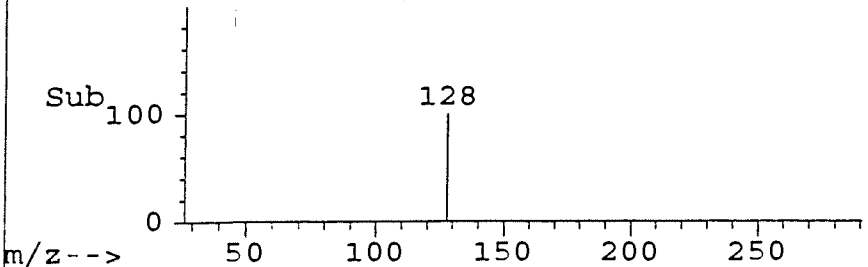
AbundanceScan 2907 (28.414 min): W1885.D (-



AbundanceScan 2943 (28.607 min): W6461.D (*)



AbundanceScan 2943 (28.607 min): W6461.D (-



#65

Naphthalene

Concen: 0.16 ug/l

RT: 28.61 min Scan# 2943

Delta R.T. -0.21 min

Lab File: W6461.D

Acq: 16 Jul 96 10:50 pm

Tgt Ion:128 Resp: 2550

Ion Ratio Lower Upper

128 100

102 0.0 0.0 81.5

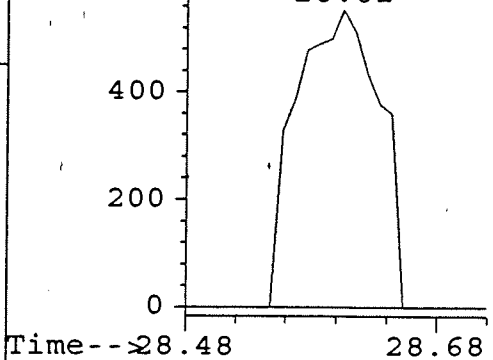
0 0.0 0.0 0.0

0 0.0 0.0 0.0

AbundanceIon 128.00 (127

Ion 102.00 (101

28.61



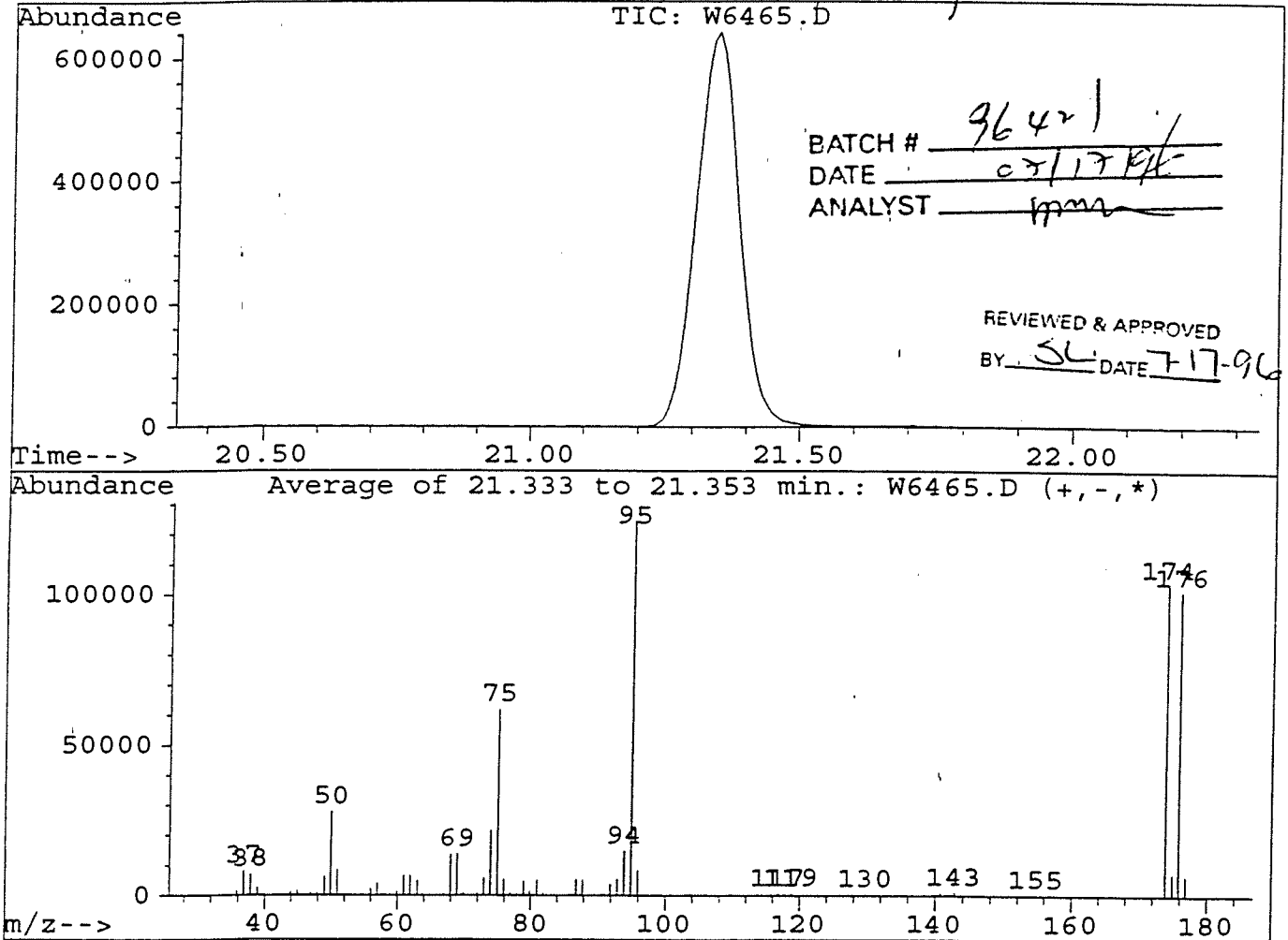
001996

BFB

Data File : C:\HPCHEM\1\DATA\JUL16\W6465.D
 Acq Time : 17 Jul 96 1:17 am
 Sample : 10PPB-QCCS-3/B#96421
 Misc : 25ML/VO9607015

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
 Title :



Peak Apex is scan: 2190

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.3	27803	PASS
75	95	30	60	49.6	61880	PASS
95	95	100	100	100.0	124739	PASS
96	95	5	9	6.7	8320	PASS
173	174	0	2	0.2	196	PASS
174	95	50	100	83.1	103664	PASS
175	174	5	9	6.9	7141	PASS
176	174	95	101	97.6	101157	PASS
177	176	5	9	6.7	6744	PASS

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6466.D
 Acq Time : 17 Jul 96 1:57 am
 Sample : 10PPB-QCCS-4/B#96421
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 2:30 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

2 out of 13 %

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.10	96	362033	10.00	ug/l	-0.02
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.79	150	225359	10.82	ug/l	108.17%
47) Bromofluorobenzene	21.34	95	201419	10.25	ug/l	102.54%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.20	85	152358	11.69	ug/l	97
3) Chloromethane	3.57	50	43416	10.70	ug/l	92
4) Vinyl Chloride	3.73	62	52383	10.95	ug/l	96
5) Bromomethane	4.38	94	81147	11.05	ug/l	95
6) Chloroethane	4.50	64	36057	10.78	ug/l	93
7) Freon 123	4.84	83	199835	11.60	ug/l	100
8) Trichlorofluoromethane	4.88	101	204717	11.66	ug/l	99
9) Acetone	5.60	43	13037	42.28	ug/l	100
10) 1,1-Dichloroethene	5.79	96	78996	11.18	ug/l	97
11) Freon 113	5.51	101	180103	11.60	ug/l	97
12) Methylene Chloride	6.52	84	59922	11.68	ug/l	92
13) 1,2-Dichloroethene (trans-	7.01	96	76690	10.95	ug/l	96
14) 1,1-Dichloroethane	7.70	63	111300	10.80	ug/l	98
15) Methyl Ethyl Ketone	8.47	43	12519	0.53	ug/l	100
16) 2,2-Dichloropropane	8.72	77	95104	6.16	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.77	96	72265	8.66	ug/l	98
18) Bromochloromethane	9.38	130	73889	10.99	ug/l	87
19) Chloroform	9.07	83	135804	7.86	ug/l	98
20) 1,1-Dichloropropene	10.13	75	158148	10.26	ug/l	97
21) 1,2-Dichloroethane	10.63	62	90514	11.53	ug/l	97
22) 1,1,1-Trichloroethane	9.85	97	217197	10.49	ug/l	96
23) Carbon Tetrachloride	10.35	117	195789	10.12	ug/l	99
24) Benzene	10.69	78	285295	10.27	ug/l	100
25) Trichloroethene	11.94	130	153284	10.33	ug/l	96
26) 1,2-Dichloropropane	12.31	63	97276	10.18	ug/l	53
27) Dibromomethane	12.95	174	80455	11.57	ug/l	84
28) Bromodichloromethane	12.83	83	186191	10.61	ug/l	100
29) Methyl Isobutyl Ketone	13.59	43	94558	49.13	ug/l	91
30) cis-1,3-Dichloropropene	14.04	75	126318	10.09	ug/l	97
31) trans-1,3-Dichloropropene	15.28	75	92600	10.44	ug/l	98
32) 1,3-Dichloropropane	16.35	76	100451	11.48	ug/l	98
33) Dibromochloromethane	17.01	129	137501	10.98	ug/l	98
34) Bromoform	20.72	173	74900	11.99	ug/l	100
35) Toluene	14.83	92	207945	10.00	ug/l	98
36) 1,1,2-Trichloroethane	15.69	97	71530	11.32	ug/l	97
37) Tetrachloroethene	16.51	164	153115	10.01	ug/l	96
38) 1,2-Dibromoethane	17.50	107	103881	11.75	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6466.D
Acq Time : 17 Jul 96 1:57 am
Sample : 10PPB-QCCS-4/B#96421
Misc : 25ML/VO9607015
Quant Time: Jul 17 2:30 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Chlorobenzene	18.53	112	280907	10.19	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.63	131	132175	10.26	ug/l	95
41) Ethylbenzene	18.67	106	141435	10.28	ug/l	93
42) m,p-Xylenes	18.85	106	340836	20.46	ug/l	91
43) o-Xylene	19.87	106	157825	10.13	ug/l	90
44) Styrene	19.95	104	250798	10.57	ug/l	99
46) Isopropylbenzene	20.72	105	480951	10.18	ug/l	97
48) Bromobenzene	21.79	77	249652	10.52	ug/l	95
49) 1,1,2,2-Tetrachloroethane	21.14	83	86100	11.87	ug/l	97
50) 1,2,3-Trichloropropane	21.49	75	52827	13.29	ug/l	91
51) n-Propylbenzene	21.73	91	581442	10.25	ug/l	95
52) 2-Chlorotoluene	22.13	91	394443	10.32	ug/l	91
53) 4-Chlorotoluene	22.24	91	357775	10.52	ug/l	85
54) 1,3,5-Trimethylbenzene	22.10	105	348139	10.07	ug/l	96
55) Tert-Butylbenzene	22.91	119	394841	10.26	ug/l	99
56) 1,2,4-Trimethylbenzene	23.01	105	356731	10.23	ug/l	97
57) Sec-Butylbenzene	23.40	105	592912	10.46	ug/l	98
58) 1,3-Dichlorobenzene	23.87	146	250681	10.56	ug/l	99
59) 1,4-Dichlorobenzene	24.09	146	257730	10.79	ug/l	99
60) p-Isopropyltoluene	23.70	119	448667	10.35	ug/l	98
61) 1,2-Dichlorobenzene	24.85	146	208682	11.09	ug/l	96
62) n-Butylbenzene	24.55	91	458996	10.43	ug/l	98
63) 1,2-Dibromo-3-Chloropropan	26.35	75	15386	12.63	ug/l	73
64) 1,2,4-Trichlorobenzene	28.05	180	191083	11.10	ug/l	95
65) Naphthalene	28.59	128	175989	12.28	ug/l	97
66) Hexachlorobutadiene	28.35	225	161263	10.27	ug/l	97
67) 1,2,3-Trichlorobenzene	29.16	180	152746	11.55	ug/l	98

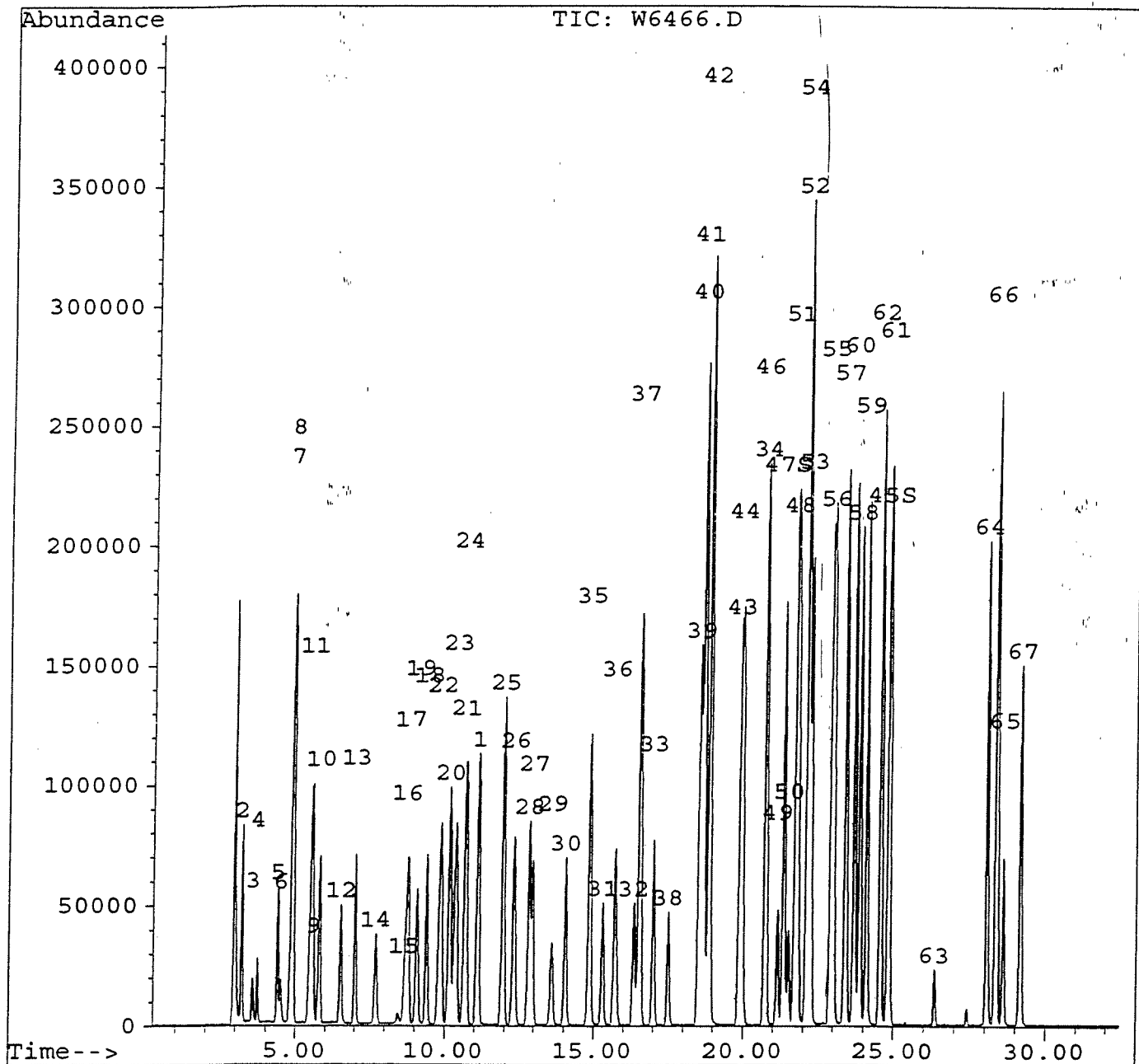
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6466.D
 Acq Time : 17 Jul 96 1:57 am
 Sample : 10PPB-QCCS-4/B#96421
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 2:30 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



Library Search Compound Report

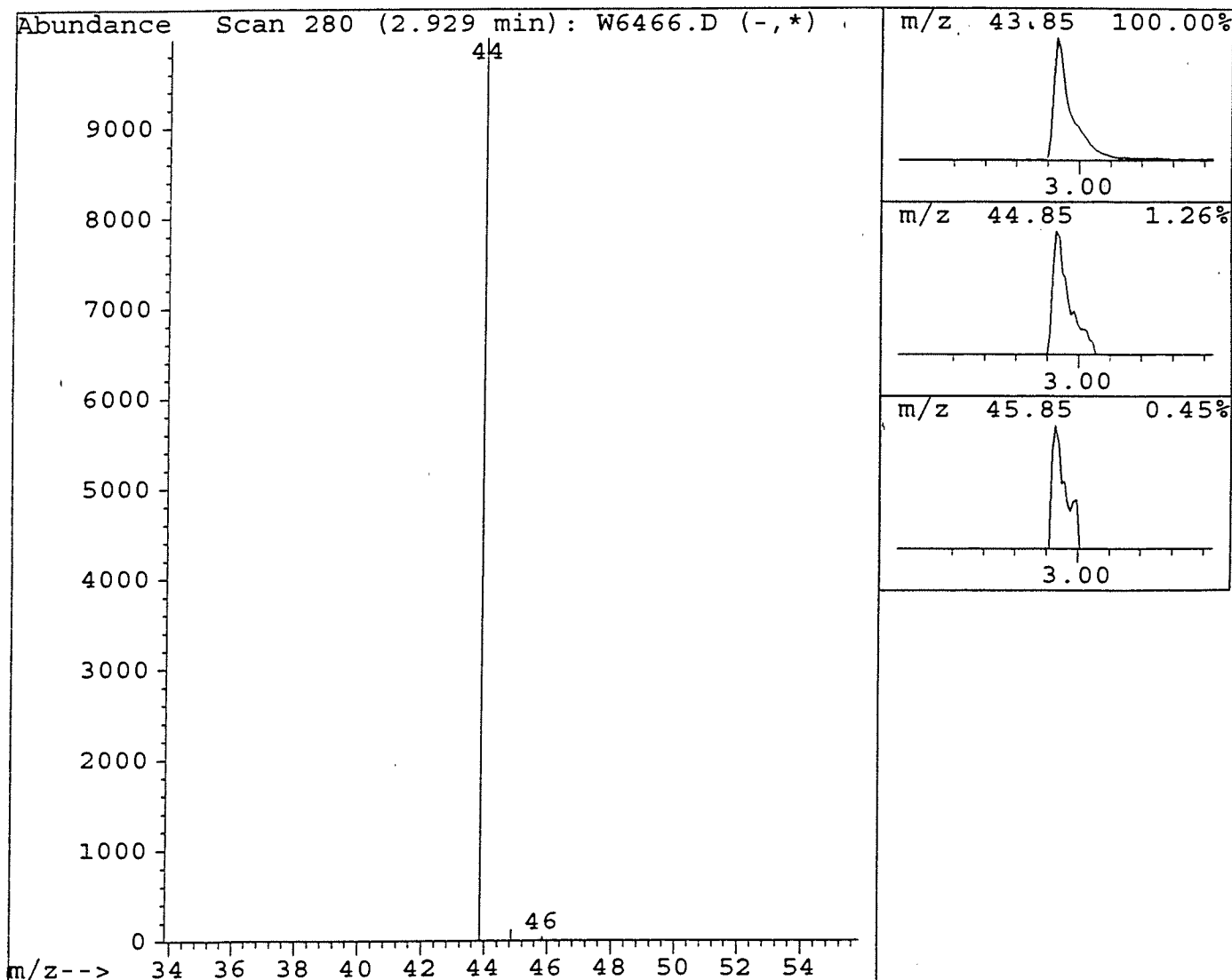
Data File : C:\HPCHEM\1\DATA\JUL16\W6466.D
Acq Time : 17 Jul 96 1:57 am
Sample : 10PPB-QCCS-4/B#96421
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.93	9.13 ug/l	664480	Fluorobenzene	11.10

Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L		0	000000-00-0	0



Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6467.D
 Acq Time : 17 Jul 96 2:36 am
 Sample : WASH/B#96421 10 PPS QCCS-4
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 3:09 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

BATCH # 96421
 DATE 07/17/96

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.10	96	386237	10.00	ug/l	-0.02
REVIEWED & APPROVED						
System Monitoring Compounds		BY	DATE			% Recovery
45) 1,2-Dichlorobenzene-d4	24.80	150	230110	10.35	ug/l	103.53%
47) Bromofluorobenzene	21.33	95	210584	10.05	ug/l	100.49%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.21	85	165406	11.90	ug/l	98
3) Chloromethane	3.57	50	47554	10.99	ug/l	93
4) Vinyl Chloride	3.73	62	57080	11.19	ug/l	95
5) Bromomethane	4.39	94	89507	11.43	ug/l	93
6) Chloroethane	4.50	64	39193	10.98	ug/l	91
7) Freon 123	4.84	83	219773	11.96	ug/l	98
8) Trichlorofluoromethane	4.88	101	228278	12.19	ug/l	99
9) Acetone	5.58	43	14686	44.64	ug/l	100
10) 1,1-Dichloroethene	5.79	96	91299	12.11	ug/l	98
11) Freon 113	5.50	101	198001	11.95	ug/l	96
12) Methylene Chloride	6.52	84	65770	12.01	ug/l	93
13) 1,2-Dichloroethene (trans-	7.01	96	87853	11.76	ug/l	95
14) 1,1-Dichloroethane	7.71	63	123509	11.23	ug/l	97
15) Methyl Ethyl Ketone	8.46	43	17485	35.15	ug/l	100
16) 2,2-Dichloropropane	8.72	77	107229	6.51	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.78	96	83502	9.37	ug/l	97
18) Bromochloromethane	9.39	130	81853	11.42	ug/l	86
19) Chloroform	9.07	83	211213	11.46	ug/l	100
20) 1,1-Dichloropropene	10.15	75	188354	11.46	ug/l	99
21) 1,2-Dichloroethane	10.64	62	96708	11.55	ug/l	96
22) 1,1,1-Trichloroethane	9.85	97	256450	11.61	ug/l	96
23) Carbon Tetrachloride	10.37	117	230628	11.17	ug/l	98
24) Benzene	10.69	78	332815	11.23	ug/l	100
25) Trichloroethene	11.95	130	180002	11.37	ug/l	96
26) 1,2-Dichloropropane	12.33	63	112514	11.04	ug/l	53
27) Dibromomethane	12.95	174	86696	11.69	ug/l	83
28) Bromodichloromethane	12.83	83	212153	11.33	ug/l	98
29) Methyl Isobutyl Ketone	13.59	43	101188	49.29	ug/l	93
30) cis-1,3-Dichloropropene	14.05	75	143058	10.71	ug/l	99
31) trans-1,3-Dichloropropene	15.30	75	102778	10.86	ug/l	98
32) 1,3-Dichloropropane	16.34	76	108829	11.65	ug/l	98
33) Dibromochloromethane	17.01	129	151573	11.35	ug/l	99
34) Bromoform	20.72	173	81146	12.17	ug/l	100
35) Toluene	14.84	92	249013	11.23	ug/l	99
36) 1,1,2-Trichloroethane	15.70	97	77862	11.55	ug/l	98
37) Tetrachloroethene	16.52	164	183304	11.23	ug/l	96
38) 1,2-Dibromoethane	17.51	107	110768	11.74	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6467.D
 Acq Time : 17 Jul 96 2:36 am
 Sample : WASH/B#96421
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 3:09 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Chlorobenzene	18.53	112	331035	11.25	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.64	131	156347	11.38	ug/l	96
41) Ethylbenzene	18.67	106	168245	11.46	ug/l	94
42) m,p-Xylenes	18.85	106	405144	22.79	ug/l	92
43) o-Xylene	19.87	106	189643	11.41	ug/l	90
44) Styrene	19.95	104	290905	11.50	ug/l	97
46) Isopropylbenzene	20.72	105	579271	11.49	ug/l	98
48) Bromobenzene	21.80	77	290553	11.48	ug/l	95
49) 1,1,2,2-Tetrachloroethane	21.14	83	92941	12.01	ug/l	99
50) 1,2,3-Trichloropropane	21.51	75	54657	12.89	ug/l	87
51) n-Propylbenzene	21.73	91	680626	11.25	ug/l	94
52) 2-Chlorotoluene	22.13	91	461243	11.31	ug/l	91
53) 4-Chlorotoluene	22.24	91	423103	11.66	ug/l	86
54) 1,3,5-Trimethylbenzene	22.11	105	412452	11.18	ug/l	96
55) Tert-Butylbenzene	22.93	119	465904	11.35	ug/l	99
56) 1,2,4-Trimethylbenzene	23.01	105	423328	11.37	ug/l	98
57) Sec-Butylbenzene	23.40	105	670693	11.09	ug/l	97
58) 1,3-Dichlorobenzene	23.87	146	287565	11.36	ug/l	99
59) 1,4-Dichlorobenzene	24.10	146	295438	11.60	ug/l	99
60) p-Isopropyltoluene	23.70	119	513273	11.10	ug/l	98
61) 1,2-Dichlorobenzene	24.85	146	239068	11.91	ug/l	96
62) n-Butylbenzene	24.55	91	501037	10.67	ug/l	98
63) 1,2-Dibromo-3-Chloropropan	26.34	75	16841	12.96	ug/l	74
64) 1,2,4-Trichlorobenzene	28.05	180	205279	11.18	ug/l	96
65) Naphthalene	28.60	128	196287	12.84	ug/l	96
66) Hexachlorobutadiene	28.36	225	156541	9.35	ug/l	96
67) 1,2,3-Trichlorobenzene	29.16	180	164744	11.68	ug/l	98

002003

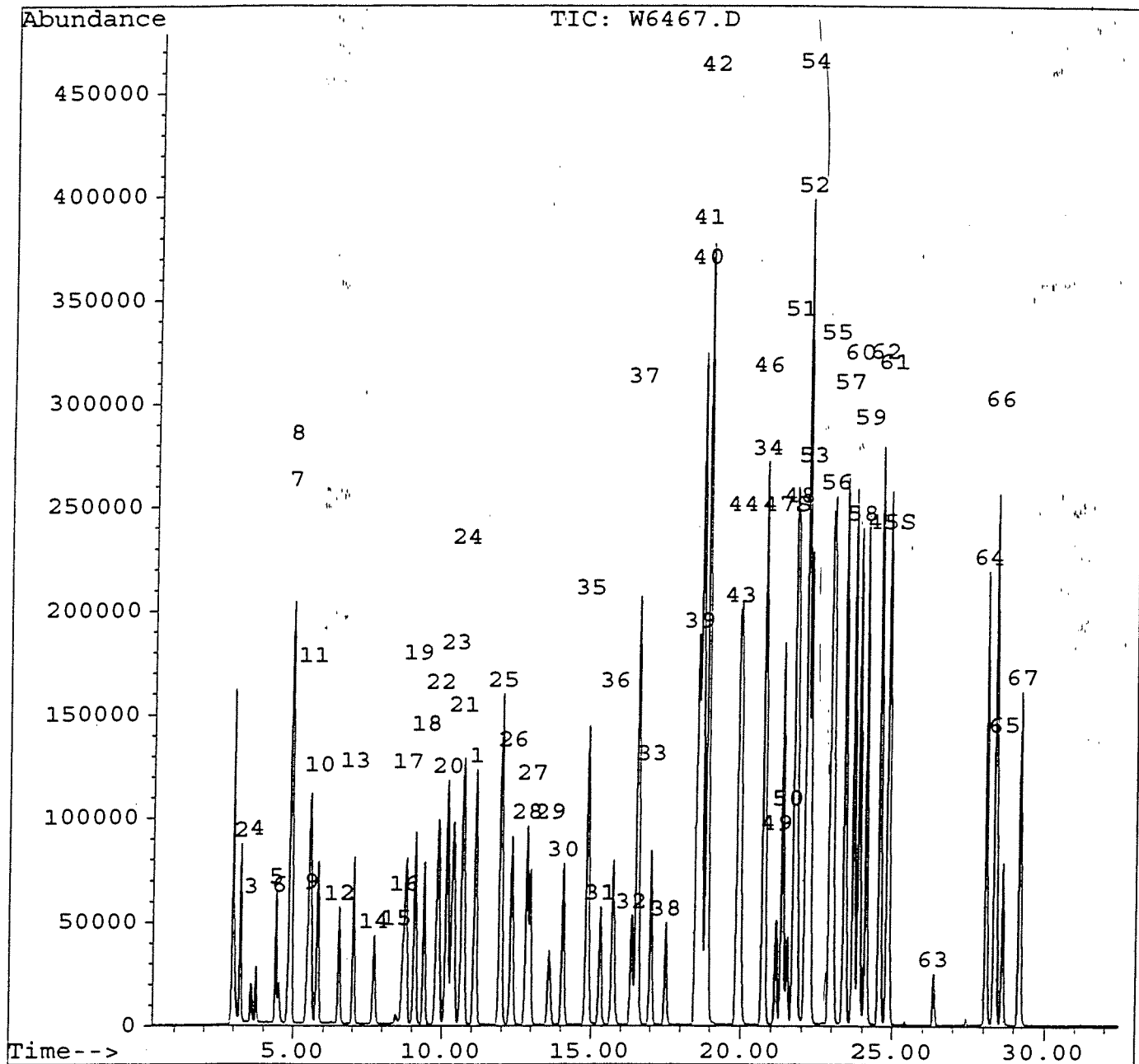
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6467.D
 Acq Time : 17 Jul 96 2:36 am
 Sample : WASH/B#96421
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 3:09 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



002004

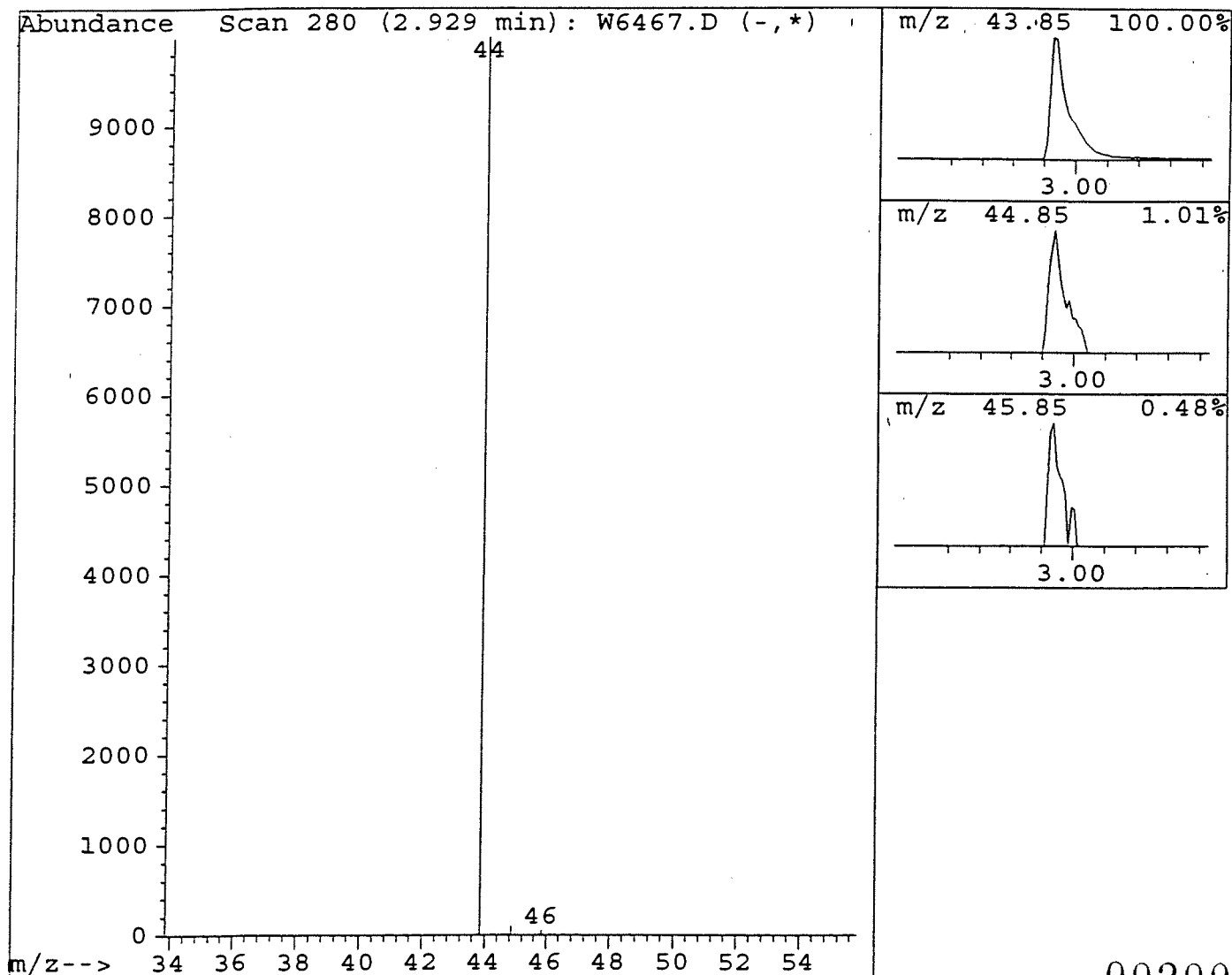
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6467.D
Acq Time : 17 Jul 96 2:36 am
Sample : WASH/B#96421
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.93	7.64 ug/l	595476	Fluorobenzene	11.10	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 No Hits From C:\DATABASE\NBS75K.L			0	000000-00-0	0



002005

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6469.D

Acq Time : 17 Jul 96 3:56 am

Sample : G9607191-4 (3A)/B#96421 G9607191-2

Misc : 25ML/GW-3/ALLIED SIGNAL

Quant Time: Jul 17 04:29 1996

Operator: DEBBIE

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Last Update : Tue Jul 16 10:03:38 1996

Response via : Multiple Level Calibration

REVIEWED & APPROVED

Internal Standards	R.T.	Q Ion	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.09	96	385106	10.00	ug/l	-0.0
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.79	150	221953	10.01	ug/l	100.1%
47) Bromofluorobenzene	21.34	95	217023	10.39	ug/l	103.8%
Target Compounds						
2) Dichlorodifluoromethane	3.20	85	2477	0.18	ug/l #	65
9) Acetone	5.62	43	327	1.00	ug/l #	100
10) 1,1-Dichloroethene	5.80	96	12780	1.70	ug/l 1.7	95
12) Methylene Chloride	6.52	84	2331	0.43	ug/l <DL	98
14) 1,1-Dichloroethane	7.72	63	5004	0.46	ug/l <DL	83
17) 1,2-Dichloroethene (cis-)	8.79	96	18347	2.07	ug/l >.1	89
19) Chloroform	9.07	83	6847	0.37	ug/l <DL	99
21) 1,2-Dichloroethane	10.64	62	1153	0.14	ug/l #	48
22) 1,1,1-Trichloroethane	9.84	97	17905	0.81	ug/l 0.81	97
23) Carbon Tetrachloride	10.37	117	41275	2.01	ug/l >.0	98
25) Trichloroethene	11.93	130	333238	21.12	ug/l >1	97
35) Toluene	14.85	92	76612	3.46	ug/l 3.5	97
37) Tetrachloroethene	16.54	164	45398	2.79	ug/l >.8	96
65) Naphthalene	28.61	128	7110	0.47	ug/l # <DL	81

BATCH #

DATE

ANALYST

96421

07/17/96

mm

002006

(#) = qualifier out of range (m) = manual integration

W6469.D 524JLS.M

Wed Jul 17 04:29:48 1996

VOA3

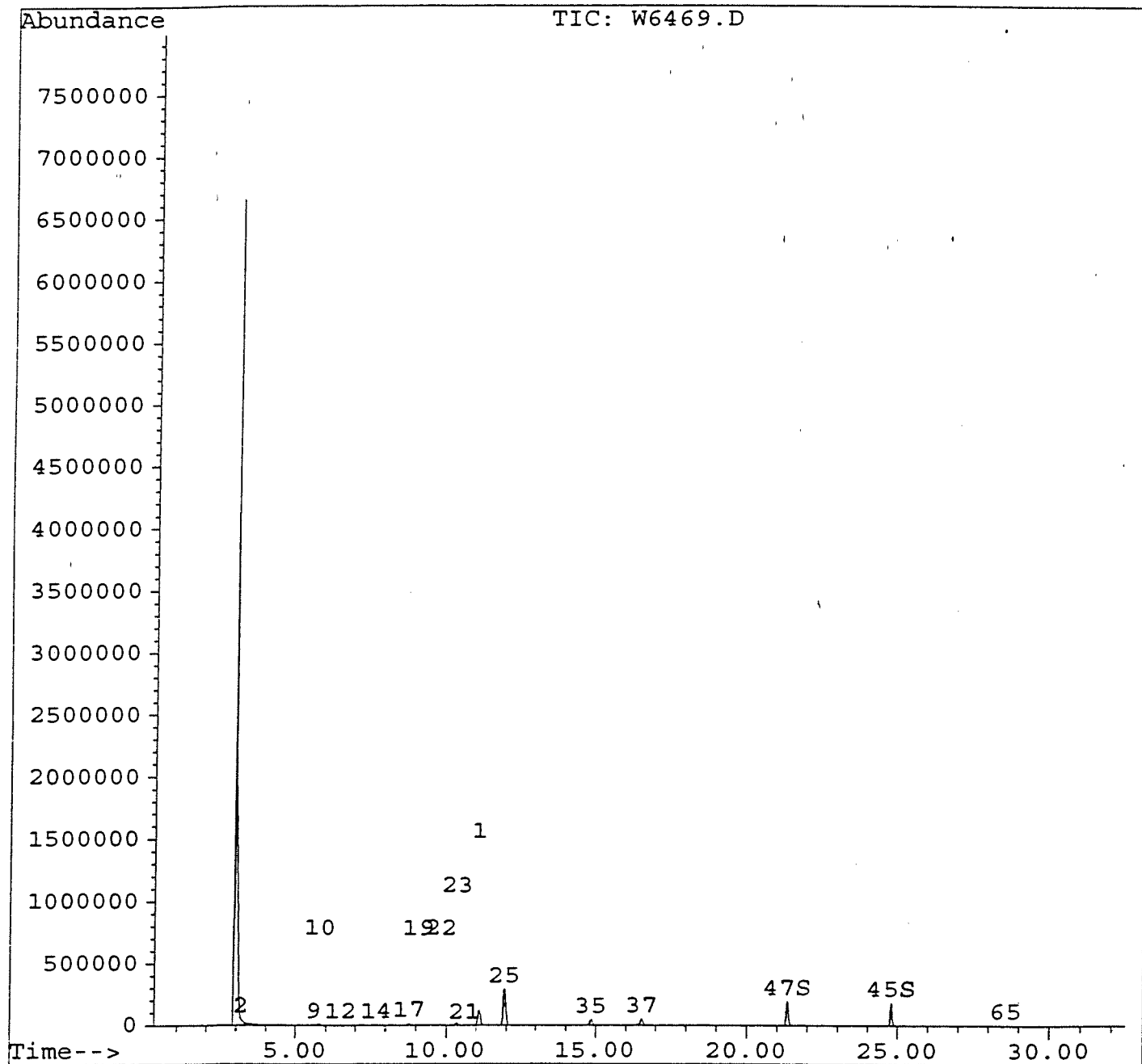
Page 1

Quantitation Report

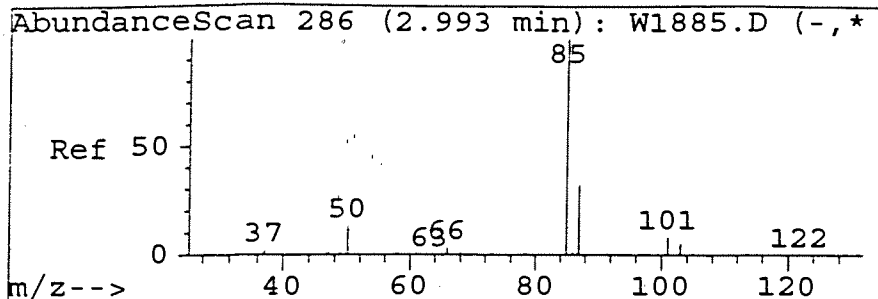
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 Acq Time : 17 Jul 96 3:56 am
 Sample : G9607191-4(3A)/B#96421
 Misc : 25ML/GW-9/ALLIED SIGNAL
 Quant Time: Jul 17 4:29 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

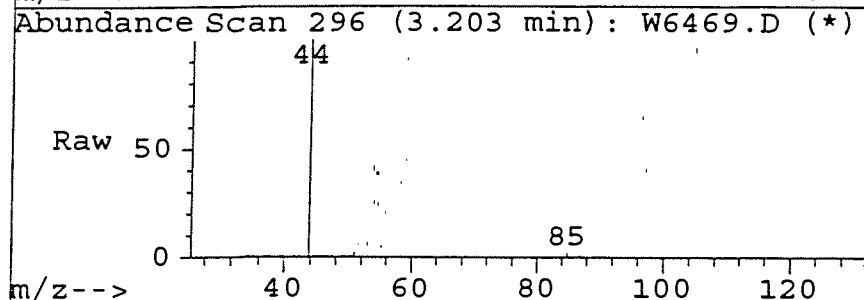


002007

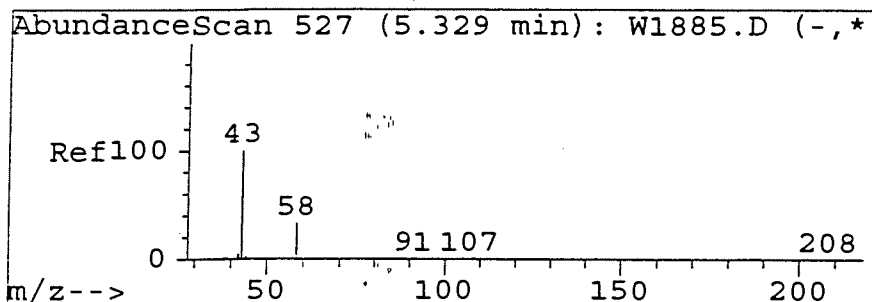
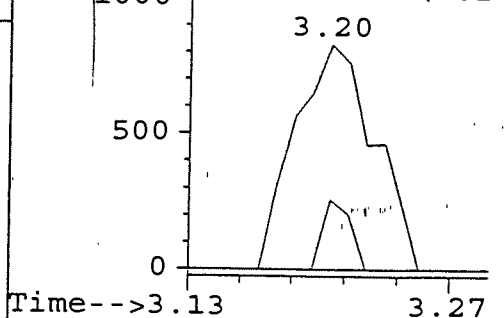
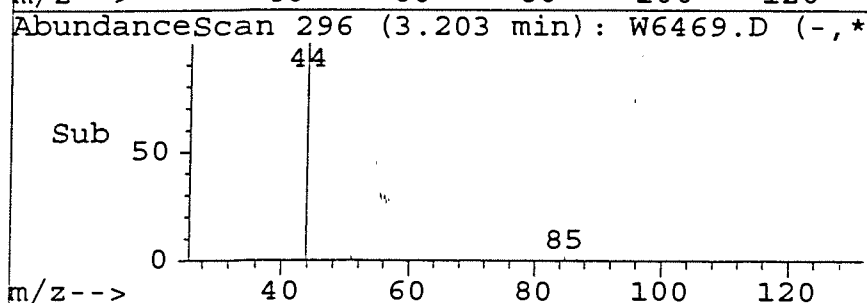


#2
 Dichlorodifluoromethane
 Concen: 0.18 ug/l
 RT: 3.20 min Scan# 296
 Delta R.T. - 0.09 min
 Lab File: W6469.D
 Acq: 17 Jul 96 3:56 am

Tgt	Ion:85	Resp:	2477
Ion	Ratio	Lower	Upper
85	100		
87	10.8	0.0	84.3
101	0.0	0.0	58.1
103	0.0	0.0	54.6

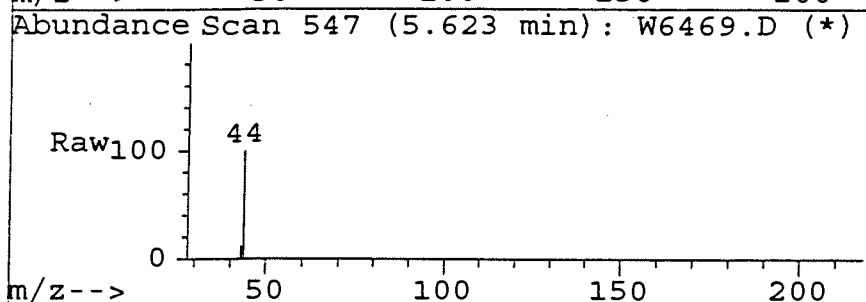


Abundance	Ion	85.00 (84.
	Ion	87.00 (86.
	Ion	101.00 (100
	Ion	103.00 (102

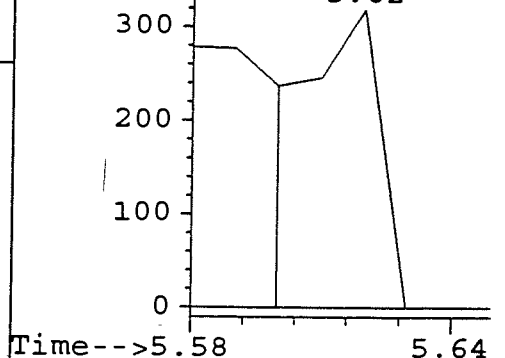
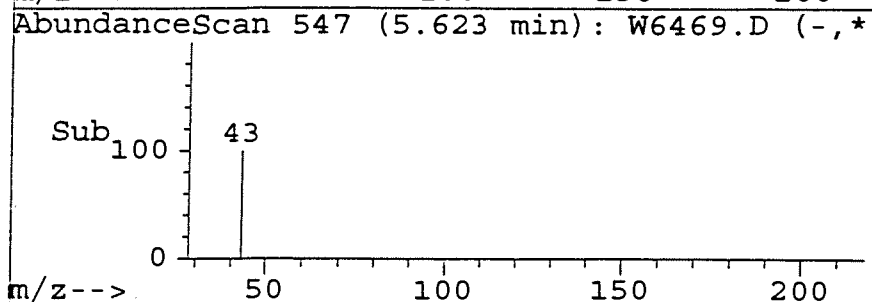


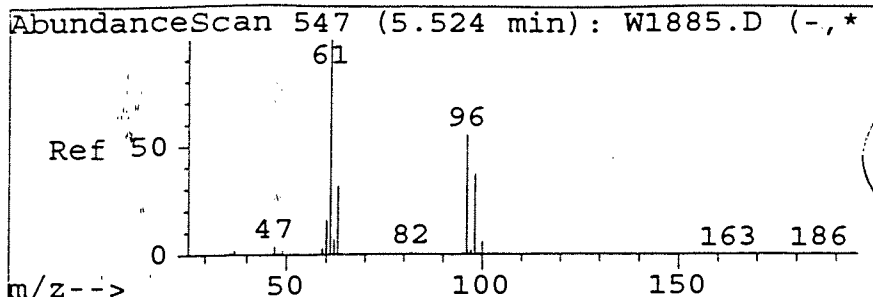
#9
 Acetone
 Concen: 1.00 ug/l
 RT: 5.62 min Scan# 547
 Delta R.T. -0.01 min
 Lab File: W6469.D
 Acq: 17 Jul 96 3:56 am

Tgt Ion:43	Resp:	327
Ion	Ratio	Lower Upper
43	100	
58	0.0	0.0 50.0
0	0.0	0.0 0.0
0	0.0	0.0 0.0



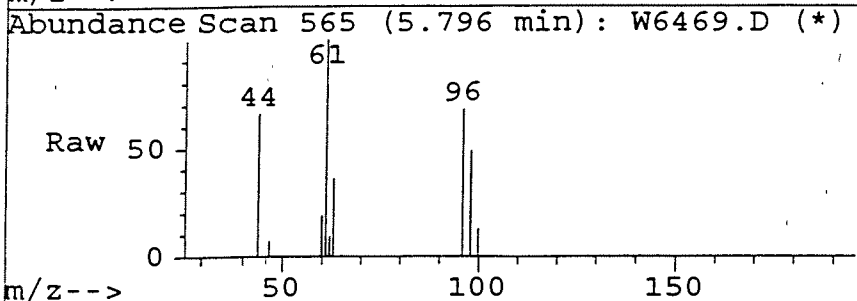
Abundance	Ion	43.00 (42.
	Ion	58.00 (57.
		5.62



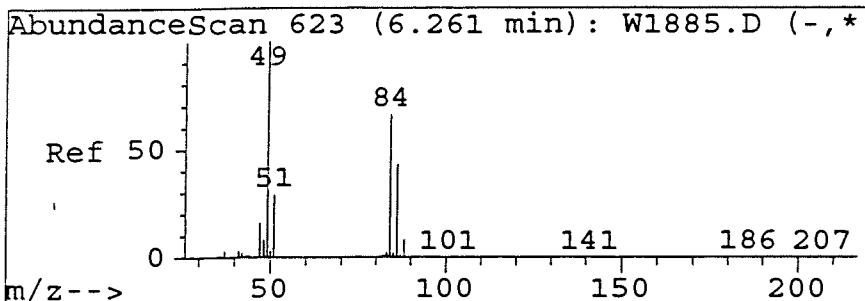
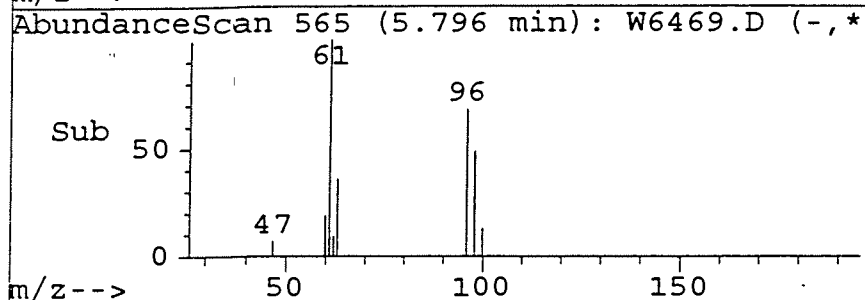
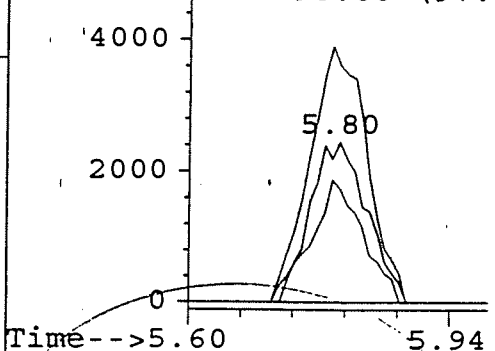


#10
1,1-Dichloroethene
Concen: 1.70 ug/l
RT: 5.80 min Scan# 565
Delta R.T. -0.03 min
Lab File: W6469.D
Acq: 17 Jul 96 3:56 am

Tgt Ion:96	Resp:	12780
Ion Ratio	Lower	Upper
96	100	
61	157.4	102.5 202.5
98	67.5	12.4 112.4
0	0.0	0.0 0.0

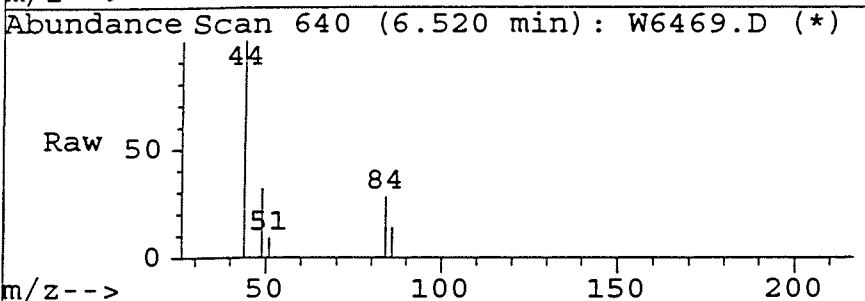


AbundanceIon	96.00 (95.
Ion	61.00 (60.
Ion	98.00 (97.

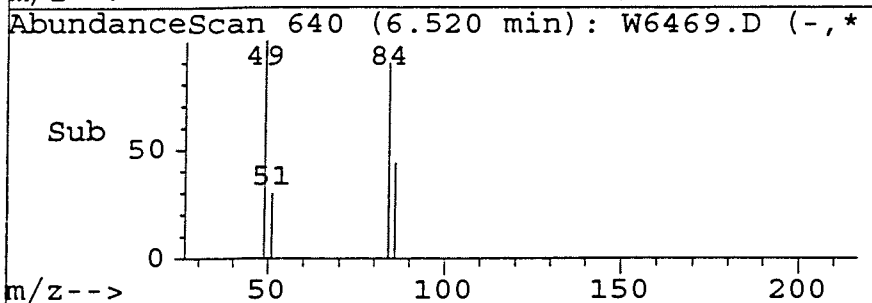
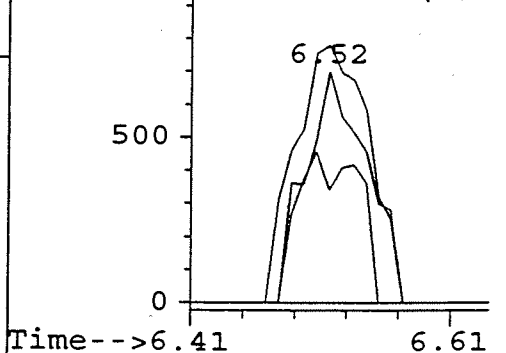


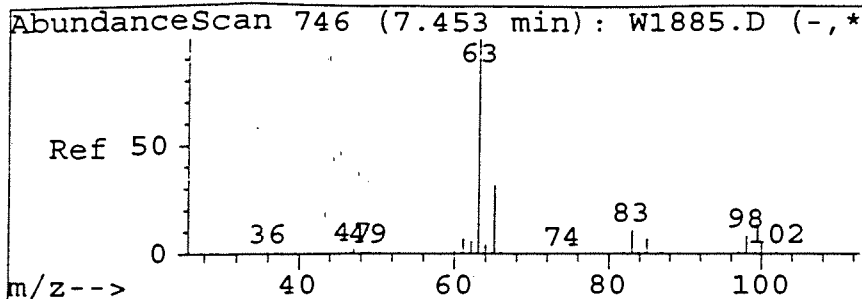
#12
Methylene Chloride
Concen: 0.43 ug/l
RT: 6.52 min Scan# 640
Delta R.T. -0.08 min
Lab File: W6469.D
Acq: 17 Jul 96 3:56 am

Tgt Ion:84	Resp:	2331
Ion Ratio	Lower	Upper
84	100	
49	133.2	41.6 221.6
86	65.3	0.0 157.2
0	0.0	0.0 0.0



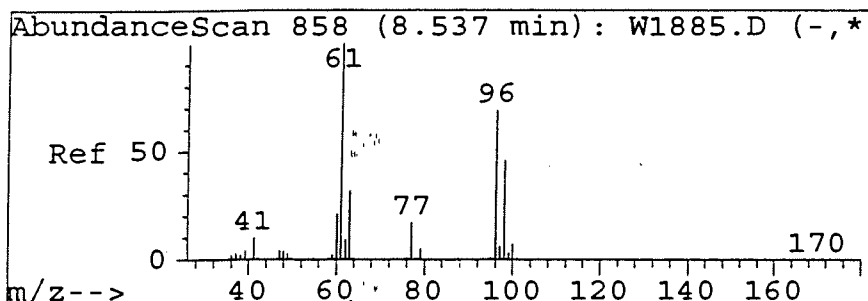
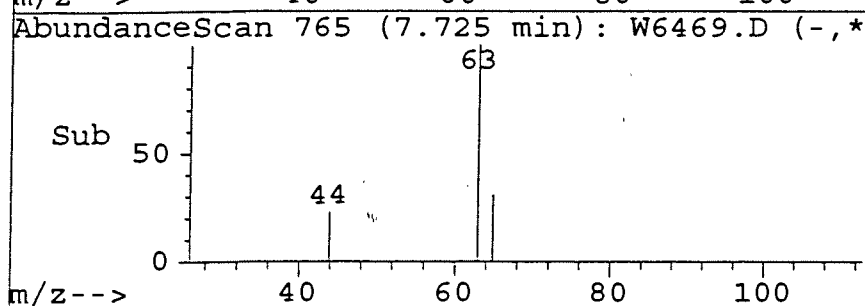
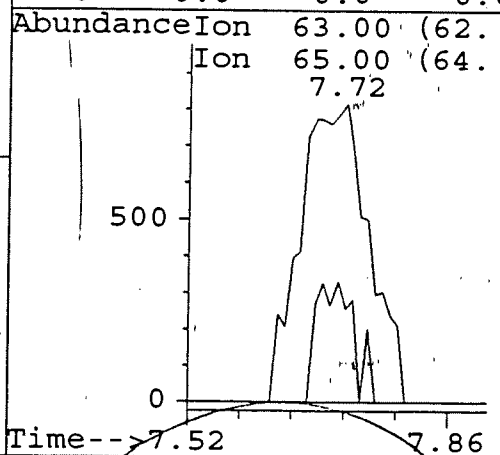
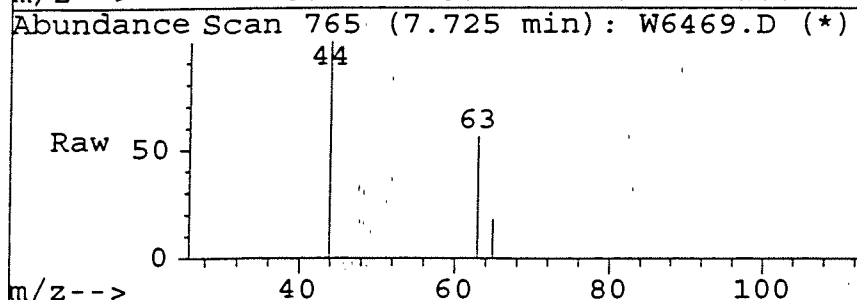
AbundanceIon	84.00 (83.
Ion	49.00 (48.
Ion	86.00 (85.





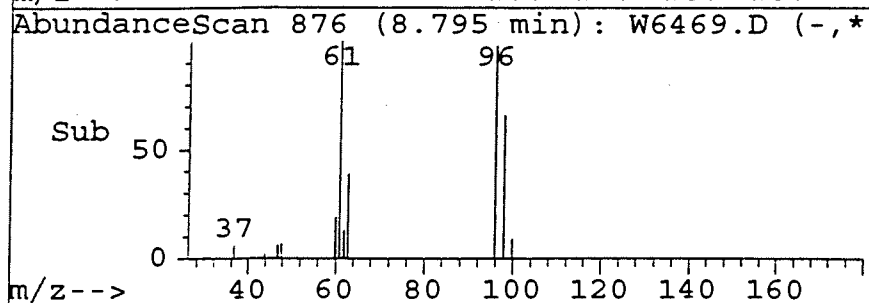
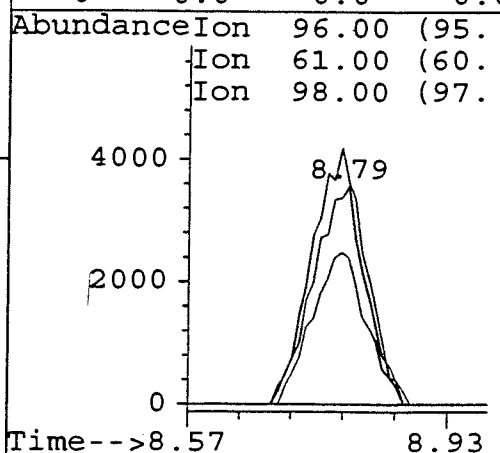
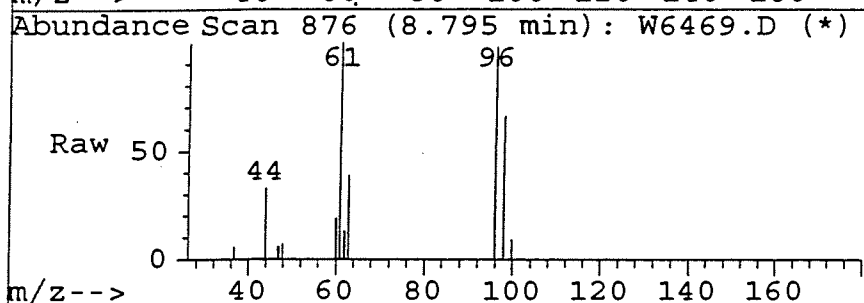
#14
 1,1-Dichloroethane
 Concen: 0.46 ug/l
 RT: 7.72 min Scan# 765
 Delta R.T. -0.13 min
 Lab File: W6469.D
 Acq: 17 Jul 96 3:56 am

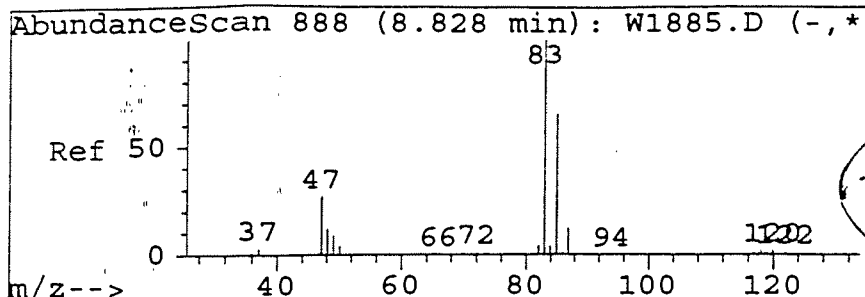
Tgt Ion:63	Resp:	5004
Ion	Ratio	Lower Upper
63	100	
65	22.4	0.0 81.6
0	0.0	0.0 0.0
0	0.0	0.0 0.0



#17
 1,2-Dichloroethene (cis-)
 Concen: 2.07 ug/l
 RT: 8.79 min Scan# 876
 Delta R.T. -0.16 min
 Lab File: W6469.D
 Acq: 17 Jul 96 3:56 am

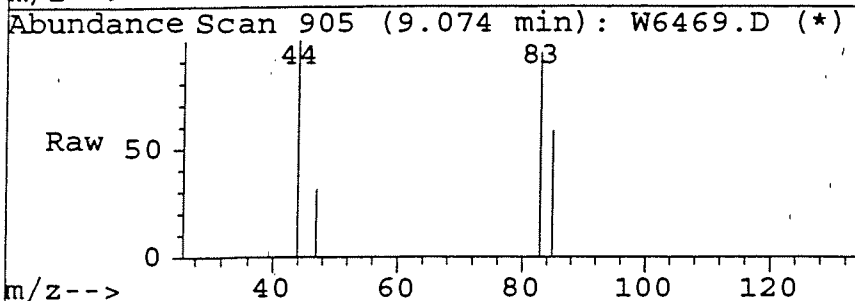
Tgt Ion:96	Resp:	18347
Ion	Ratio	Lower Upper
96	100	
61	118.8	84.0 184.0
98	70.7	14.7 114.7
0	0.0	0.0 0.0



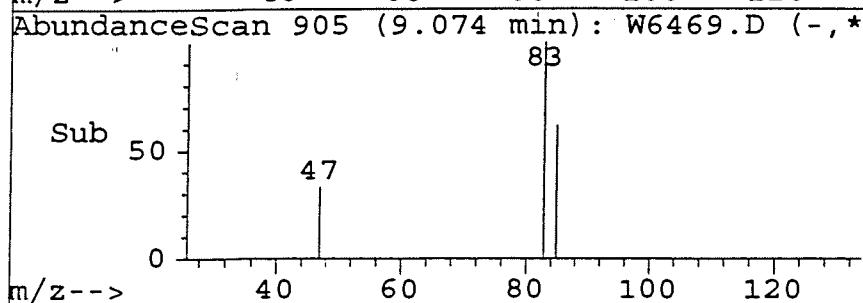
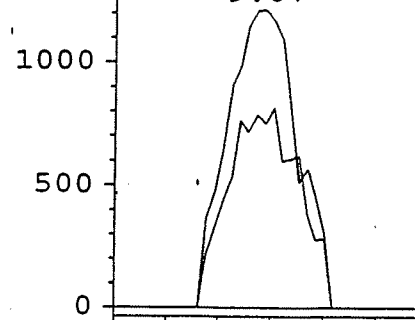


#19
Chloroform
Concen: 0.37 ug/l
RT: 9.07 min Scan# 905
Delta R.T. -0.17 min
Lab File: W6469.D
Acq: 17 Jul 96 3:56 am

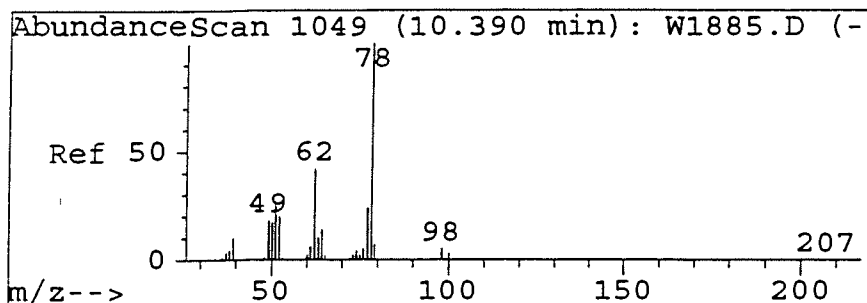
Tgt Ion: 83		Resp:	6847
Ion	Ratio	Lower	Upper
83	100		
85	68.5	17.3	117.3
0	0.0	0.0	0.0
0	0.0	0.0	0.0



AbundanceIon 83.00 (82.
Ion 85.00 (84.
9.07

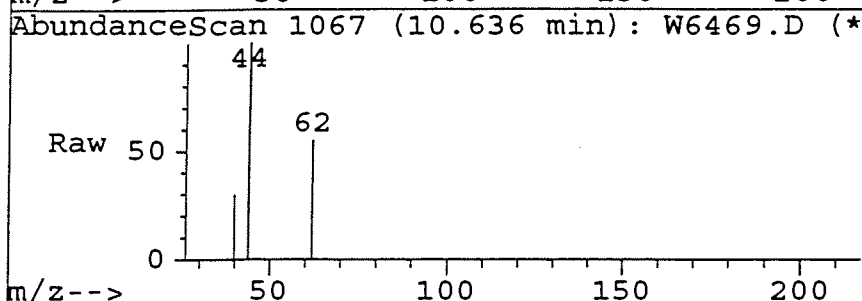


Time-->8.90 9.20

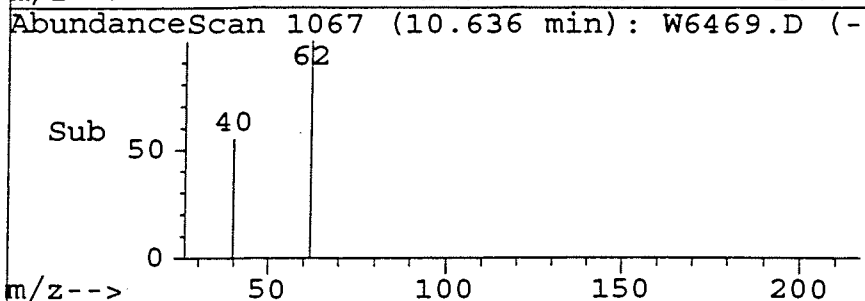
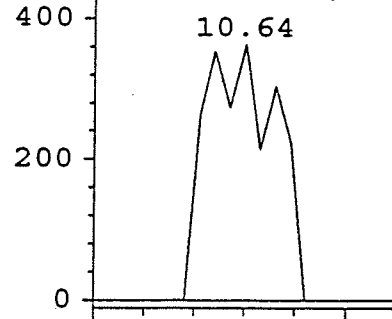


#21
1,2-Dichloroethane
Concen: 0.14 ug/l
RT: 10.64 min Scan# 1067
Delta R.T. -0.20 min
Lab File: W6469.D
Acq: 17 Jul 96 3:56 am

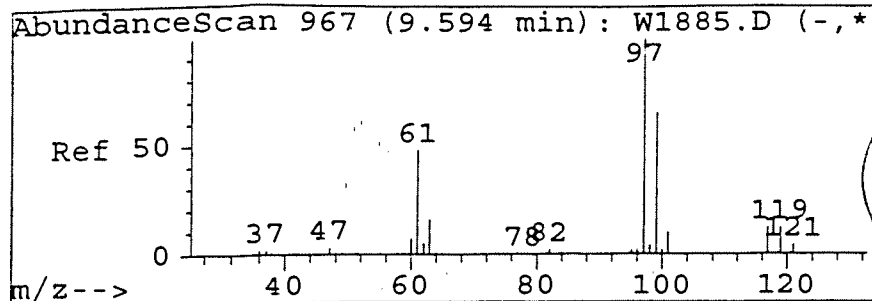
Tgt	Ion:62	Resp:	1153
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0



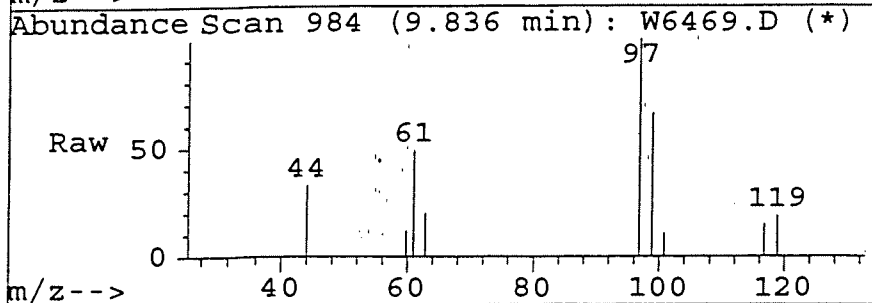
AbundanceIon 62.00 (61.
Ion 64.00 (63.
Ion 98.00 (97.



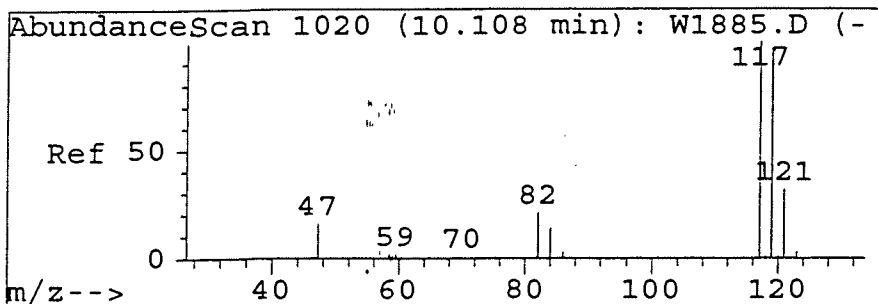
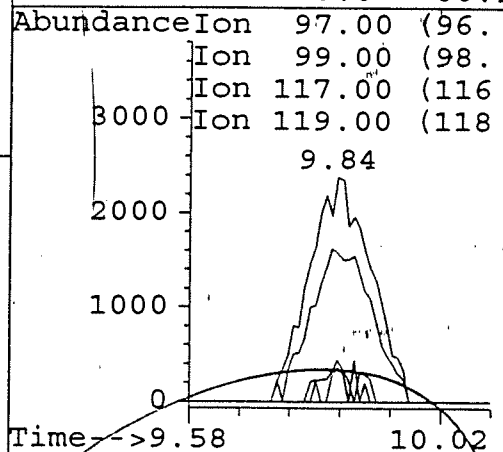
Time-->10.54 10.70



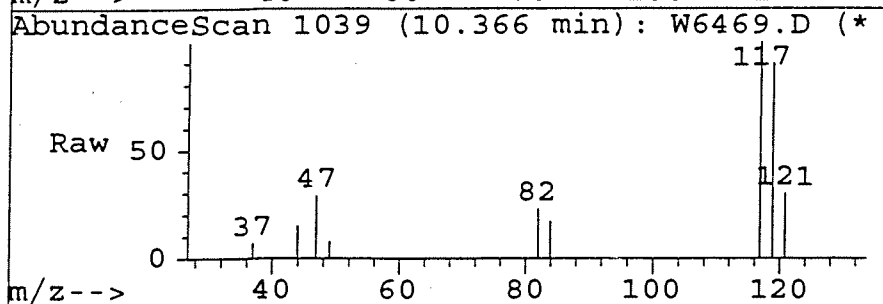
#22
1,1,1-Trichloroethane
Concen: 0.81 ug/l
RT: 9.84 min Scan# 984
Delta R.T. -0.19 min
Lab File: W6469.D
Acq: 17 Jul 96 3:56 am



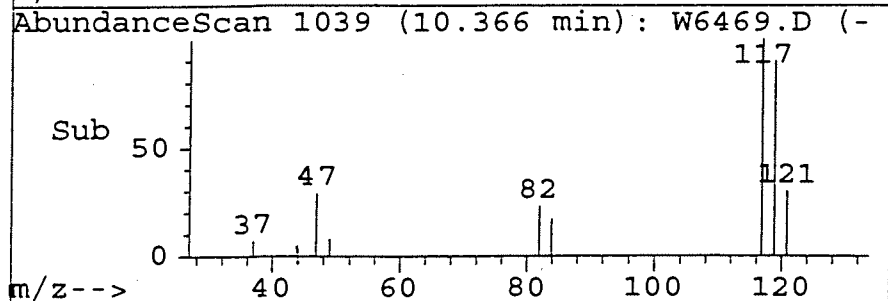
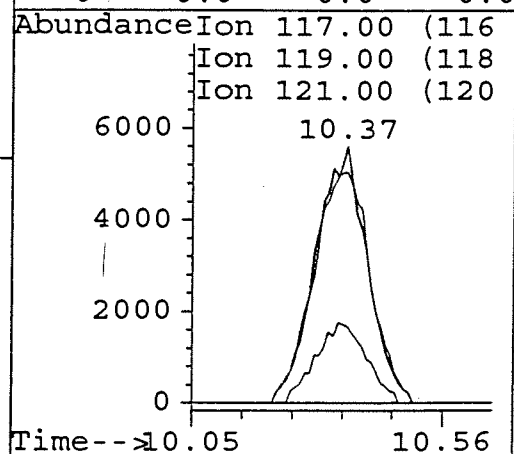
Tgt Ion	Ratio	Lower	Upper
97	100		
99	68.3	18.2	118.2
117	3.0	0.0	57.5
119	6.5	0.0	60.9

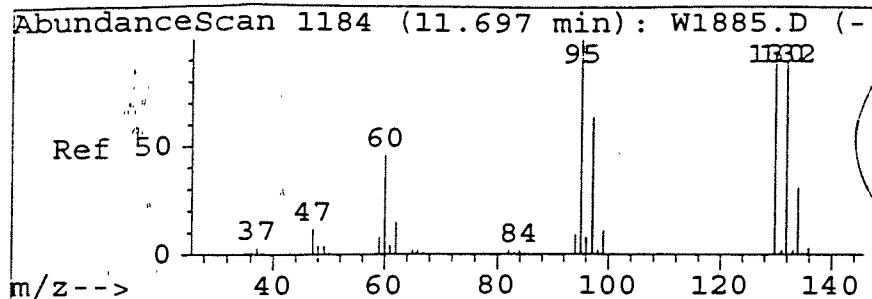


#23
Carbon Tetrachloride
Concen: 2.01 ug/l
RT: 10.37 min Scan# 1039
Delta R.T. -0.18 min
Lab File: W6469.D
Acq: 17 Jul 96 3:56 am



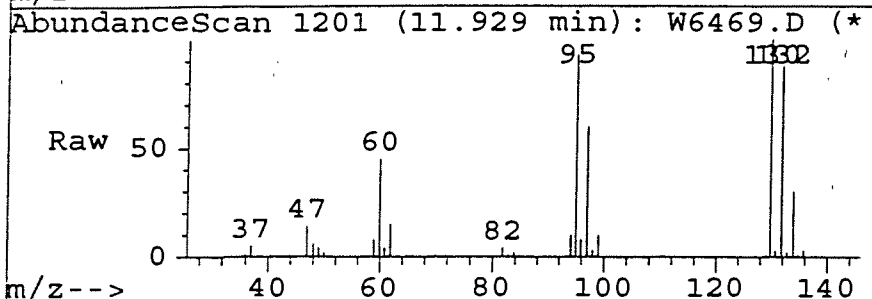
Tgt Ion	Ratio	Lower	Upper
117	100		
119	98.5	47.3	147.3
121	30.6	0.0	82.4
0	0.0	0.0	0.0



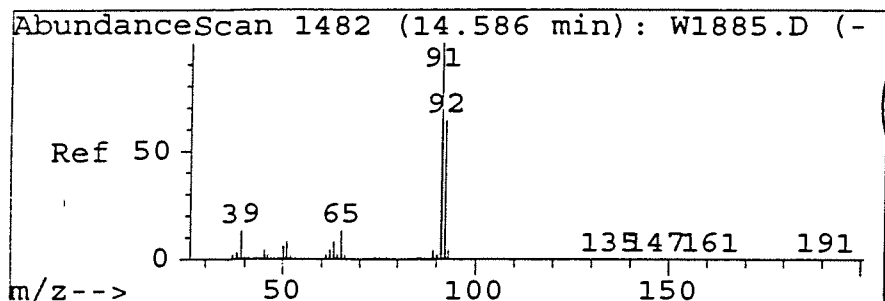
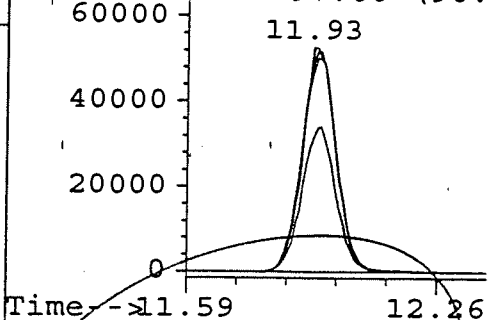
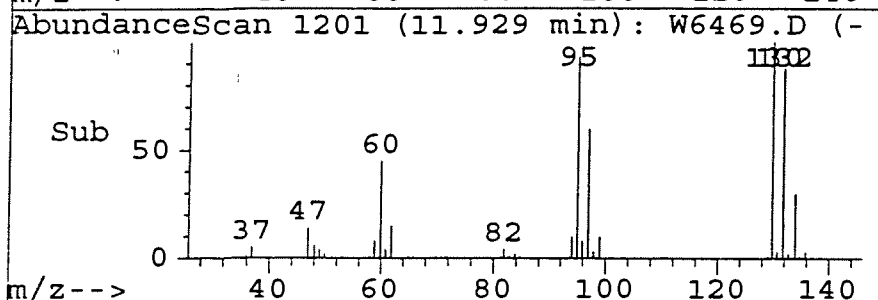


#25
Trichloroethene
Concen: 21.12 ug/l
RT: 11.93 min Scan# 1201
Delta R.T. -0.22 min
Lab File: W6469.D
Acq: 17 Jul 96 3:56 am

Tgt Ion:	130	Resp:	333238
Ion	Ratio	Lower	Upper
130	100		
132	96.8	46.4	146.4
95	98.0	54.1	154.1
97	64.5	16.2	116.2

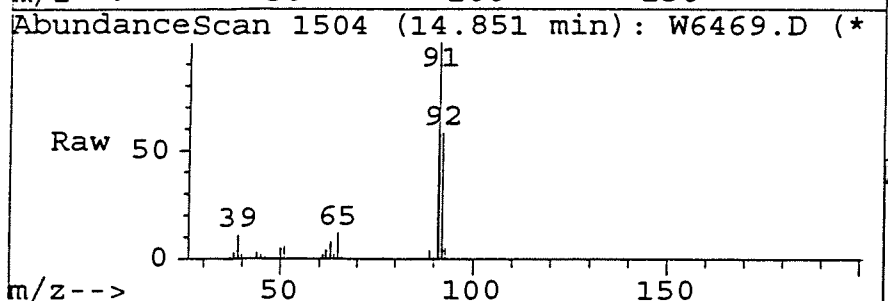


Abundance	Ion	130.00	(129
80000	Ion	132.00	(131
	Ion	95.00	(94.
	Ion	97.00	(96.

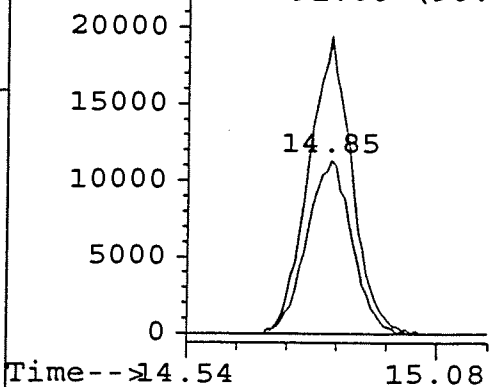
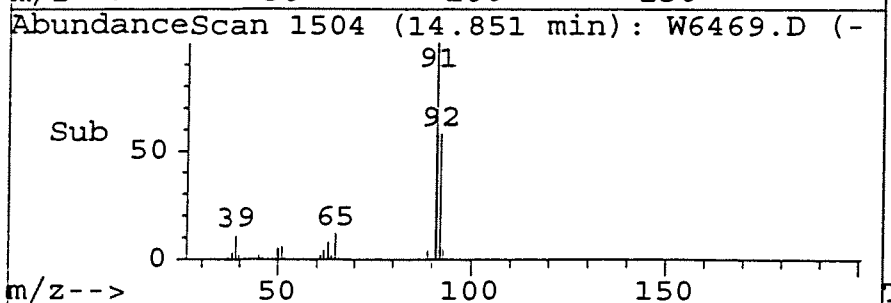


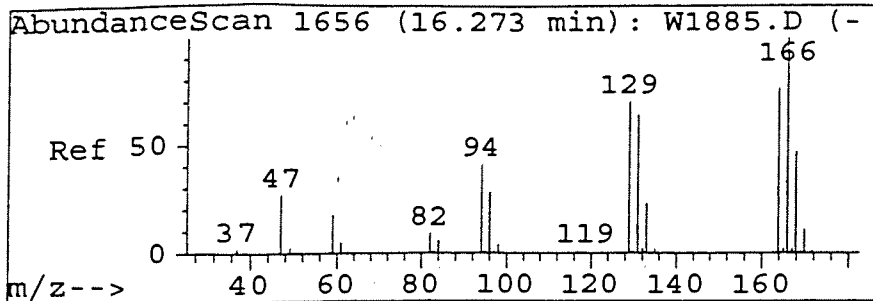
#35
Toluene
Concen: 3.46 ug/l
RT: 14.85 min Scan# 1504
Delta R.T. -0.28 min
Lab File: W6469.D
Acq: 17 Jul 96 3:56 am

Tgt Ion:	92	Resp:	76612
Ion	Ratio	Lower	Upper
92	100		
91	164.1	117.6	217.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0



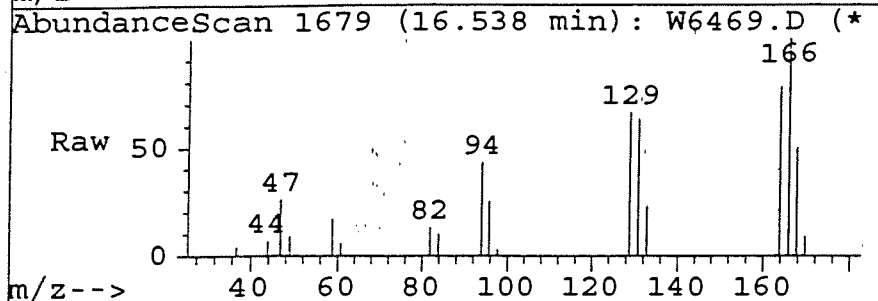
Abundance	Ion	92.00	(91.
	Ion	91.00	(90.



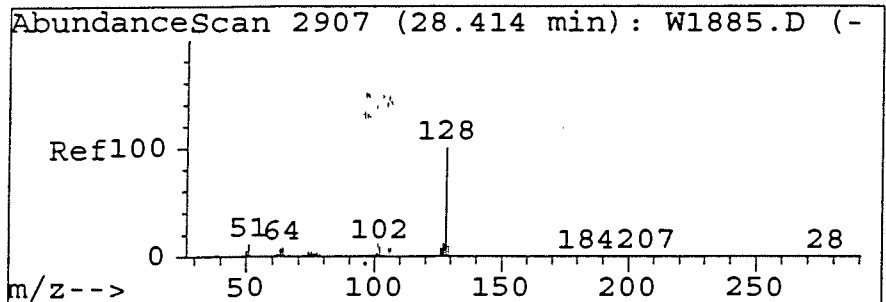
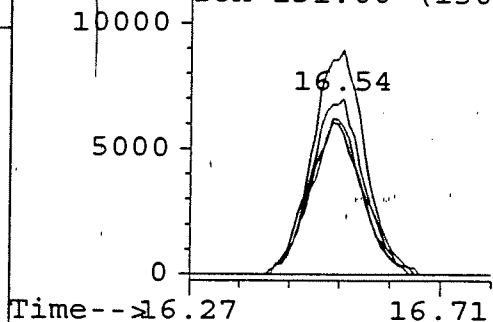
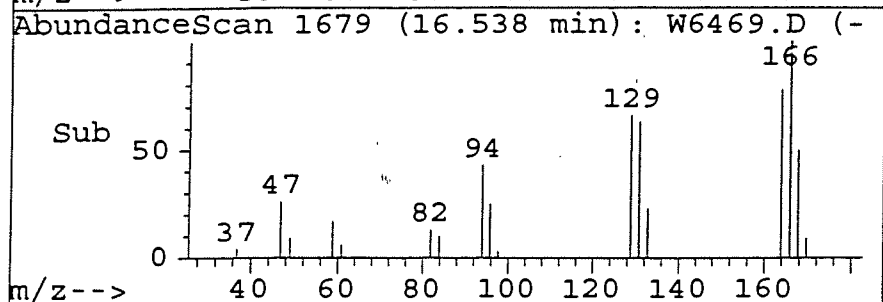


#37
Tetrachloroethene
Concen: 2.79 ug/l
RT: 16.54 min Scan# 1679
Delta R.T. -0.24 min
Lab File: W6469.D
Acq: 17 Jul 96 3:56 am

Tgt Ion:	164	Resp:	45398
Ion Ratio	Lower	Upper	
164	100		
166	128.3	81.6	181.6
129	86.4	33.6	133.6
131	84.0	29.4	129.4

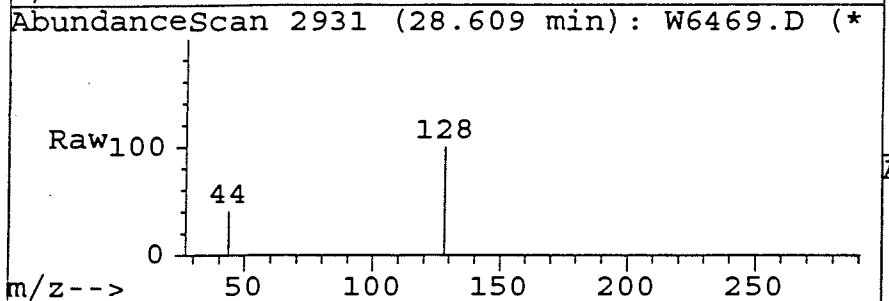


Abundance	Ion	164.00	(163
	Ion	166.00	(165
	Ion	129.00	(128
	Ion	131.00	(130

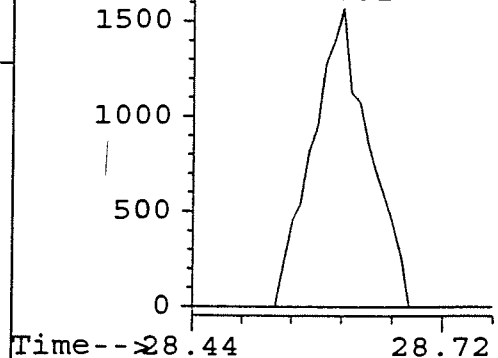
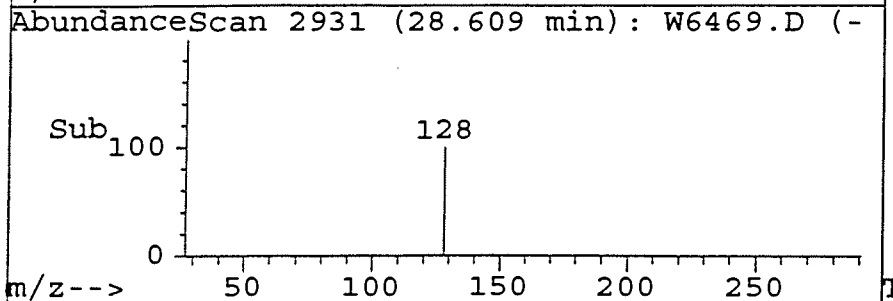


#65
Naphthalene
Concen: 0.47 ug/l
RT: 28.61 min Scan# 2931
Delta R.T. -0.21 min
Lab File: W6469.D
Acq: 17 Jul 96 3:56 am

Tgt Ion:	128	Resp:	7110
Ion Ratio	Lower	Upper	
128	100		
102	0.0	0.0	81.5
0	0.0	0.0	0.0
0	0.0	0.0	0.0



Abundance	Ion	128.00	(127
	Ion	102.00	(101
		28.61	



Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6470.D

Acq Time : 17 Jul 96 4:36 am

Sample : G9607215-2(3A)/B#96421 / G9607191-4

Misc : 25ML/GW-8/ALLIED SIGNAL

Quant Time: Jul 17 5:09 1996

Operator: DEBBIE

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Last Update : Tue Jul 16 10:03:38 1996

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Mi)
1) Fluorobenzene	11.10	96	411613	10.00	ug/l	-0.0
System Monitoring Compounds						%Recover
45) 1,2-Dichlorobenzene-d4	24.79	150	231553	9.78	ug/l	97.7
47) Bromofluorobenzene	21.34	95	224059	10.03	ug/l	100.3
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.20	85	11202	0.76	ug/l #	2769
3) Chloromethane	3.20	50	1686	0.37	ug/l #	4
9) Acetone	5.61	43	305	0.87	ug/l #	10
10) 1,1-Dichloroethene	5.80	96	43247	5.38	ug/l	9
12) Methylene Chloride	6.53	84	1881	0.32	ug/l	7
14) 1,1-Dichloroethane	7.70	63	2108	0.18	ug/l	6
17) 1,2-Dichloroethene (cis-)	8.78	96	7289	0.77	ug/l	9
19) Chloroform	9.07	83	24733	1.26	ug/l	9
21) 1,2-Dichloroethane	11.09	62	5565	0.62	ug/l #	4
22) 1,1,1-Trichloroethane	9.85	97	284895	12.11	ug/l	9
23) Carbon Tetrachloride	10.34	117	55056	2.50	ug/l	9
25) Trichloroethene	11.95	130	2380602	141.15	ug/l	9
28) Bromodichloromethane	12.83	83	2509	0.13	ug/l	7
37) Tetrachloroethene	16.53	164	485160	27.89	ug/l	9
50) 1,2,3-Trichloropropane	21.34	75	106794	23.63	ug/l #	3

REVIEWED & APPROVED

BY S DATE 7-19-96

BATCH # 96421

DATE 07/17/96

ANALYST hmm

*Remun 10x for TCF
see W6490
on 7/17*

002015

(#) = qualifier out of range (m) = manual integration

W6470.D 524JLS.M

Wed Jul 17 05:09:43 1996

VOA3

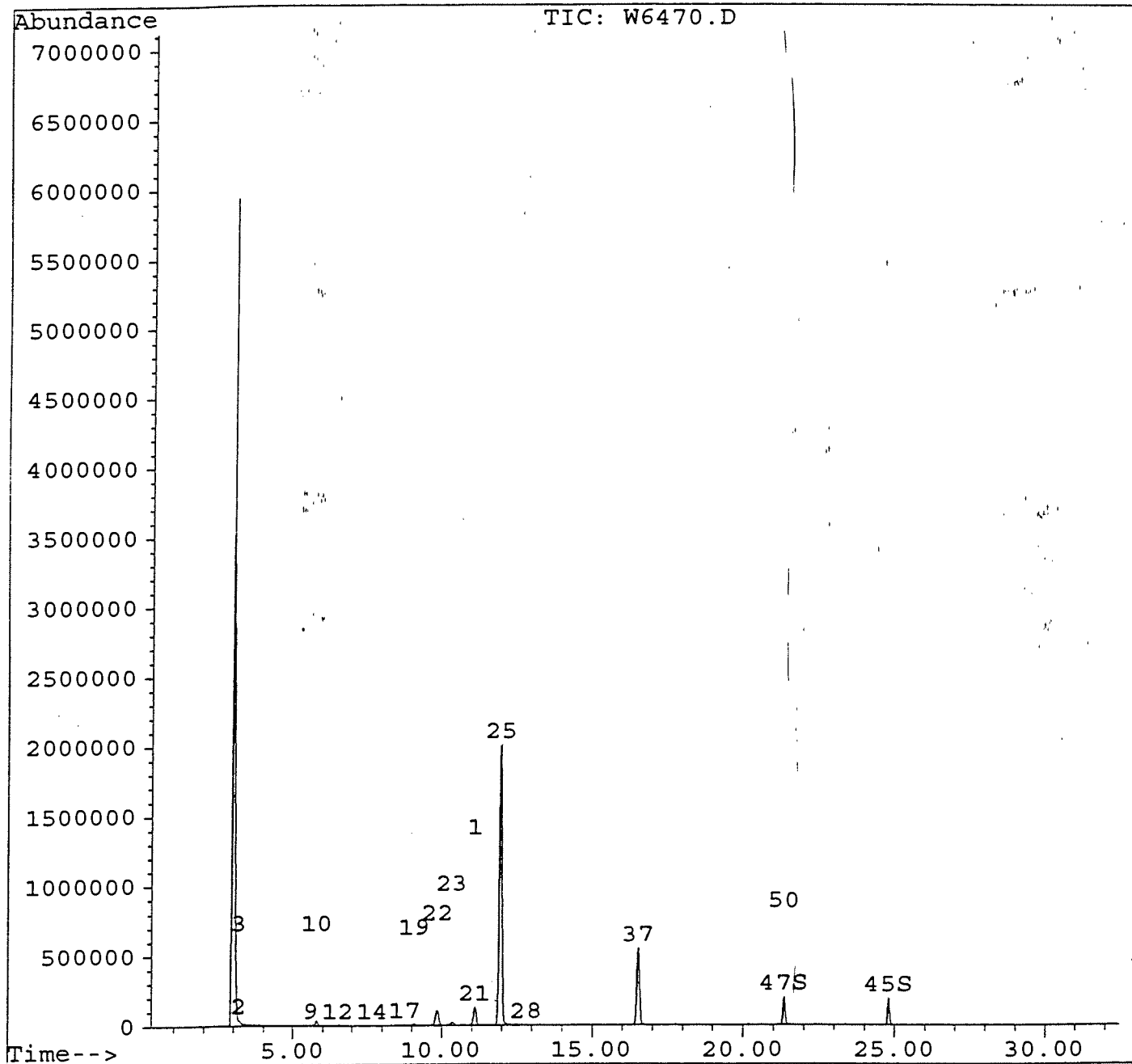
Page 1

Quantitation Report

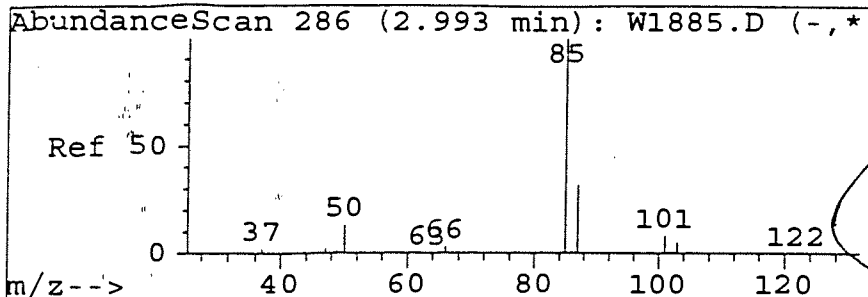
Data File : C:\HPCHEM\1\DATA\JUL16\W6470.D
Acq Time : 17 Jul 96 4:36 am
Sample : G9607215-2(3A)/B#96421
Misc : 25ML/GW-8/ALLIED SIGNAL
Quant Time: Jul 17 5:09 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

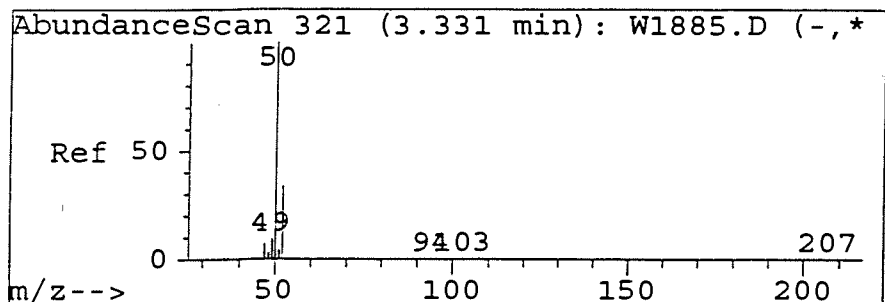
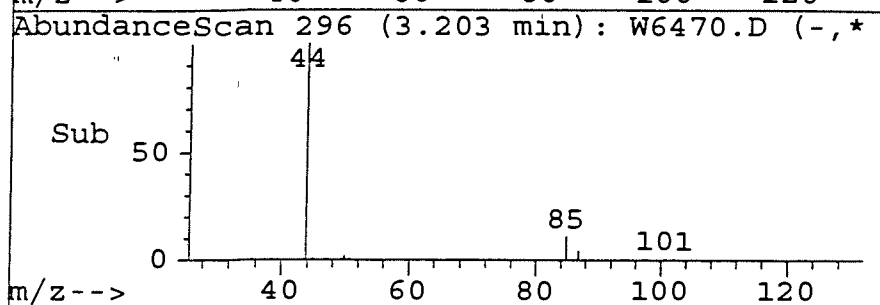
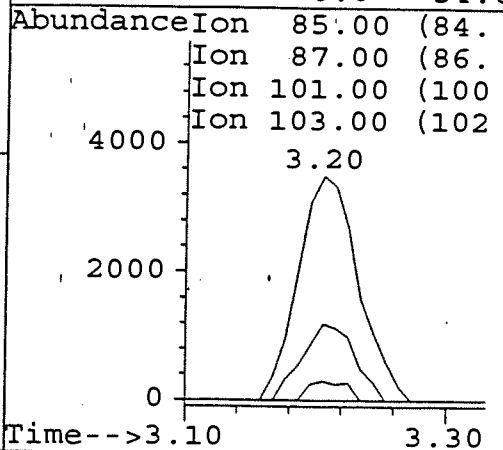
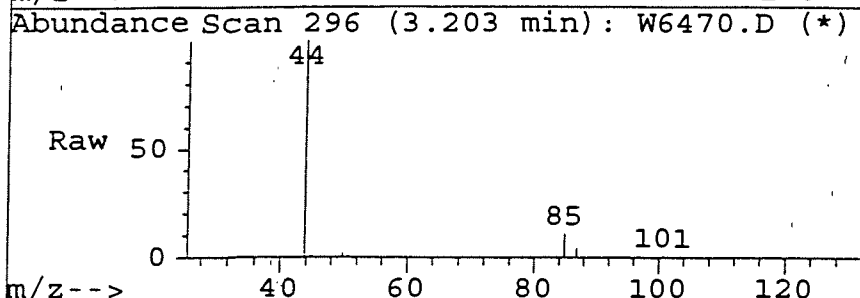


002016



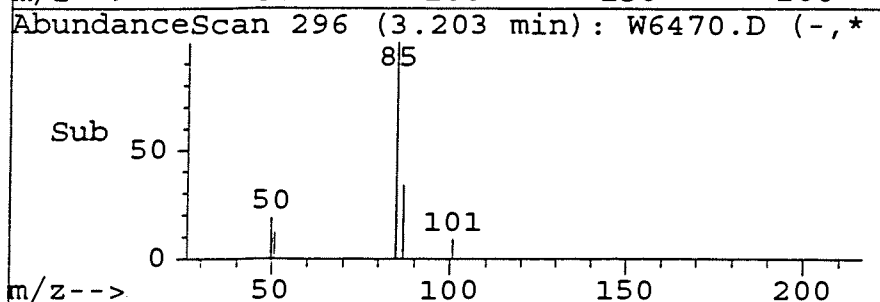
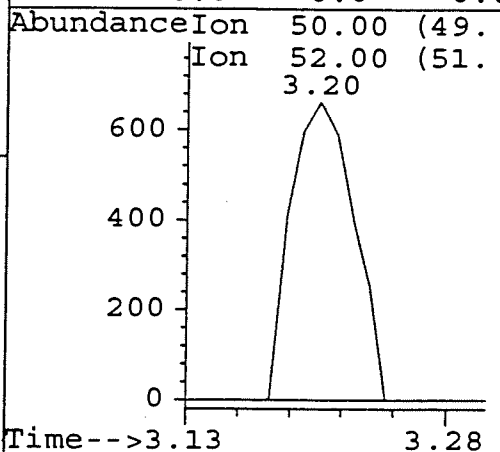
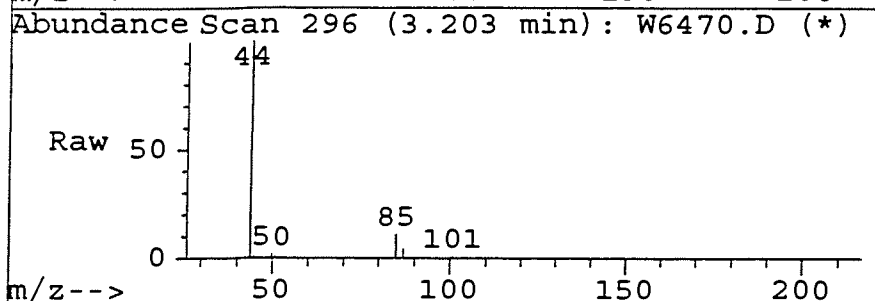
#2
Dichlorodifluoromethane
Concen: 0.76 ug/l
RT: 3.20 min Scan# 296
Delta R.T.: 0.09 min
Lab File: W6470.D
Acq: 17 Jul 96 4:36 am

Tgt Ion:85	Resp:	11202
Ion Ratio	Lower	Upper
85	100	
87	29.9	0.0 84.3
101	5.5	0.0 58.1
103	0.0	0.0 54.6

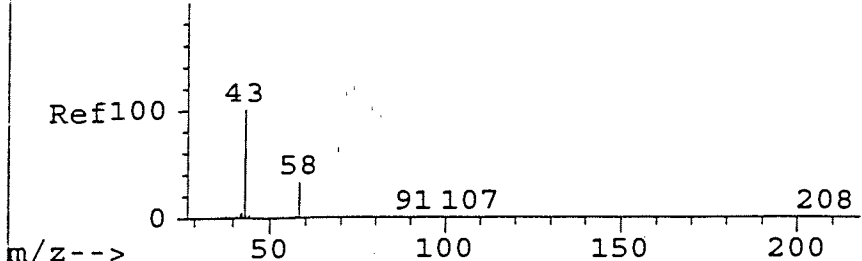


#3
Chloromethane
Concen: 0.37 ug/l
RT: 3.20 min Scan# 296
Delta R.T.: -0.29 min
Lab File: W6470.D
Acq: 17 Jul 96 4:36 am

Tgt	Ion:50	Resp:	1686
Ion	Ratio	Lower	Upper
50	100		
52	0.0	10.5	50.5#
0	0.0	0.0	0.0
0	0.0	0.0	0.0



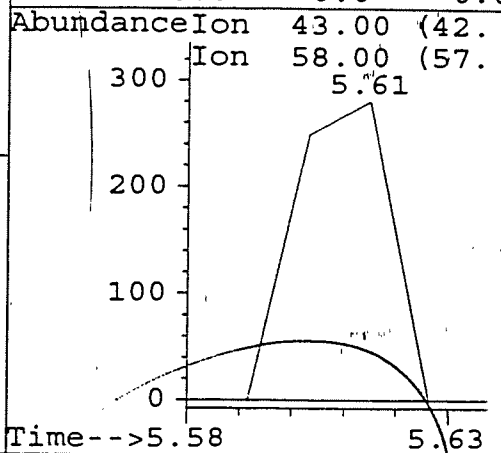
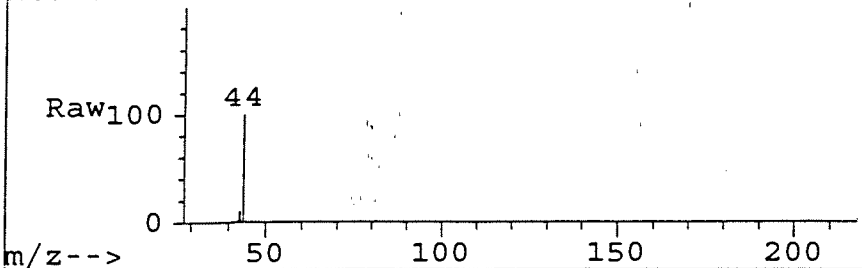
AbundanceScan 527 (5.329 min): W1885.D (-,*



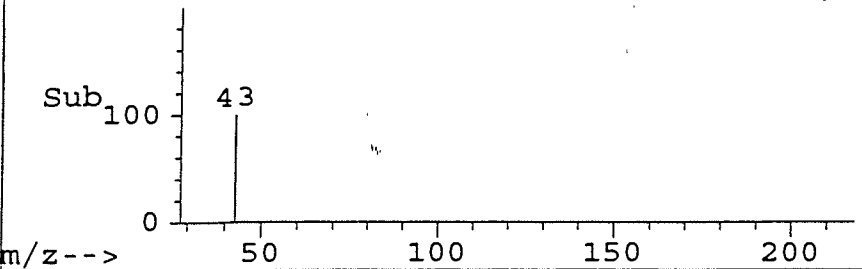
#9
Acetone
Concen: 0.87 ug/l
RT: 5.61 min Scan# 546
Delta R.T. - -0.02 min
Lab File: W6470.D
Acq: 17 Jul 96 4:36 am

Tgt Ion:	43	Resp:	305
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	50.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0

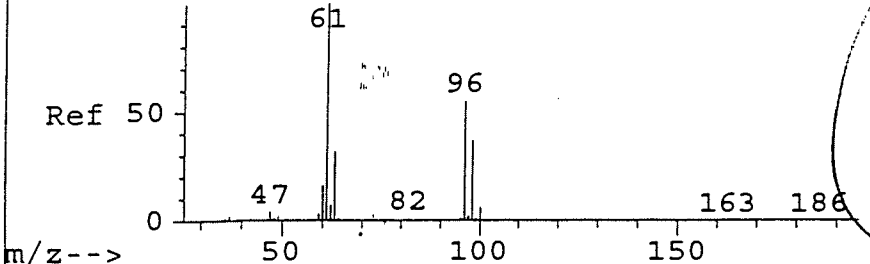
AbundanceScan 546 (5.613 min): W6470.D (*)



AbundanceScan 546 (5.613 min): W6470.D (-,*



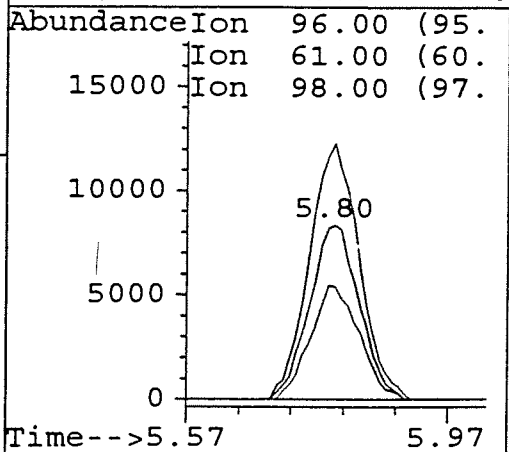
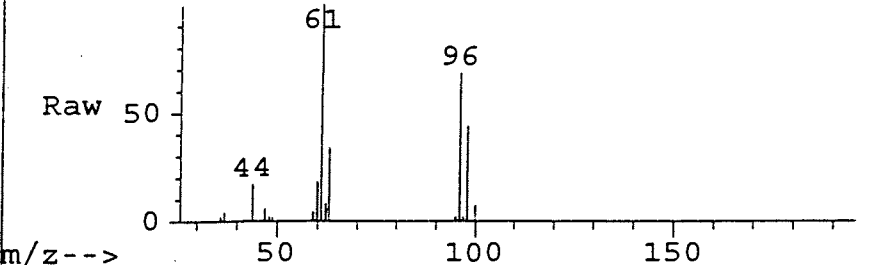
AbundanceScan 547 (5.524 min): W1885.D (-,*



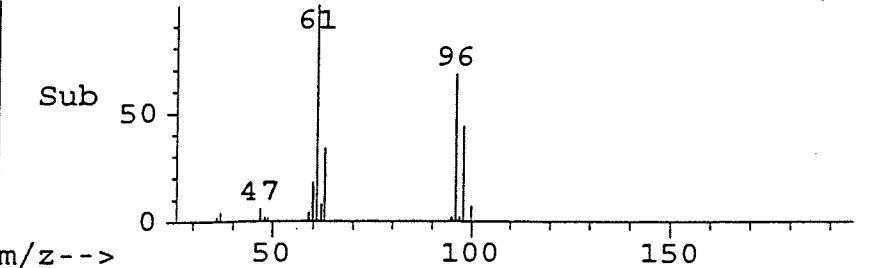
#10
1,1-Dichloroethene
Concen: 5.38 ug/l
RT: 5.80 min Scan# 565
Delta R.T. -0.03 min
Lab File: W6470.D/
Acq: 17 Jul 96 4:36 am

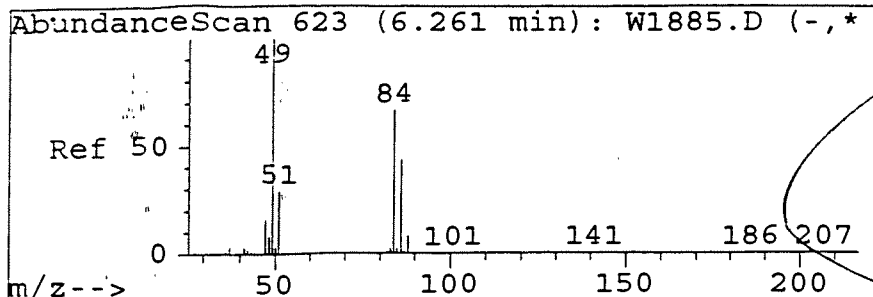
Tgt Ion:	96	Resp:	43247
Ion	Ratio	Lower	Upper
96	100		
61	147.4	102.5	202.5
98	64.3	12.4	112.4
0	0.0	0.0	0.0

AbundanceScan 565 (5.797 min): W6470.D (*)



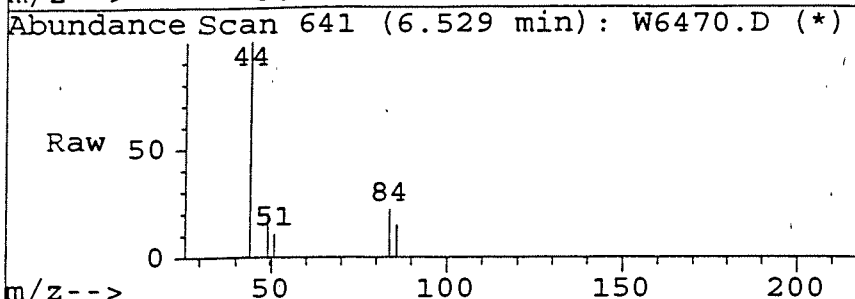
AbundanceScan 565 (5.797 min): W6470.D (-,*



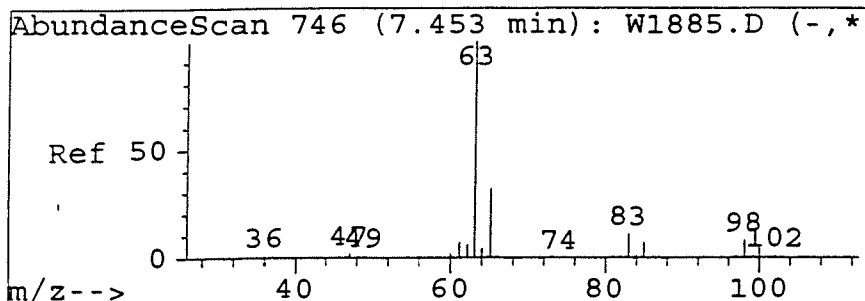
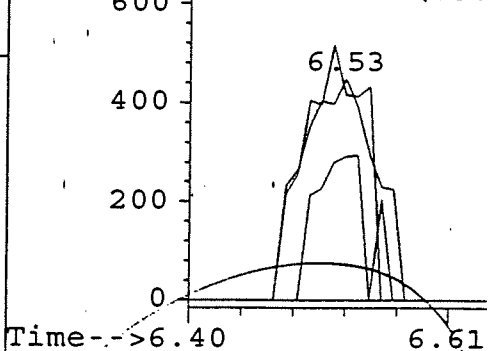
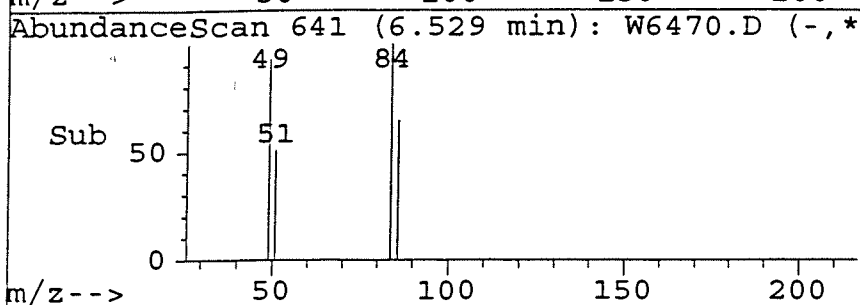


#12
Methylene Chloride
Concen: 0.32 ug/l
RT: 6.53 min Scan# 641
Delta R.T. - -0.07 min
Lab File: W6470.D
Acq: 17 Jul 96 4:36 am

Tgt Ion:84	Resp:	1881
Ion Ratio	Lower	Upper
84	100	
49	94.1	41.6 221.6
86	46.6	0.0 157.2
0	0.0	0.0 0.0

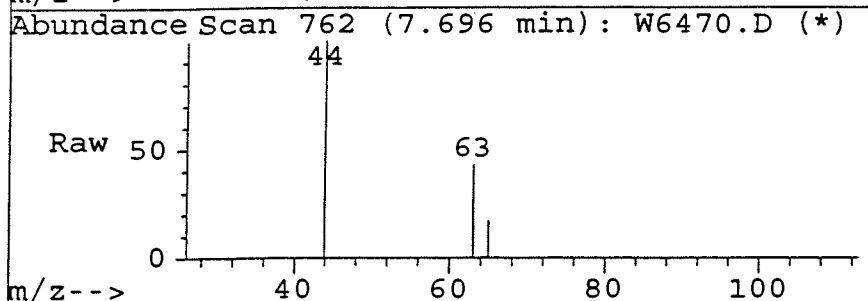


AbundanceIon	84.00 (83.
Ion	49.00 (48.
Ion	86.00 (85.

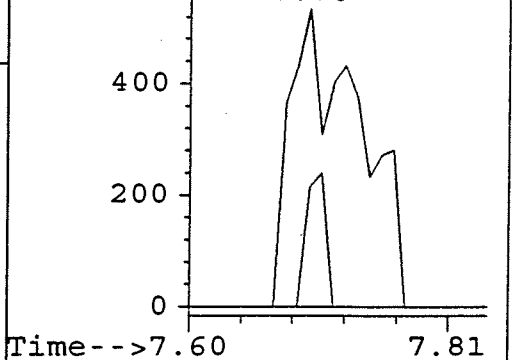
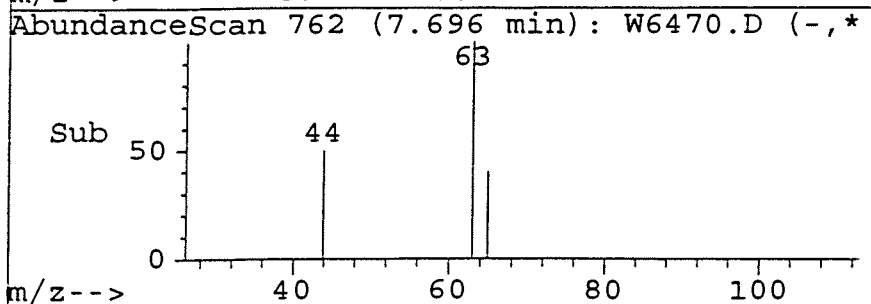


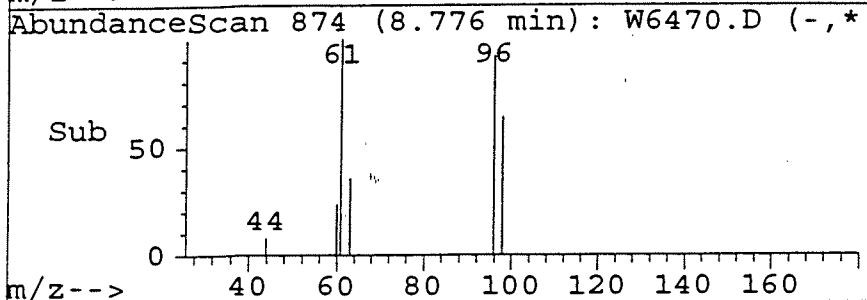
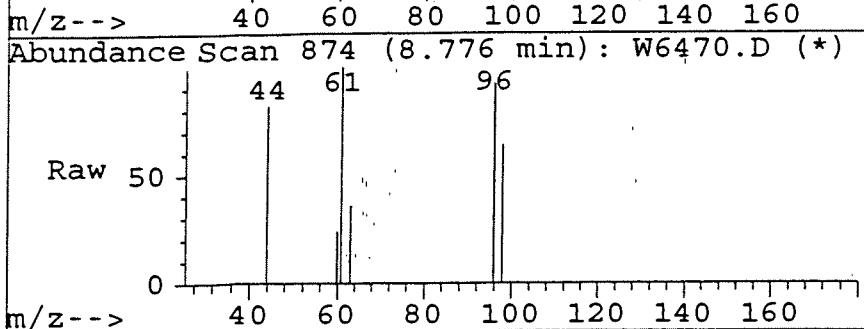
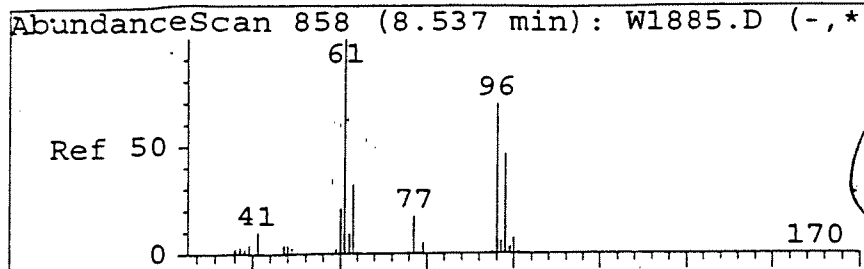
#14
1,1-Dichloroethane
Concen: 0.18 ug/l
RT: 7.70 min Scan# 762
Delta R.T. -0.15 min
Lab File: W6470.D
Acq: 17 Jul 96 4:36 am

Tgt	Ion:63	Resp:	2108
Ion	Ratio	Lower	Upper
63	100		
65	12.5	0.0	81.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0



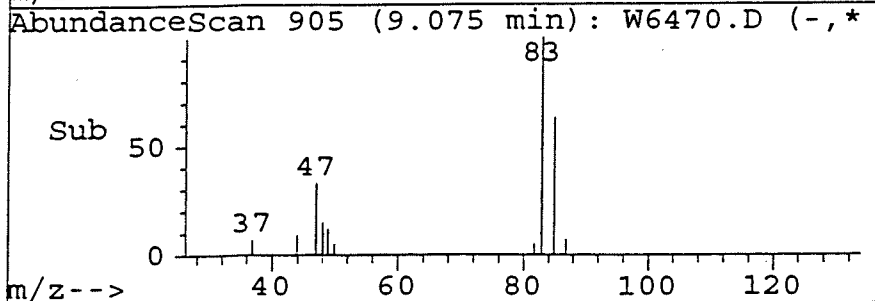
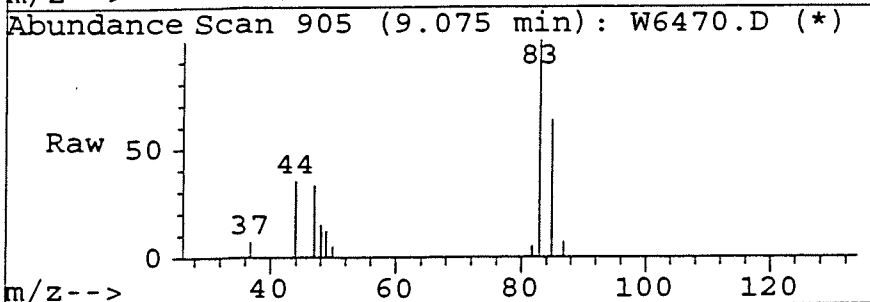
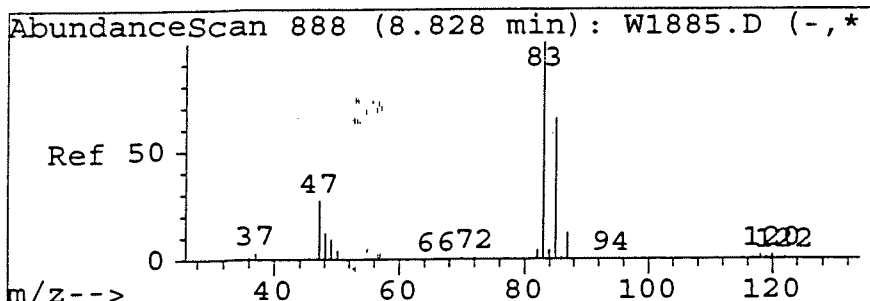
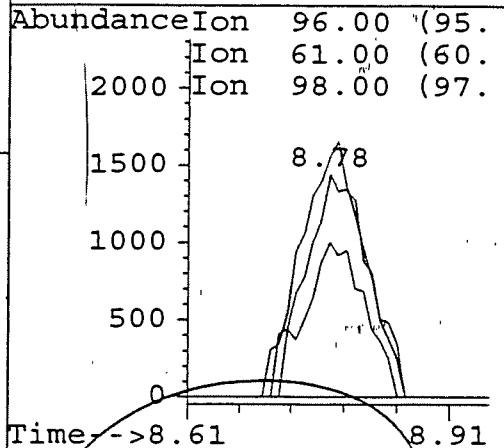
AbundanceIon	63.00 (62.
Ion	65.00 (64.





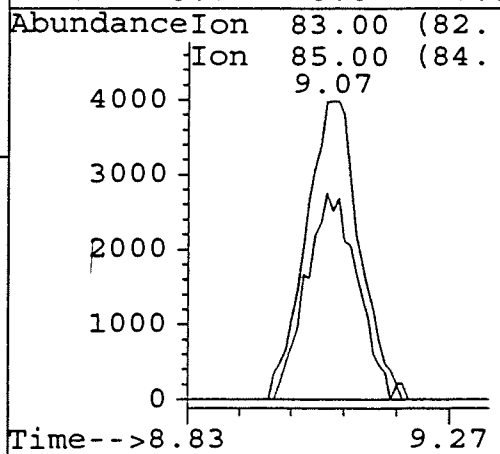
#17
1,2-Dichloroethene (cis-)
Concen: 0.77 ug/l
RT: 8.78 min Scan# 874
Delta R.T. -0.17 min
Lab File: W6470.D
Acq: 17 Jul 96 4:36 am

Tgt Ion:96	Resp:	7289
Ion Ratio	Lower	Upper
96 100		
61 117.3	84.0	184.0
98 64.7	14.7	114.7
0 0.0	0.0	0.0

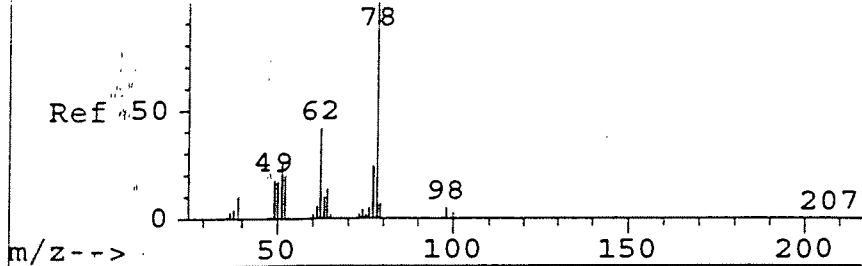


#19
Chloroform
Concen: 1.26 ug/l
RT: 9.07 min Scan# 905
Delta R.T. -0.17 min
Lab File: W6470.D
Acq: 17 Jul 96 4:36 am

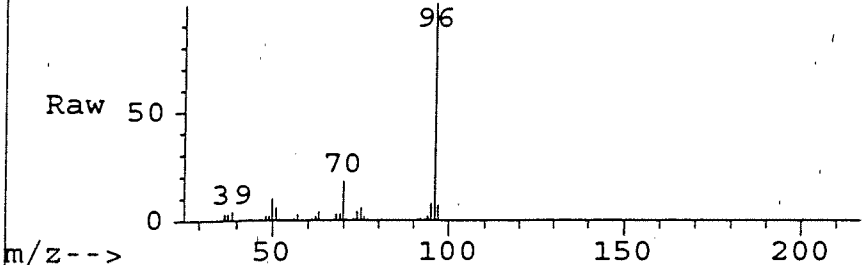
Tgt Ion:83	Resp:	24733
Ion Ratio	Lower	Upper
83 100		
85 65.9	17.3	117.3
0 0.0	0.0	0.0
0 0.0	0.0	0.0



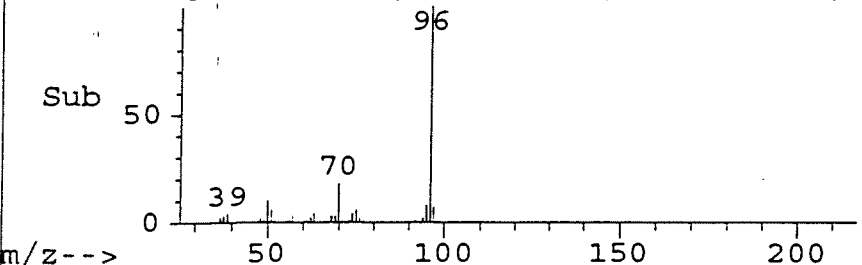
AbundanceScan 1049 (10.390 min): W1885.D (-



AbundanceScan 1114 (11.090 min): W6470.D (*)



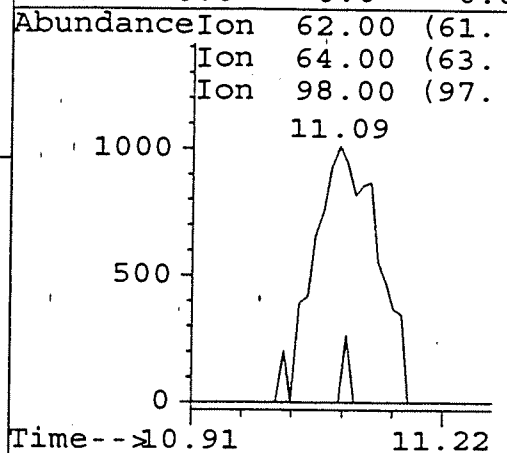
AbundanceScan 1114 (11.090 min): W6470.D (-

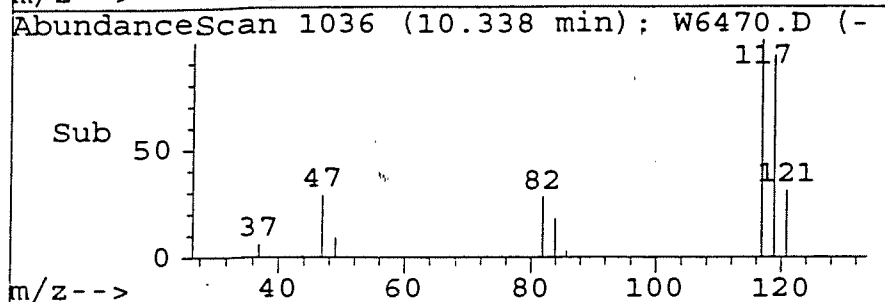
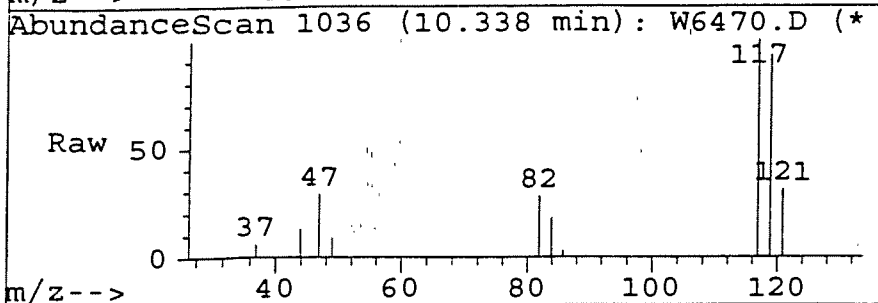
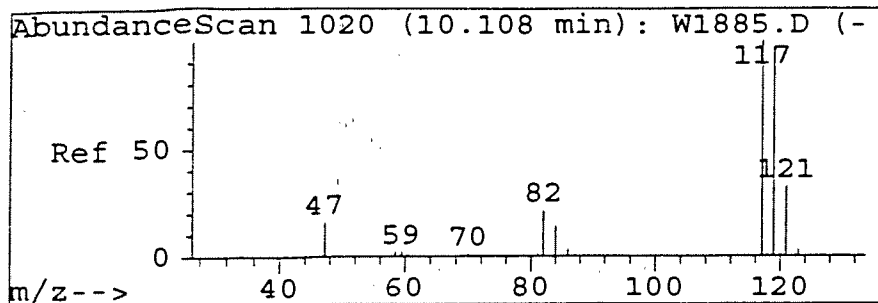


#21

1,2-Dichloroethane
 Concen: 0.62 ug/l
 RT: 11.09 min Scan# 1114
 Delta R.T: 0.25 min
 Lab File: W6470.D
 Acq: 17 Jul 96 4:36 am

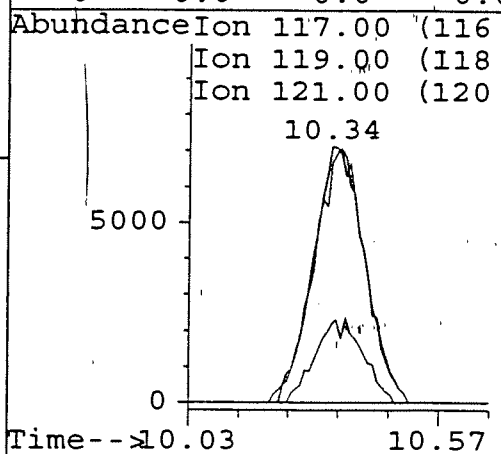
Tgt Ion:	62	Resp:	5565
Ion Ratio	Lower	Upper	
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0



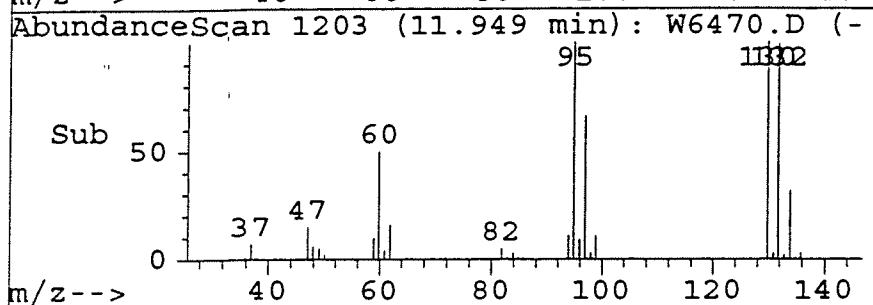
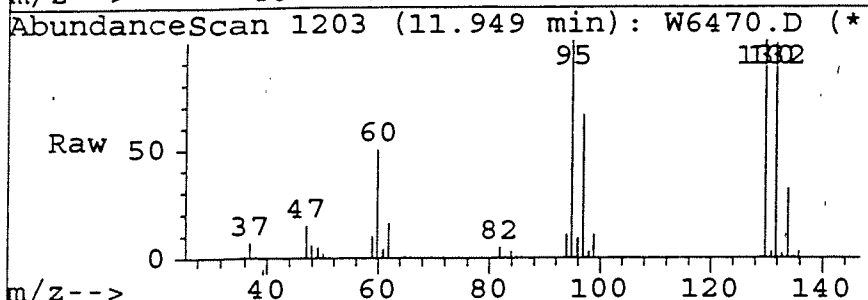
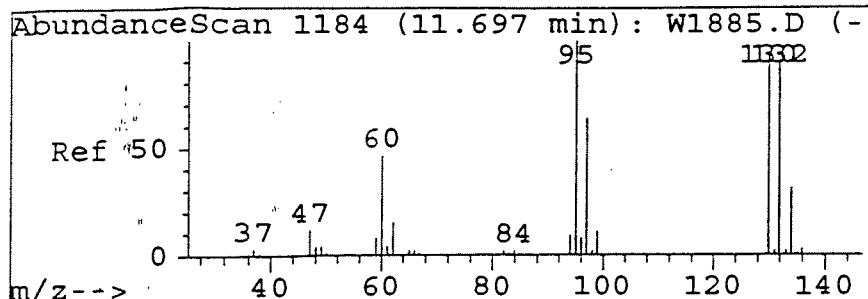


#23
 Carbon Tetrachloride
 Concen: 2.50 ug/l
 RT: 10.34 min Scan# 1036
 Delta R.T. -0.21 min
 Lab File: W6470.D
 Acq: 17 Jul 96 4:36 am

Tgt Ion:117	Resp:	55056
Ion Ratio	Lower	Upper
117	100	
119	97.1	47.3 147.3
121	30.0	0.0 82.4
0	0.0	0.0 0.0

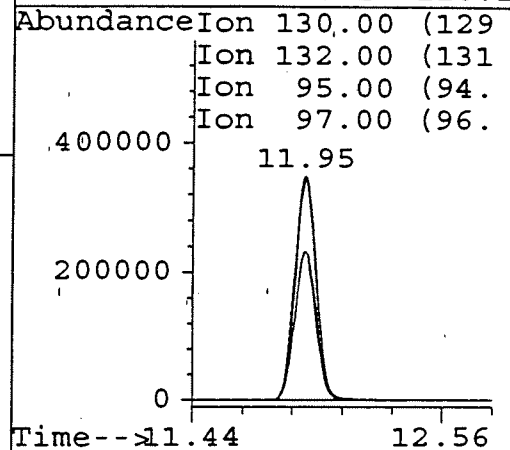


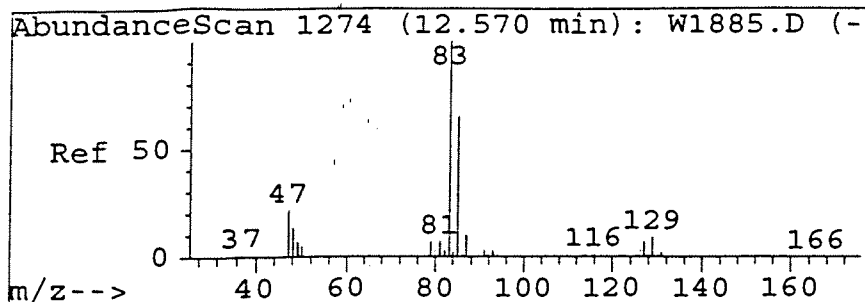
002022



#25
 Trichloroethene
 Concen: 141.15 ug/l
 RT: 11.95 min Scan# 1203
 Delta R.T. -0.20 min
 Lab File: W6470.D
 Acq: 17 Jul 96 4:36 am

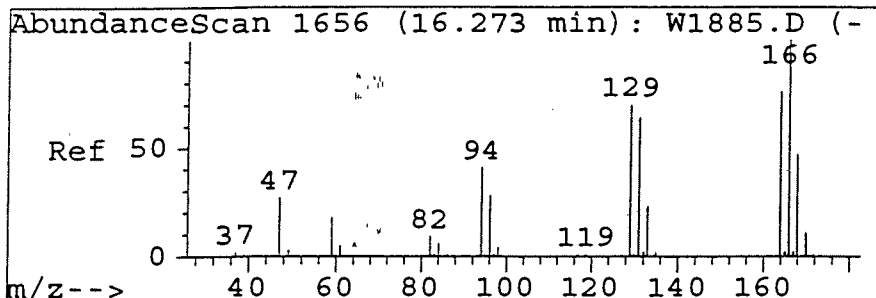
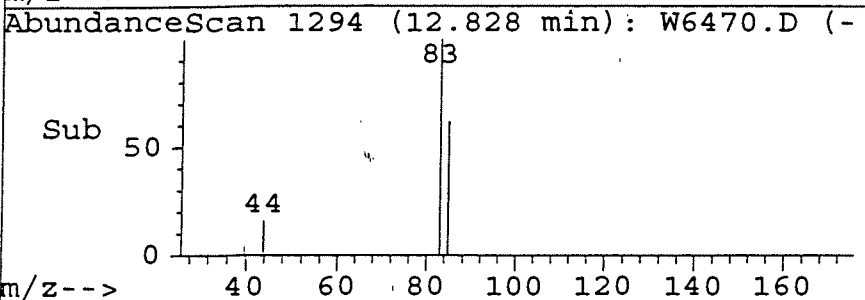
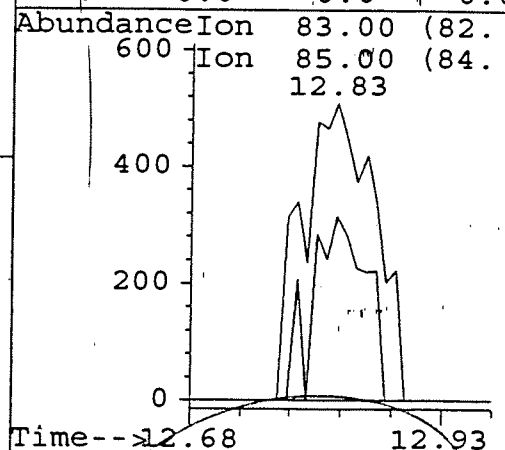
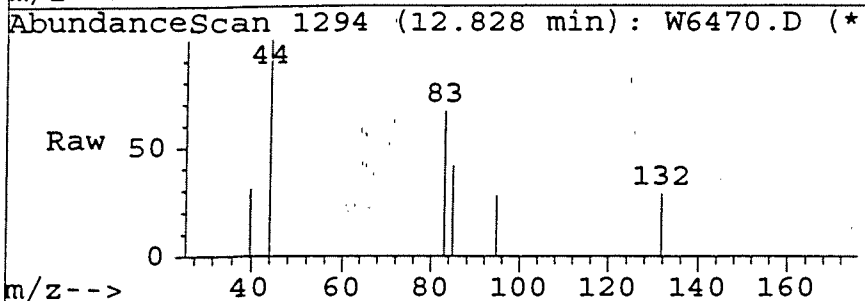
Tgt Ion: 130		Resp: 2380602	
Ion	Ratio	Lower	Upper
130	100		
132	97.2	46.4	146.4
95	98.8	54.1	154.1
97	65.6	16.2	116.2





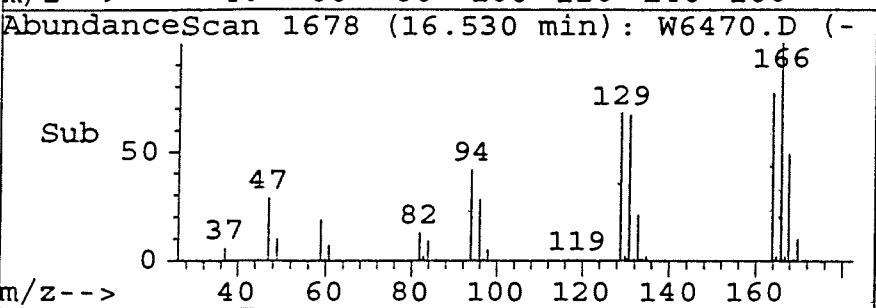
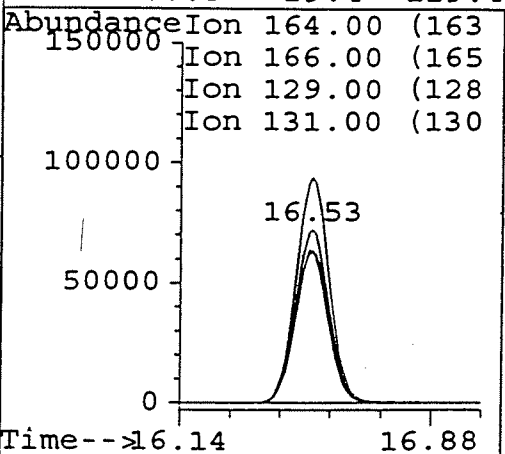
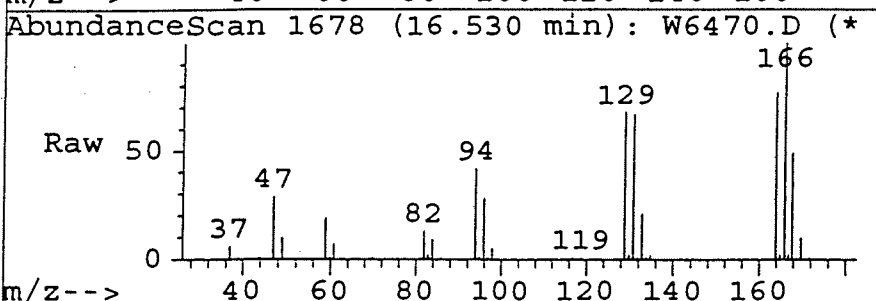
#28
Bromodichloromethane
Concen: 0.13 ug/l
RT: 12.83 min Scan# 1294
Delta R.T. -0.04 min
Lab File: W6470.D
Acq: 17 Jul 96 4:36 am

Tgt Ion:	83	Resp:	2509
Ion Ratio	Lower	Upper	
83	100		
85	46.1	14.2	114.2
0	0.0	0.0	0.0
0	0.0	0.0	0.0



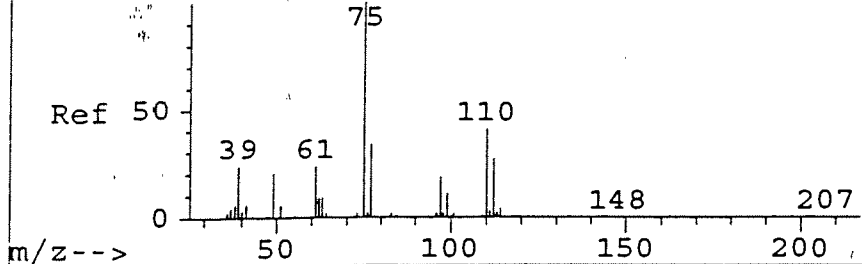
#37
Tetrachloroethene
Concen: 27.89 ug/l
RT: 16.53 min Scan# 1678
Delta R.T. -0.25 min
Lab File: W6470.D
Acq: 17 Jul 96 4:36 am

Tgt Ion:	164	Resp:	485160
Ion Ratio	Lower	Upper	
164	100		
166	129.9	81.6	181.6
129	88.7	33.6	133.6
131	86.5	29.4	129.4



002024

AbundanceScan 2174 (21.295 min): W1885.D (-



#50

1,2,3-Trichloropropane

Concen: 23.63 ug/l

RT: 21.34 min Scan# 2177

Delta R.T. -0.19 min

Lab File: W6470.D

Acq: 17 Jul 96 4:36 am

Tgt Ion:75 Resp: 106794

Ion Ratio Lower Upper

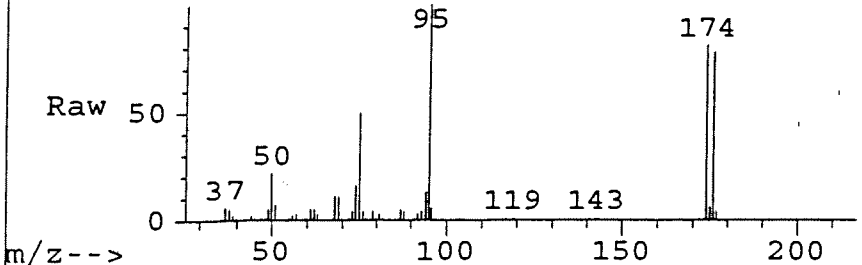
75 100

110 0.0 0.0 86.0

0 0.0 0.0 0.0

0 0.0 0.0 0.0

AbundanceScan 2177 (21.341 min): W6470.D (*)



AbundanceIon 75.00 (74.

Ion 110.00 (109

21.34

20000

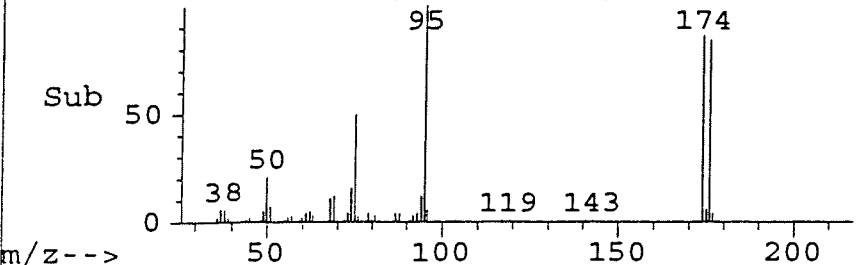
15000

10000

5000

0

AbundanceScan 2177 (21.341 min): W6470.D (-



Time-->21.12 21.59

002025

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6471.D
 Acq Time : 17 Jul 96 5:16 am
 Sample : G9607215-3(3A)/B#96421
 Misc : 25ML/GW-10/ALLIED SIGNAL /GW-8
 Quant Time: Jul 17 5:49 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Mir
1) Fluorobenzene	11.10	96	318647	10.00	ug/l	-0.02
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.80	150	184767	10.08	ug/l	100.76
47) Bromofluorobenzene	21.34	95	177503	10.27	ug/l	102.67
Target Compounds						
2) Dichlorodifluoromethane	3.21	85	4922	0.43	ug/l	#20 83
3) Chloromethane	3.22	50	534	0.15	ug/l	# 44
10) 1,1-Dichloroethene	5.81	96	27612	4.44	ug/l	4.4 98
12) Methylene Chloride	6.53	84	6435	1.42	ug/l	1.4 88
14) 1,1-Dichloroethane	7.71	63	1328	0.15	ug/l	# 43
17) 1,2-Dichloroethene (cis-)	8.78	96	15562	2.12	ug/l	2.1 85
19) Chloroform	9.06	83	28603	1.88	ug/l	1.9 98
21) 1,2-Dichloroethane	11.10	62	4176	0.60	ug/l	# 48
22) 1,1,1-Trichloroethane	9.86	97	89724	4.92	ug/l	4.9 97
23) Carbon Tetrachloride	10.36	117	94563	5.55	ug/l	5.6 100
25) Trichloroethene	11.95	130	5963143	456.72	ug/l	680 98
35) Toluene	14.87	92	5891	0.32	ug/l	<DL 99
37) Tetrachloroethene	16.52	164	104913	7.79	ug/l	7.8 96

Rem x TCE

see W6489

TCE = 680

REVIEWED & APPROVED

BY S DATE 7/19/96

BATCH # 96421
 DATE 07/17/96
 ANALYST h

002026

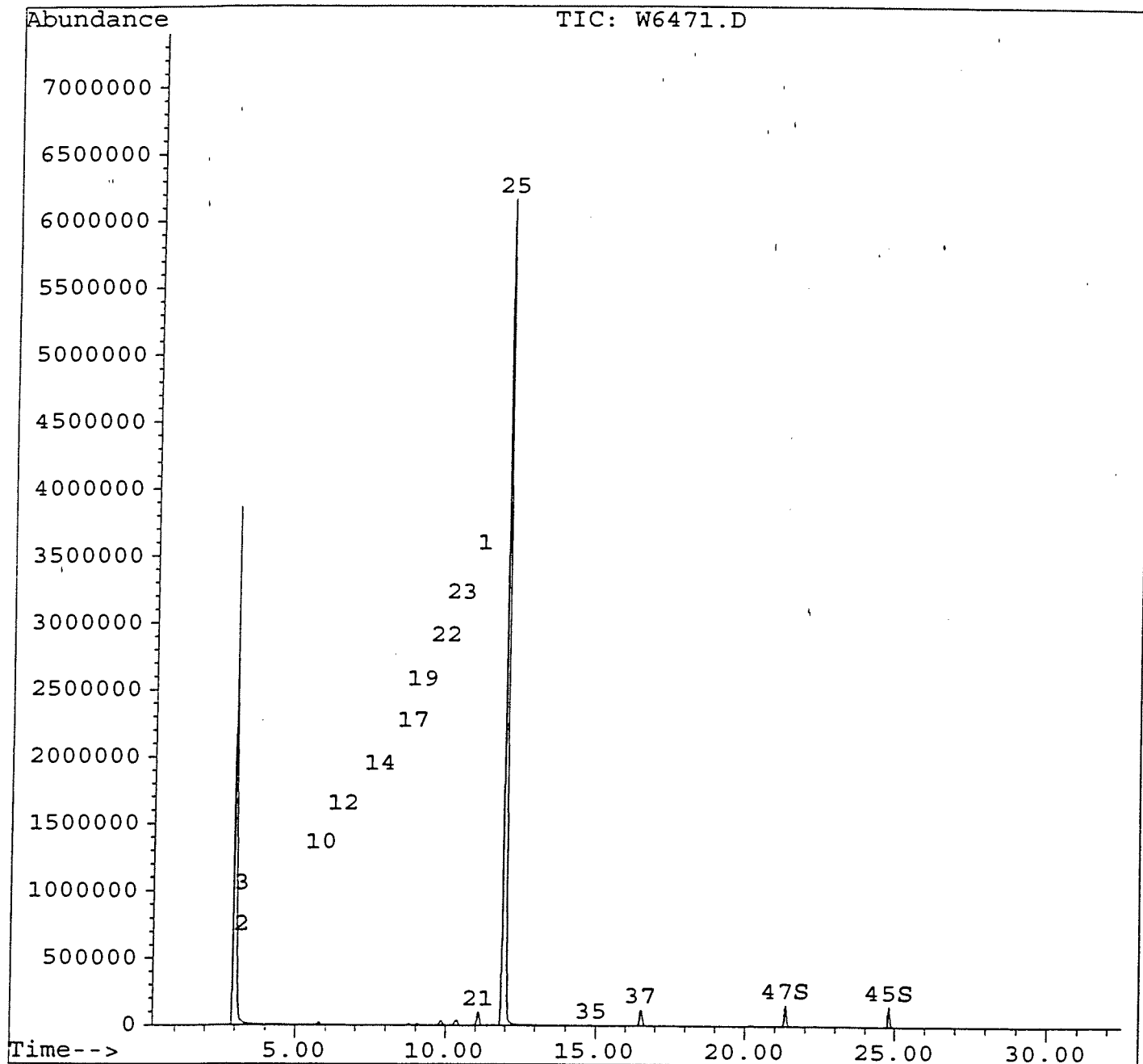
(#) = qualifier out of range (m) = manual integration

Quantitation Report

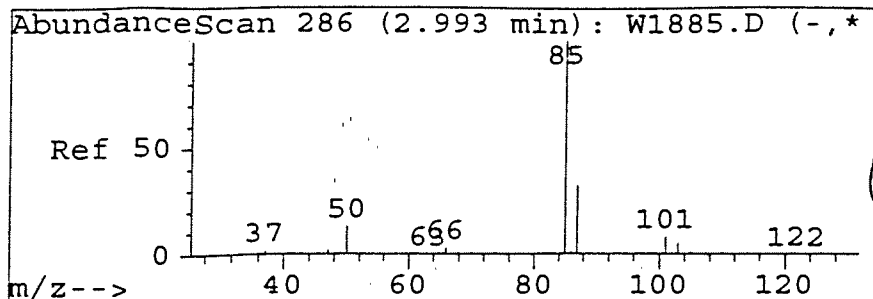
Data File : C:\HPCHEM\1\DATA\JUL16\W6471.D
Acq Time : 17 Jul 96 5:16 am
Sample : G9607215-3(3A)/B#96421
Misc : 25ML/GW-10/ALLIED SIGNAL
Quant Time: Jul 17 5:49 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96,ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

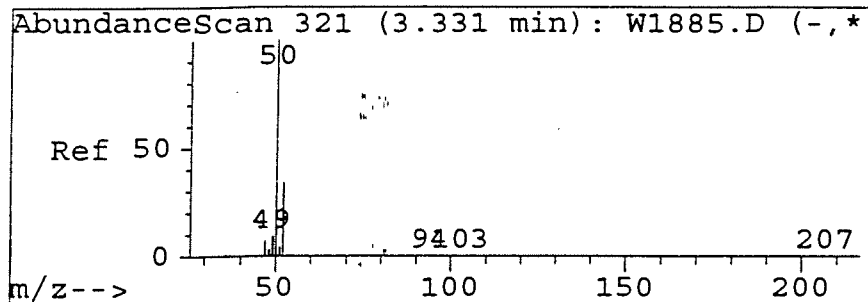
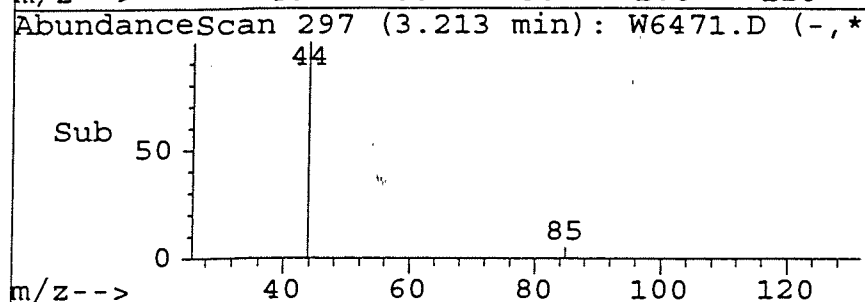
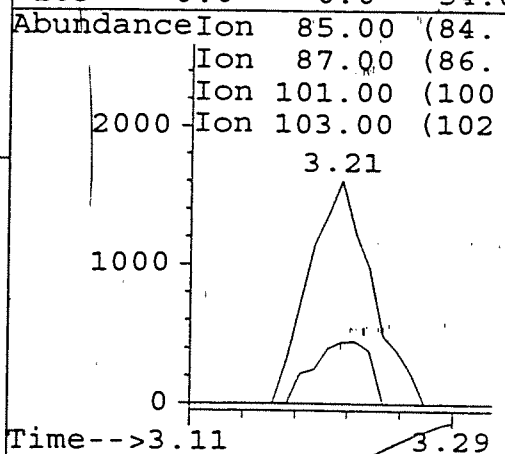
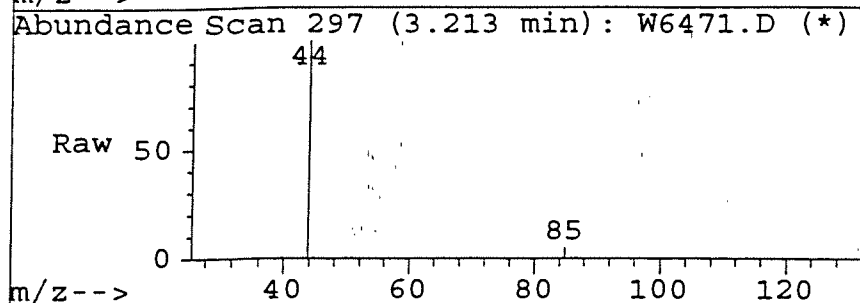


002027



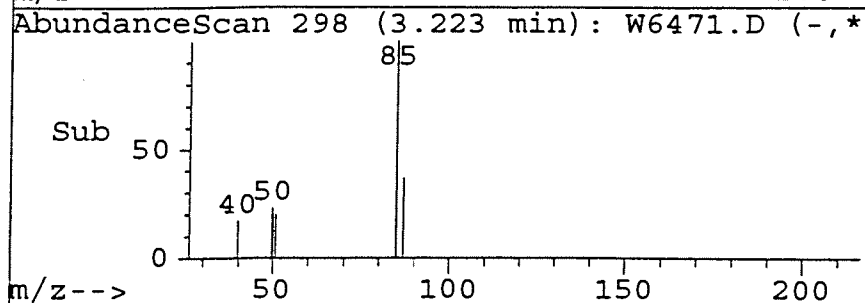
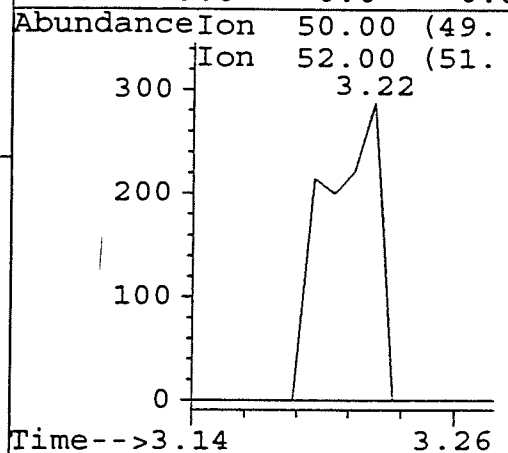
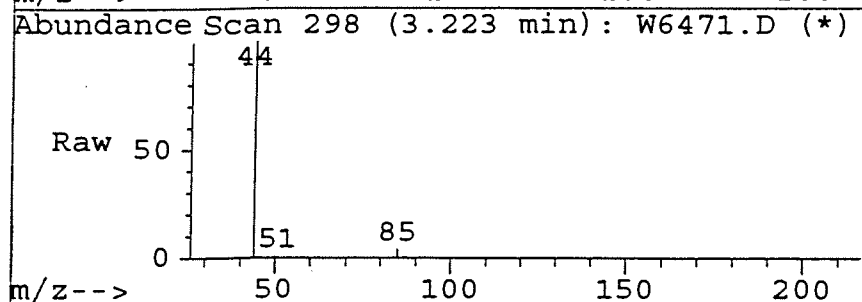
#2
 Dichlorodifluoromethane
 Concen: 0.43 ug/l
 RT: 3.21 min Scan# 297
 Delta R.T. 0.10 min
 Lab File: W6471.D
 Acq: 17 Jul 96 5:16 am

Tgt Ion:	85	Resp:	4922
Ion Ratio	Lower	Upper	
85	100		
87	25.4	0.0	84.3
101	0.0	0.0	58.1
103	0.0	0.0	54.6



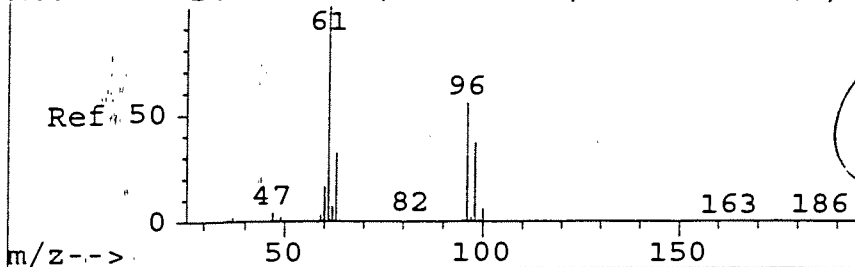
#3
 Chloromethane
 Concen: 0.15 ug/l
 RT: 3.22 min Scan# 298
 Delta R.T. -0.27 min
 Lab File: W6471.D
 Acq: 17 Jul 96 5:16 am

Tgt Ion:	50	Resp:	534
Ion Ratio	Lower	Upper	
50	100		
52	0.0	10.5	50.5#
0	0.0	0.0	0.0
0	0.0	0.0	0.0



002028

AbundanceScan 547 (5.524 min): W1885.D (-,*

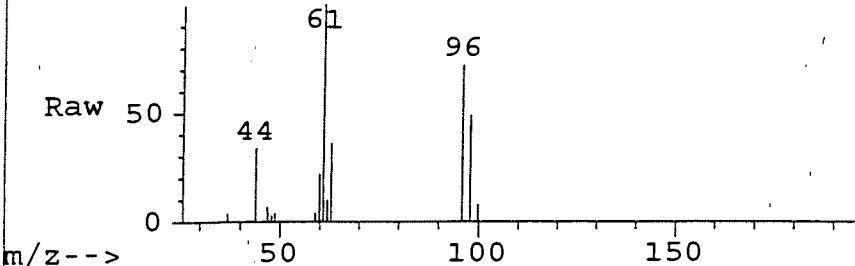


#10

1,1-Dichloroethene
Concen: 4.44 ug/l
RT: 5.81 min Scan# 566
Delta R.T. -0.02 min
Lab File: W6471.D
Acq: 17 Jul 96 5:16 am

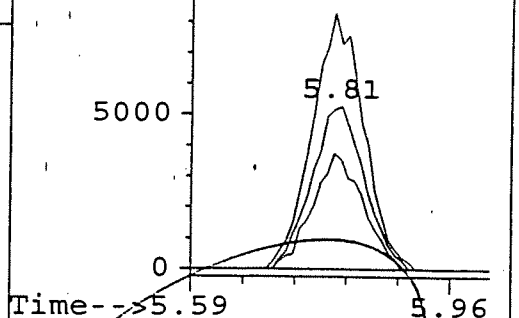
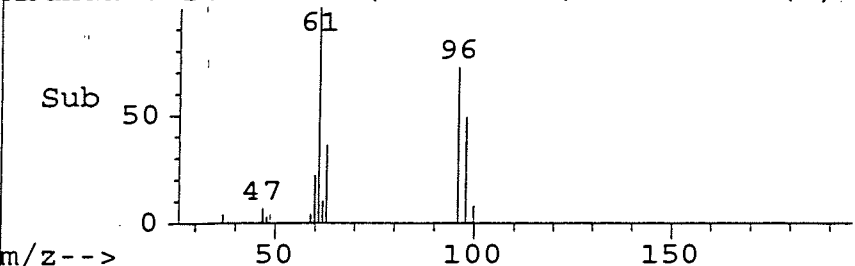
Tgt Ion:	96	Resp:	27612
Ion	Ratio	Lower	Upper
96	100		
61	153.2	102.5	202.5
98	68.0	12.4	112.4
0	0.0	0.0	0.0

Abundance Scan 566 (5.806 min): W6471.D (*)

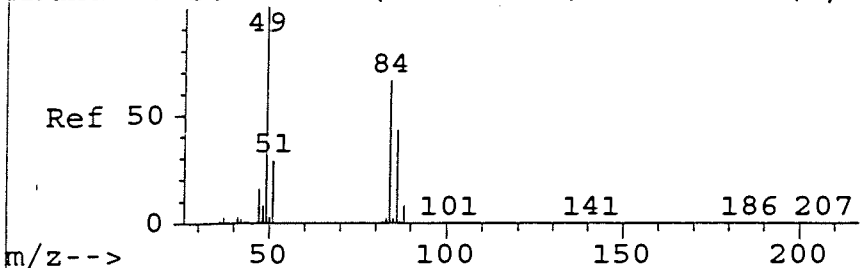


Abundance	Ion	96.00 (95.
	Ion	61.00 (60.
10000	Ion	98.00 (97.

AbundanceScan 566 (5.806 min): W6471.D (-,*



AbundanceScan 623 (6.261 min): W1885.D (-,*

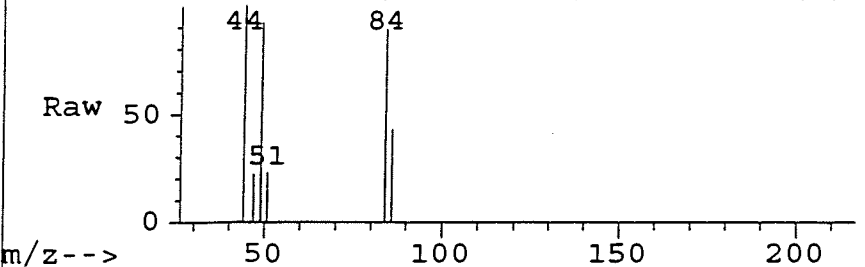


#12

Methylene Chloride
Concen: 1.42 ug/l
RT: 6.53 min Scan# 641
Delta R.T. -0.07 min
Lab File: W6471.D
Acq: 17 Jul 96 5:16 am

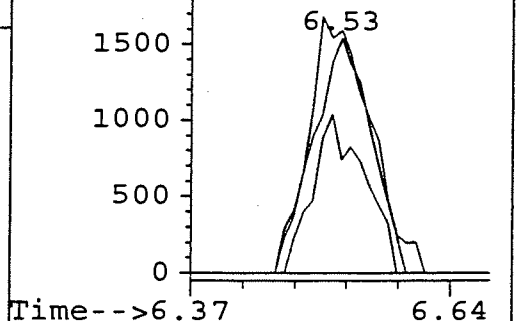
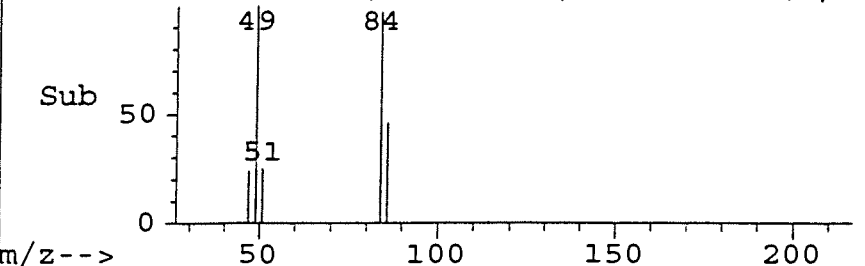
Tgt Ion:	84	Resp:	6435
Ion	Ratio	Lower	Upper
84	100		
49	116.4	41.6	221.6
86	60.0	0.0	157.2
0	0.0	0.0	0.0

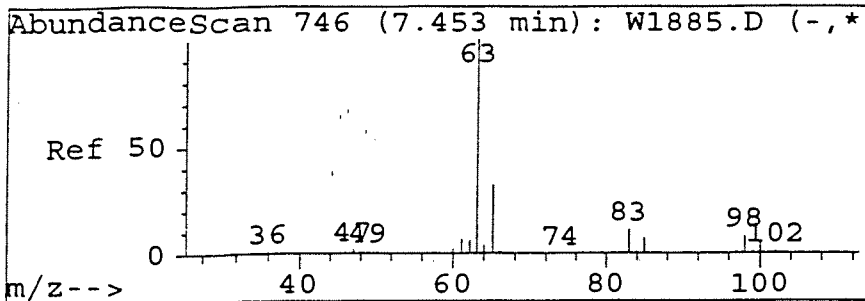
Abundance Scan 641 (6.529 min): W6471.D (*)



Abundance	Ion	84.00 (83.
	Ion	49.00 (48.
2000	Ion	86.00 (85.

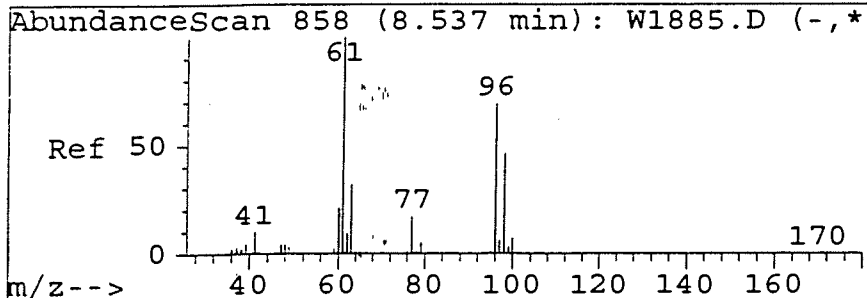
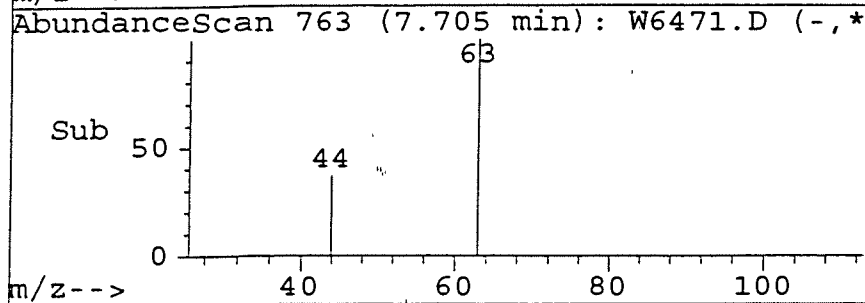
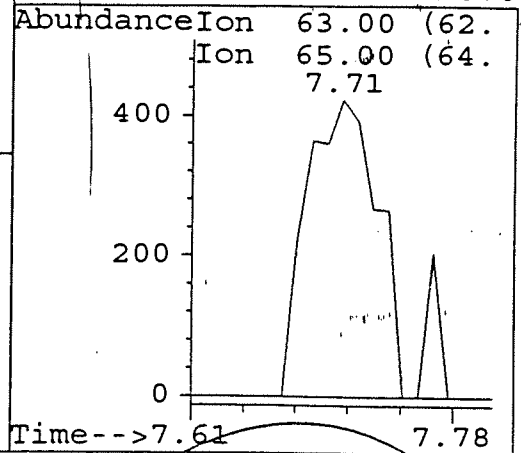
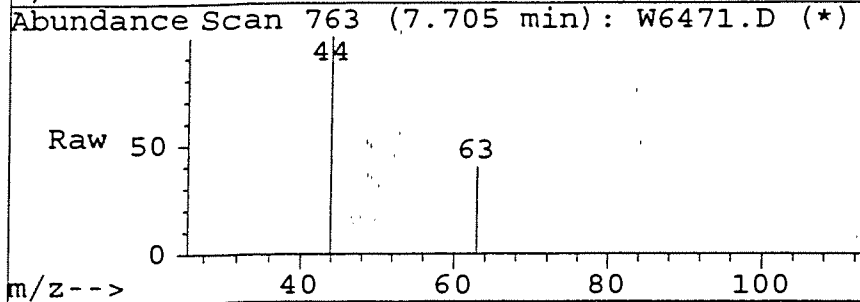
AbundanceScan 641 (6.529 min): W6471.D (-,*





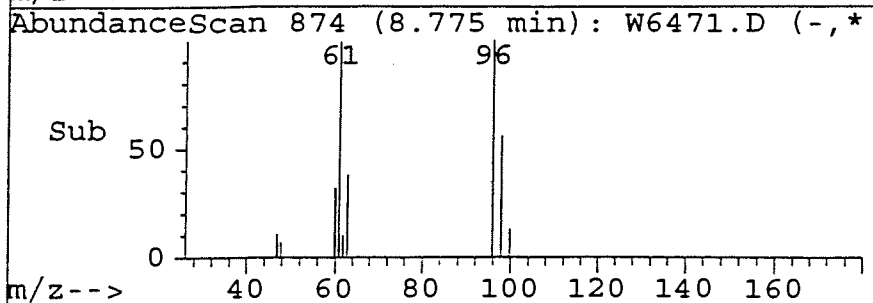
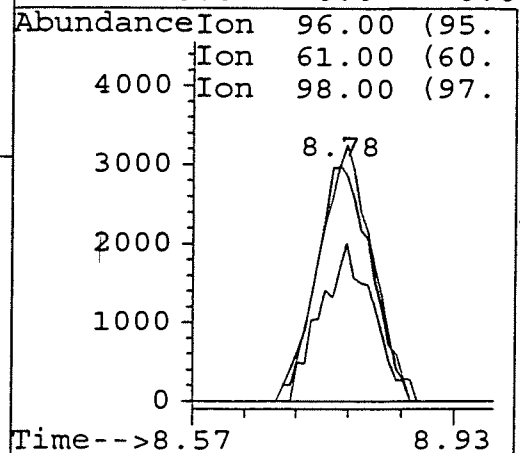
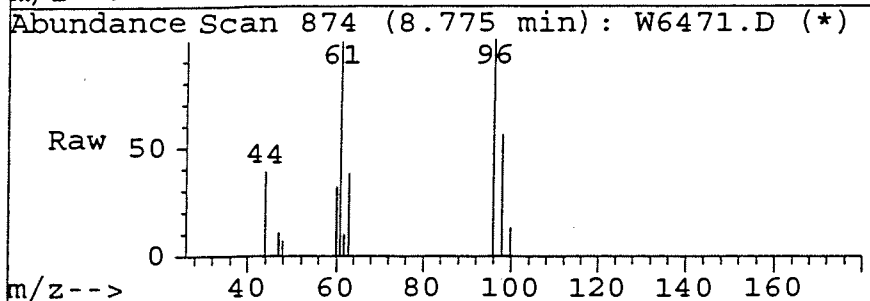
#14
1,1-Dichloroethane
Concen: 0.15 ug/l
RT: 7.71 min Scan# 763
Delta R.T. -0.14 min
Lab File: W6471.D
Acq: 17 Jul 96 5:16 am

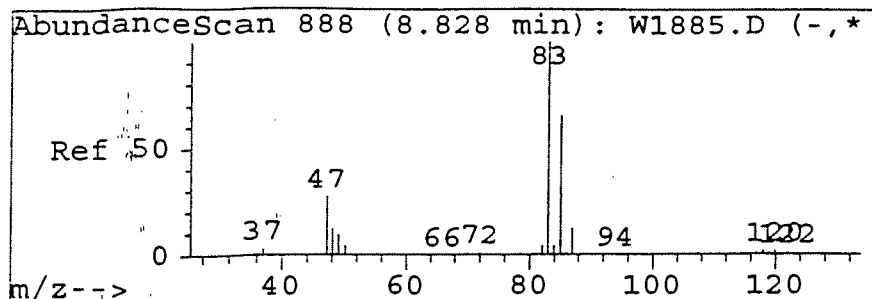
Tgt Ion:	63	Resp:	1328
Ion Ratio	Lower	Upper	
63	100		
65	0.0	0.0	81.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#17
1,2-Dichloroethene (cis-)
Concen: 2.12 ug/l
RT: 8.78 min Scan# 874
Delta R.T. -0.17 min
Lab File: W6471.D
Acq: 17 Jul 96 5:16 am

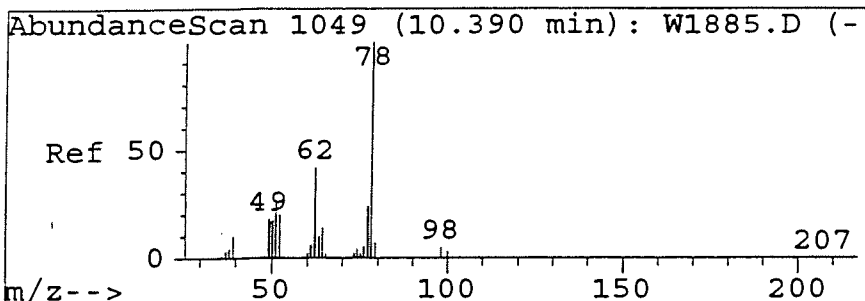
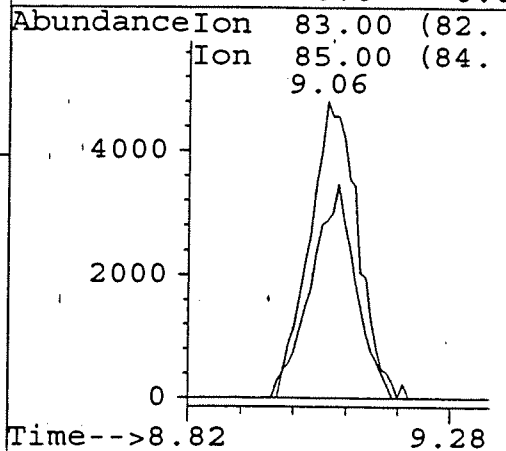
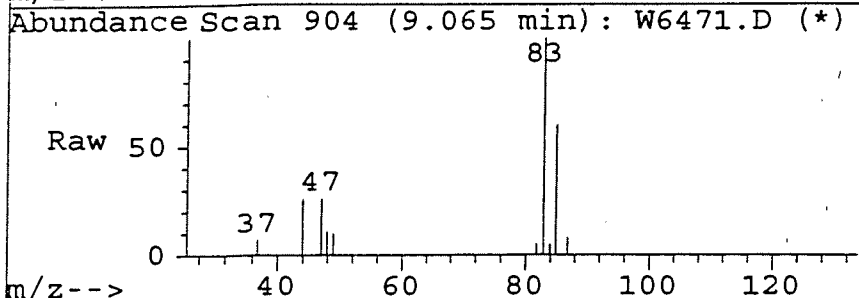
Tgt Ion:	96	Resp:	15562
Ion Ratio	Lower	Upper	
96	100		
61	108.8	84.0	184.0
98	63.7	14.7	114.7
0	0.0	0.0	0.0





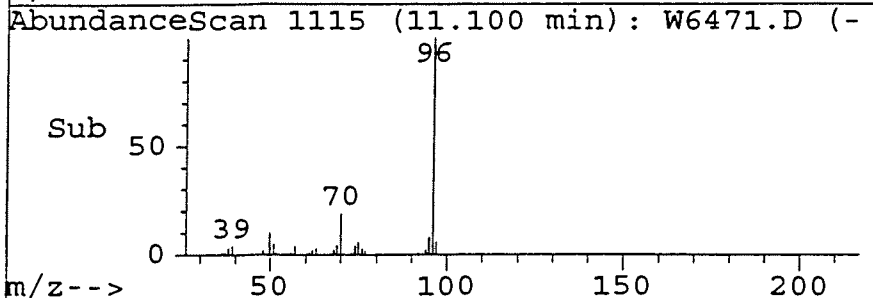
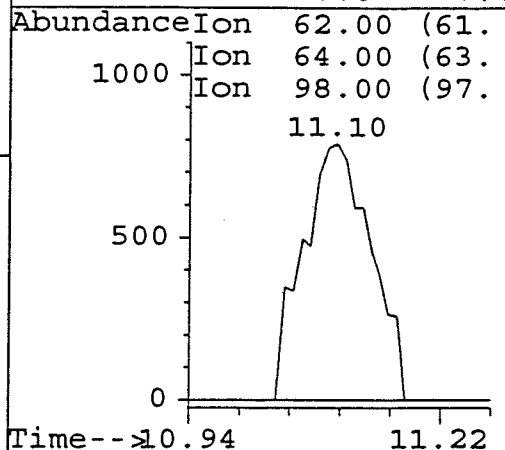
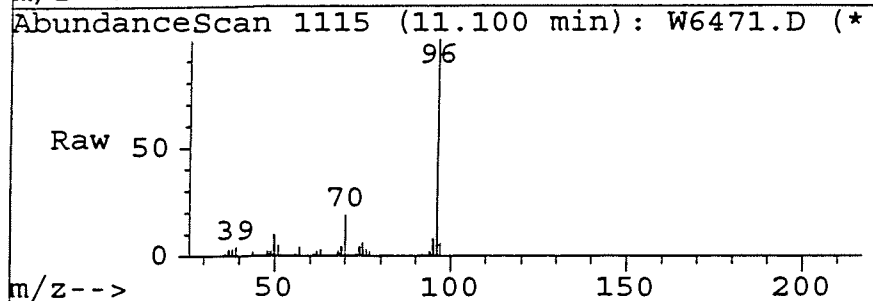
#19
Chloroform
Concen: 1.88 ug/l
RT: 9.06 min Scan# 904
Delta R.T. - 0.18 min
Lab File: W6471.D
Acq: 17 Jul 96 5:16 am

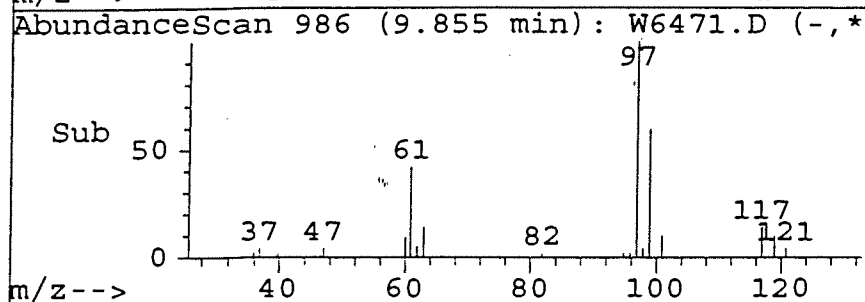
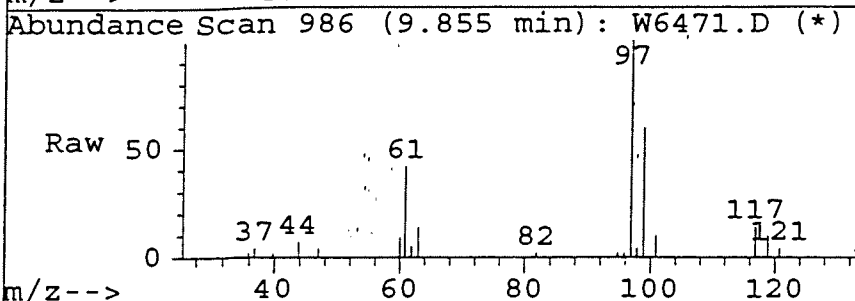
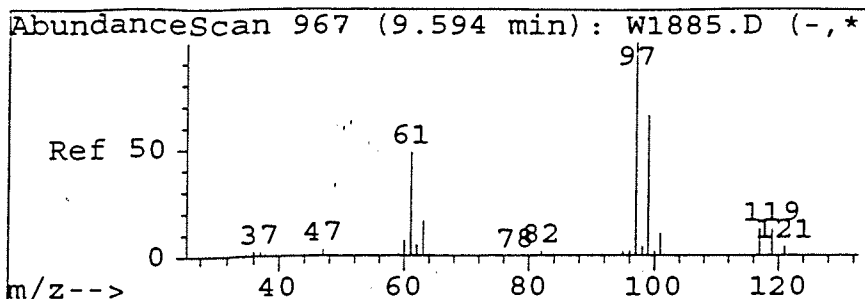
Tgt Ion:	83	Resp:	28603
Ion Ratio	Lower	Upper	
83	100		
85	65.9	17.3	117.3
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#21
1,2-Dichloroethane
Concen: 0.60 ug/l
RT: 11.10 min Scan# 1115
Delta R.T. 0.26 min
Lab File: W6471.D
Acq: 17 Jul 96 5:16 am

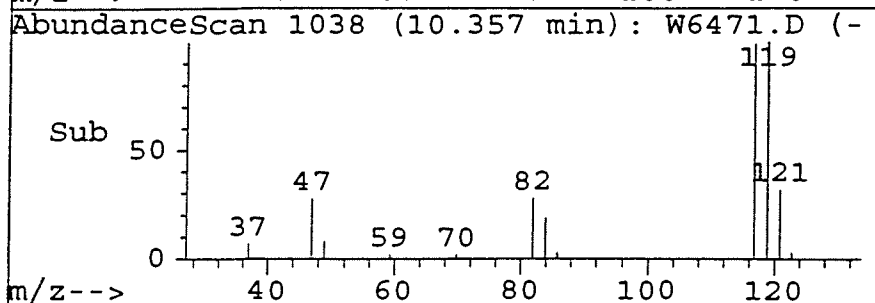
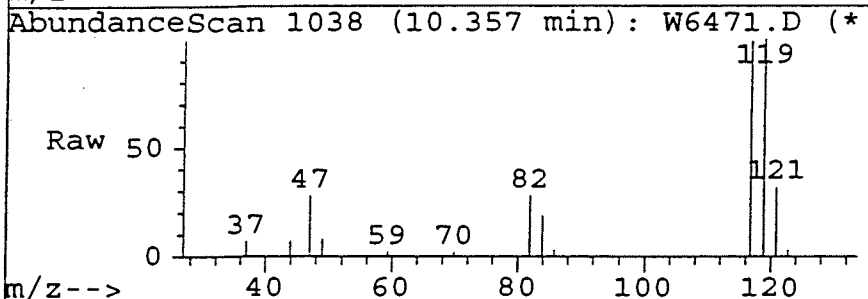
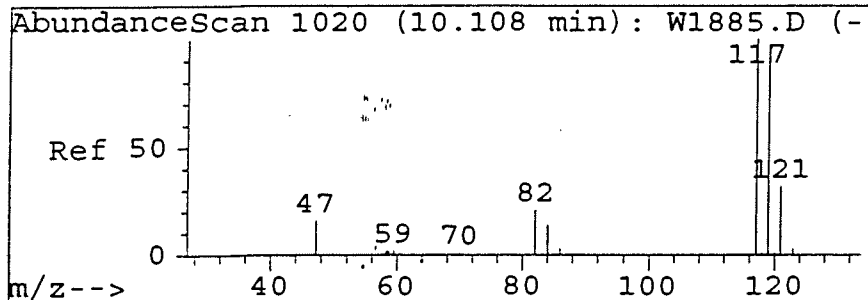
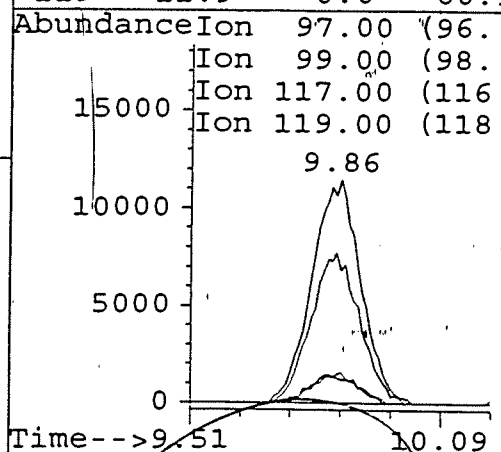
Tgt Ion:	62	Resp:	4176
Ion Ratio	Lower	Upper	
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0





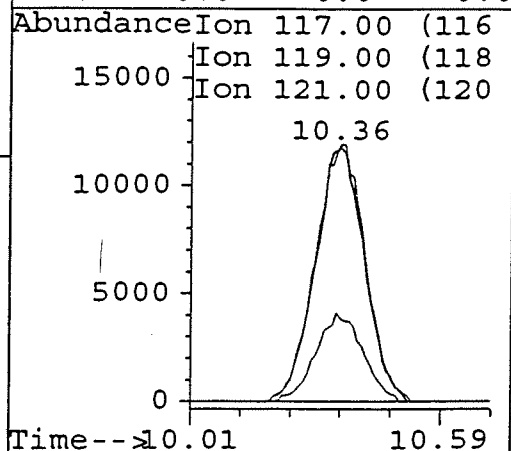
#22
1,1,1-Trichloroethane
Concen: 4.92 ug/l
RT: 9.86 min Scan# 986
Delta R.T. -0.17 min
Lab File: W6471.D
Acq: 17 Jul 96 5:16 am

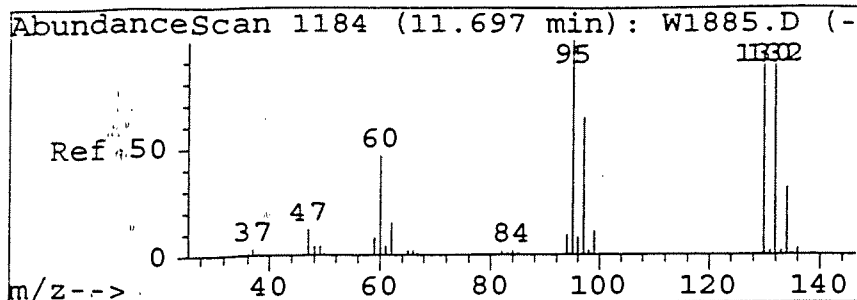
Tgt Ion: 97 Resp: 89724
Ion Ratio Lower Upper
97 100
99 66.8 18.2 118.2
117 12.8 0.0 57.5
119 11.9 0.0 60.9



#23
Carbon Tetrachloride
Concen: 5.55 ug/l
RT: 10.36 min Scan# 1038
Delta R.T. -0.19/min
Lab File: W6471.D
Acq: 17 Jul 96 5:16 am

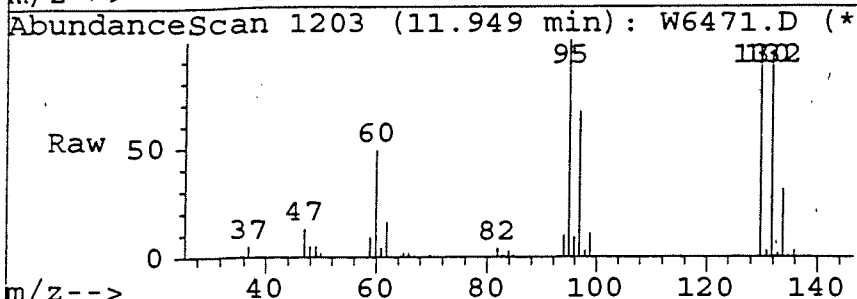
Tgt Ion: 117 Resp: 94563
Ion Ratio Lower Upper
117 100
119 97.9 47.3 147.3
121 32.5 0.0 82.4
0 0.0 0.0 0.0



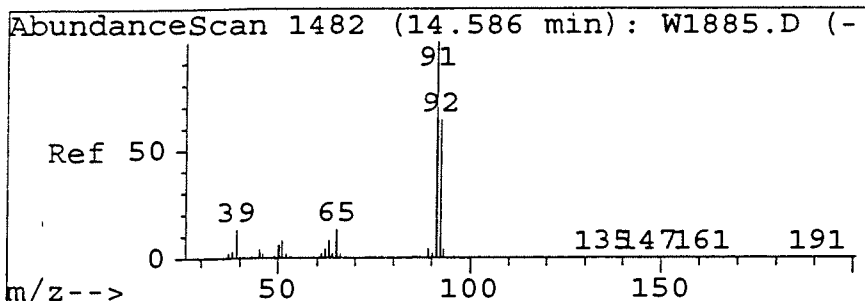
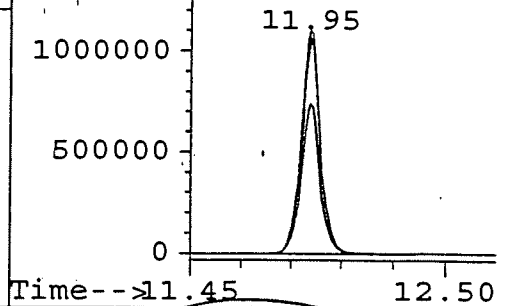
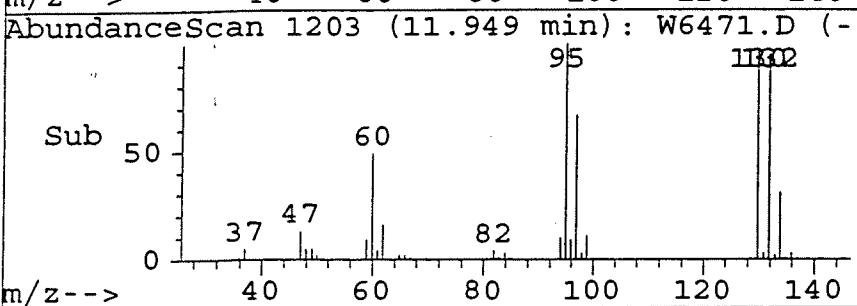


#25
 Trichloroethene
 Concen: 456.72 ug/l
 RT: 11.95 min Scan# 1203
 Delta R.T. -0.20 min
 Lab File: W6471.D
 Acq: 17 Jul 96 5:16 am

Tgt Ion:	130	Resp:	5963143
Ion	Ratio	Lower	Upper
130	100		
132	97.6	46.4	146.4
95	102.4	54.1	154.1
97	68.4	16.2	116.2

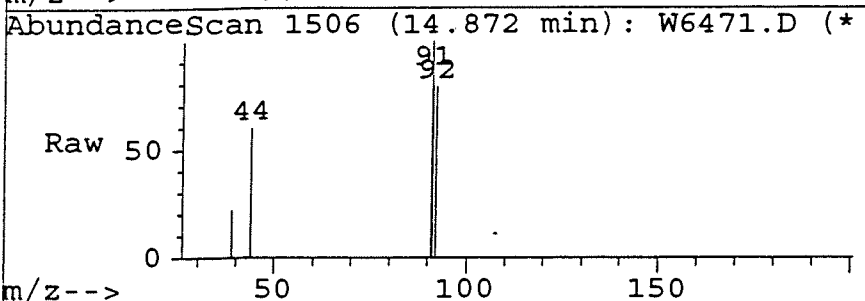


Abundance	Ion	130.00	(129
	Ion	132.00	(131
1500000	Ion	95.00	(94.
	Ion	97.00	(96.

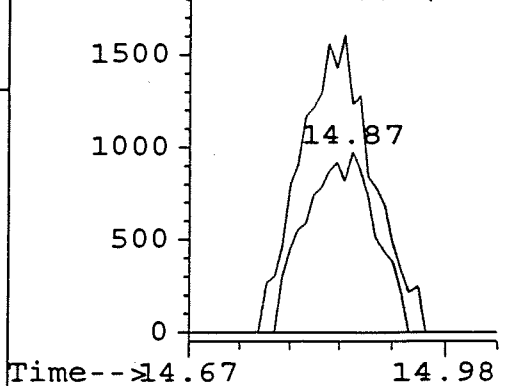
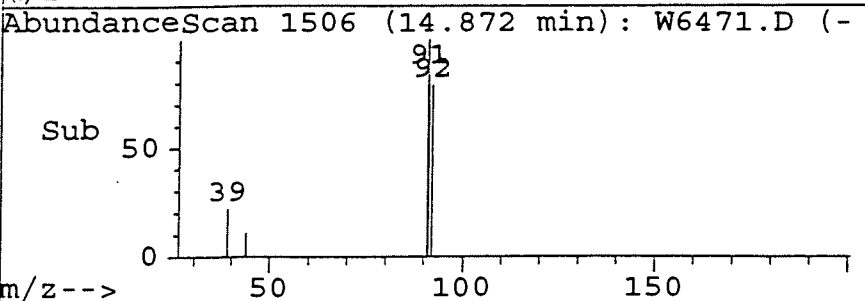


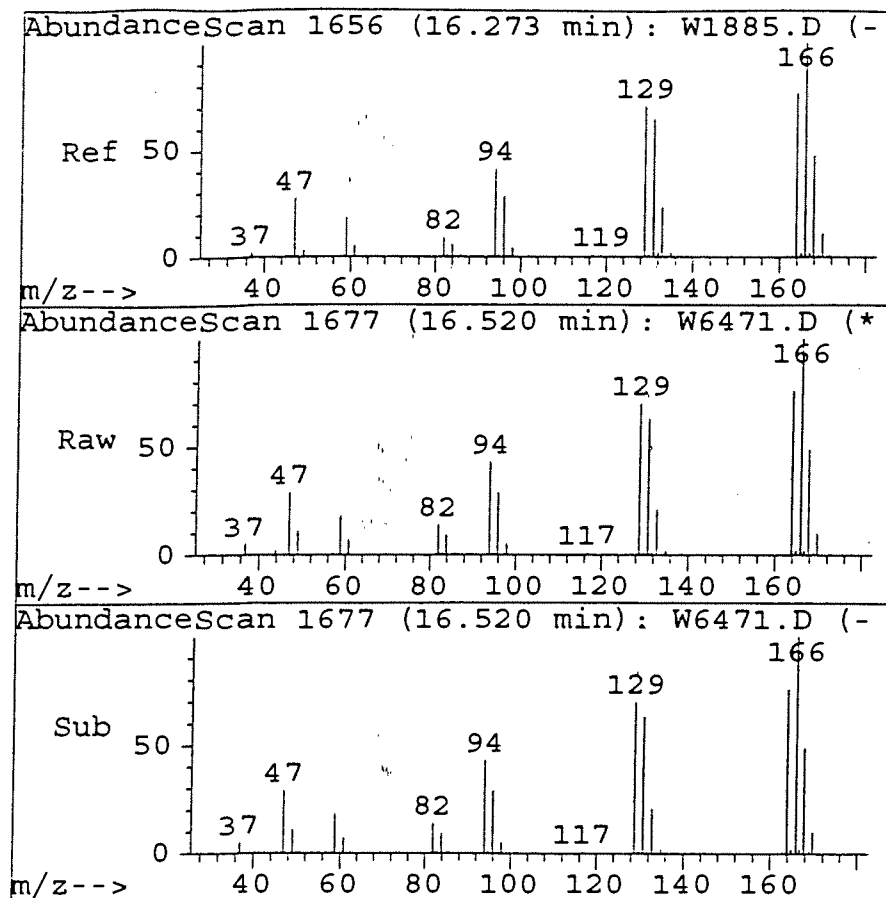
#35
 Toluene
 Concen: 0.32 ug/l
 RT: 14.87 min Scan# 1506
 Delta R.T. -0.26 min
 Lab File: W6471.D
 Acq: 17 Jul 96 5:16 am

Tgt Ion:	92	Resp:	5891
Ion	Ratio	Lower	Upper
92	100		
91	168.6	117.6	217.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0



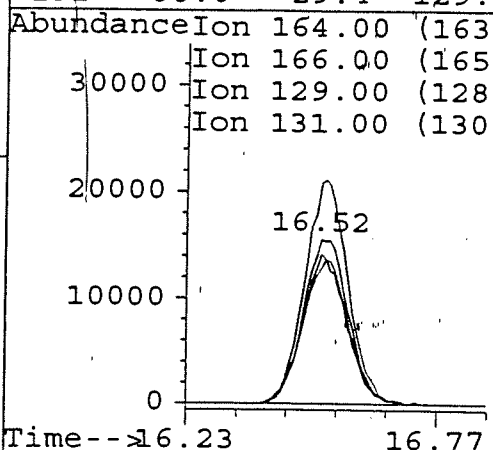
Abundance	Ion	92.00	(91.
	Ion	91.00	(90.





#37
 Tetrachloroethene
 Concen: 7.79 ug/l
 RT: 16.52 min Scan# 1677
 Delta R.T. -0.26 min
 Lab File: W6471.D
 Acq: 17 Jul 96 5:16 am

Tgt Ion	Ratio	Lower	Upper
164	100		
166	131.0	81.6	181.6
129	88.3	33.6	133.6
131	86.0	29.4	129.4



002034

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6472.D
Acq Time : 17 Jul 96 5:56 am
Sample : G9607215-4 (1A)/B#96421
Misc : 25ML/RIELD BLK/ALLIED SIGNAL
Quant Time: Jul 17 6:29 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Mir
1) Fluorobenzene	11.12	96	346415	10.00	ug/l	0.00

System Monitoring Compounds					%Recovery
45) 1,2-Dichlorobenzene-d4	24.80	150	194649	9.76	ug/l 97.64
47) Bromofluorobenzene	21.34	95	190745	10.15	ug/l 101.49

Target Compounds					Ovalue
2) Dichlorodifluoromethane	3.20	85	3998	0.32	ug/l # 80
8) Trichlorofluoromethane	4.88	101	1703	0.10	ug/l # 66
9) Acetone	5.60	43	248	0.84	ug/l # 100
10) 1,1-Dichloroethene	5.81	96	361392	53.44	ug/l 53.98
12) Methylene Chloride	6.53	84	12230	2.49	ug/l 2.590
13) 1,2-Dichloroethene (trans-	7.01	96	37466	5.59	ug/l 5.694
14) 1,1-Dichloroethane	7.71	63	84814	8.60	ug/l 8.697
17) 1,2-Dichloroethene (cis-)	8.79	96	1076904	134.81	ug/l 123087
19) Chloroform	9.09	83	1371394	82.99	ug/l 15099
21) 1,2-Dichloroethane	10.66	62	11027	1.47	ug/l 1.597
22) 1,1,1-Trichloroethane	9.86	97	1764187	89.07	ug/l 8996
23) Carbon Tetrachloride	10.37	117	153924	8.31	ug/l 8.398
24) Benzene	10.70	78	75344	2.83	ug/l 2.8100
25) Trichloroethene	11.96	130	37459670	2639.10	ug/l 11007
35) Toluene	14.86	92	5734	0.29	ug/l <DL 98
36) 1,1,2-Trichloroethane	15.69	97	27197	4.50	ug/l 4.581
37) Tetrachloroethene	16.54	164	1188627	81.20	ug/l 8197
50) 1,2,3-Trichloropropane	21.34	75	77386	20.35	ug/l # 39
59) 1,4-Dichlorobenzene	24.11	146	3032	0.13	ug/l # 90
61) 1,2-Dichlorobenzene	24.86	146	1843	0.10	ug/l # 50

~~1,1-DCE~~

~~1,1,1-TCA~~

~~TCE~~

~~PCE~~

see W 6694 7/23 for TCE

#10, #22, #37 report per L.G.
over calibration range

see W 6488 for 7/7

CIS-1,2-DCE

CHL3

BATCH #

DATE

ANALYST

REVIEWED & APPROVED

BY

DATE

002035

(#) = qualifier out of range (m) = manual integration

W6472.D 524JLS.M

Thu Jul 18 14:44:42 1996

VOA3

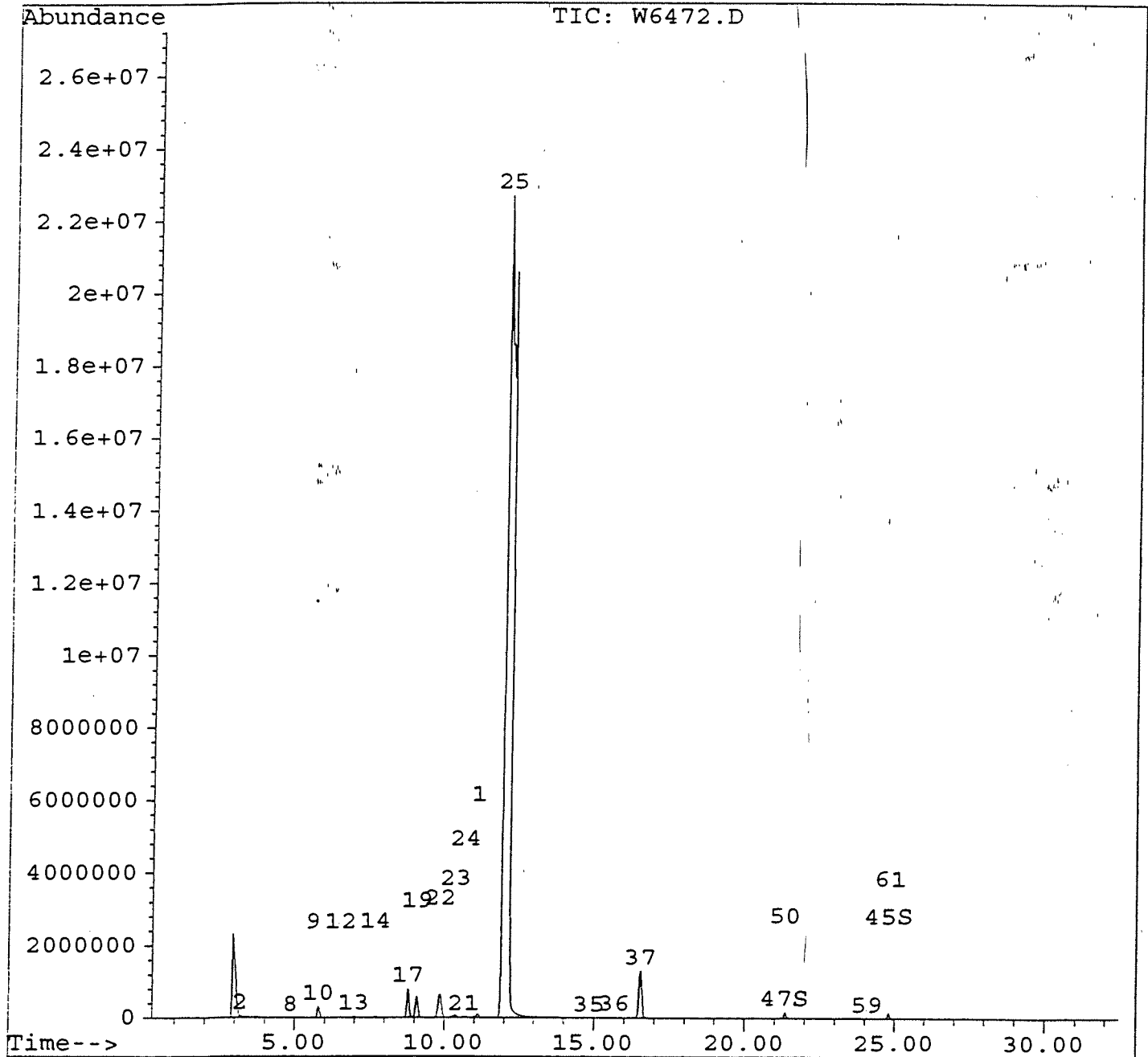
Page 1

Quantitation Report

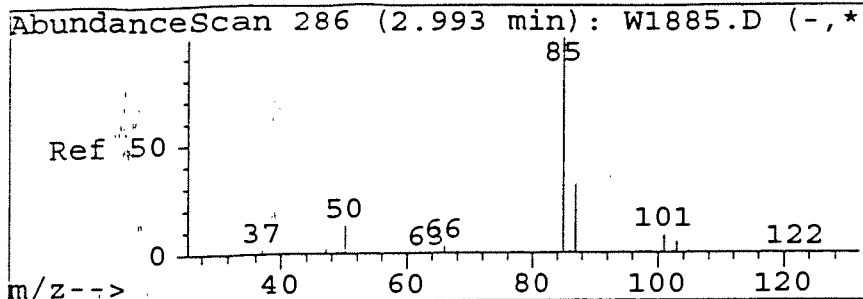
Data File : C:\HPCHEM\1\DATA\JUL16\W6472.D
Acq Time : 17 Jul 96 5:56 am
Sample : G9607215-4(1A)/B#96421
Misc : 25ML/FIELD BLK/ALLIED SIGNAL
Quant Time: Jul 17 6:29 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

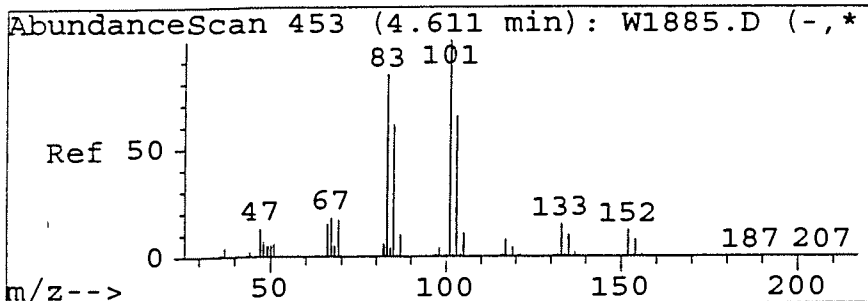
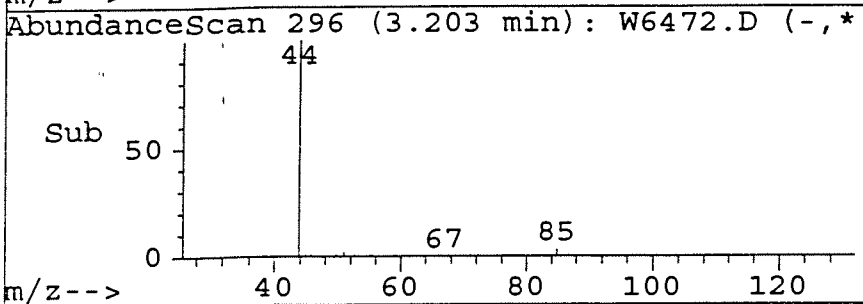
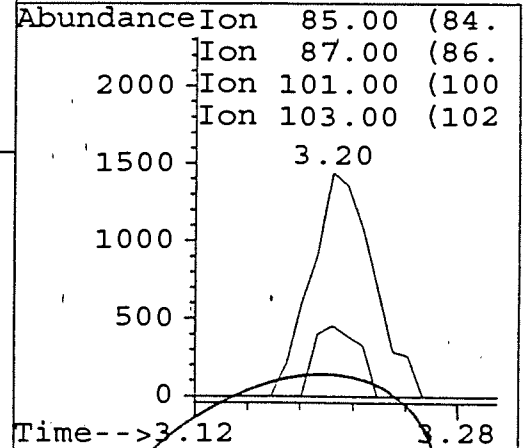
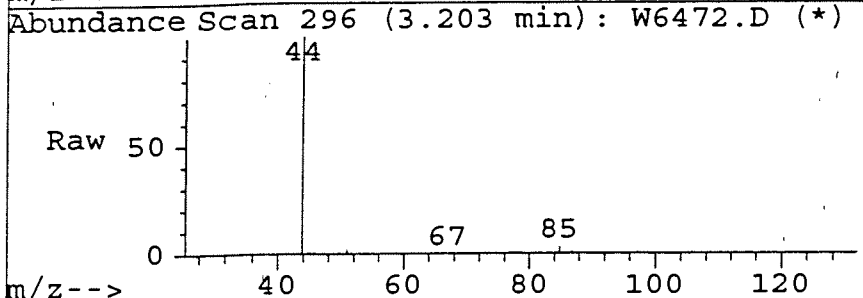


002036



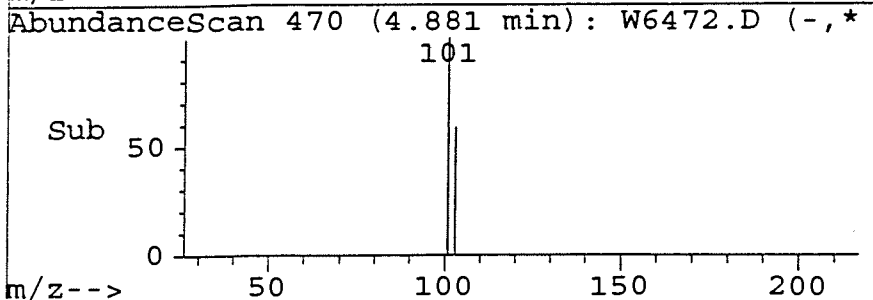
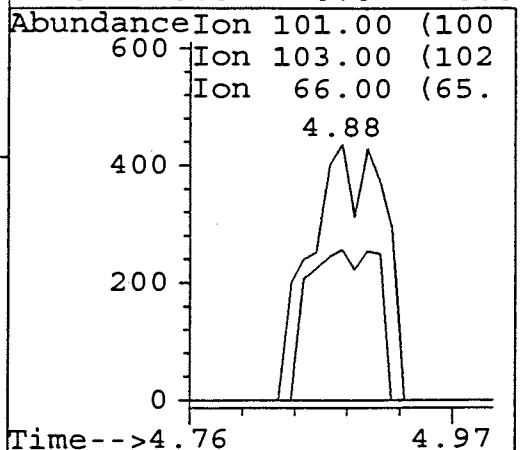
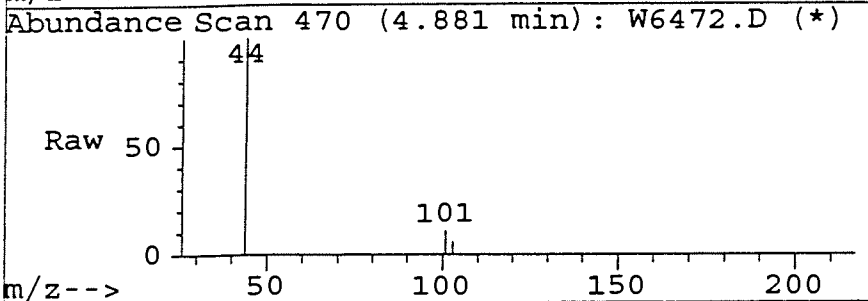
#2
Dichlorodifluoromethane
Concen: 0.32 ug/l
RT: 3.20 min Scan# 296
Delta R.T. - 0.09 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion: 85	Resp:	3998
Ion Ratio	Lower	Upper
85 100		
87 23.0	0.0	84.3
101 0.0	0.0	58.1
103 0.0	0.0	54.6

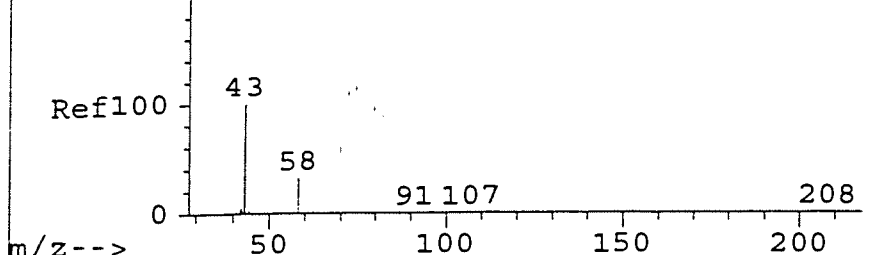


#8
Trichlorofluoromethane
Concen: 0.10 ug/l
RT: 4.88 min Scan# 470
Delta R.T. 0.01 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion:101	Resp:	1703
Ion Ratio	Lower	Upper
101 100		
103 39.3	15.6	115.6
66 0.0	0.0	65.8
0 0.0	0.0	0.0



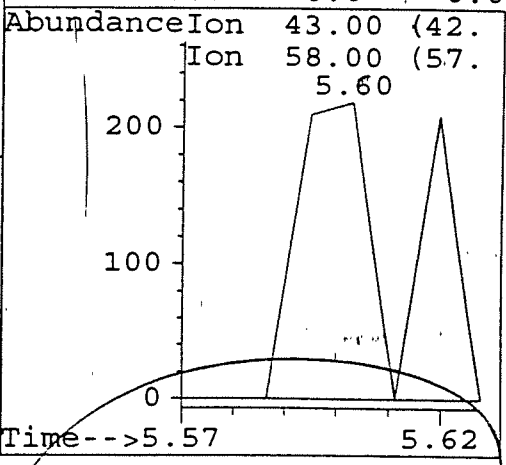
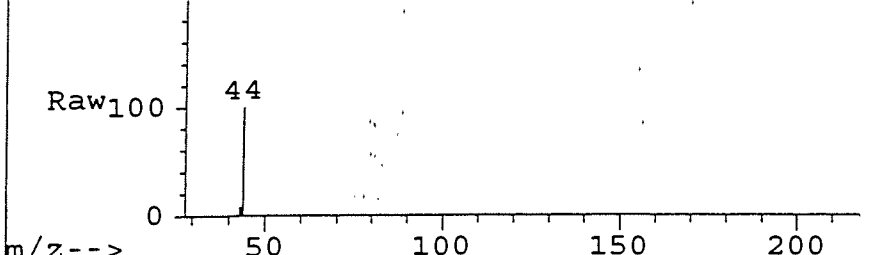
AbundanceScan 527 (5.329 min): W1885.D (-,*



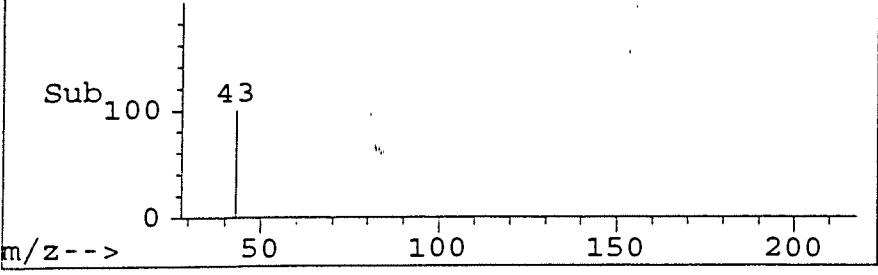
#9
Acetone
Concen: 0.84 ug/l
RT: 5.60 min Scan# 545
Delta R.T. -0.03 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion:43	Resp:	248
Ion Ratio	Lower	Upper
43	100	
58	0.0	50.0
0	0.0	0.0
0	0.0	0.0

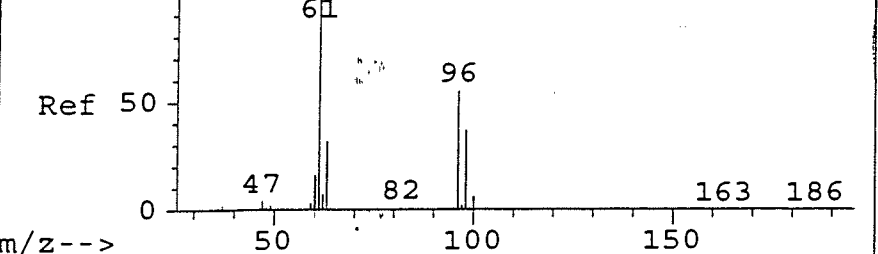
Abundance Scan 545 (5.604 min): W6472.D (*)



AbundanceScan 545 (5.604 min): W6472.D (-,*



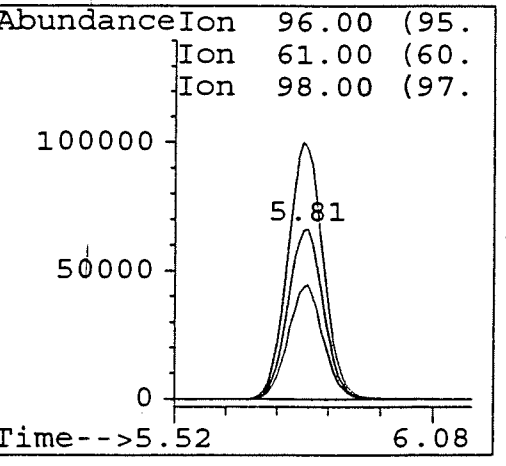
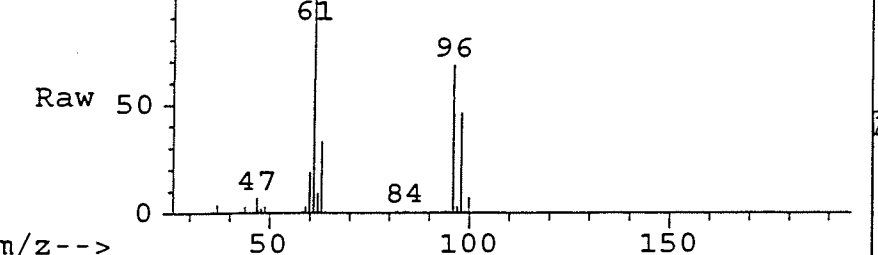
AbundanceScan 547 (5.524 min): W1885.D (-,*



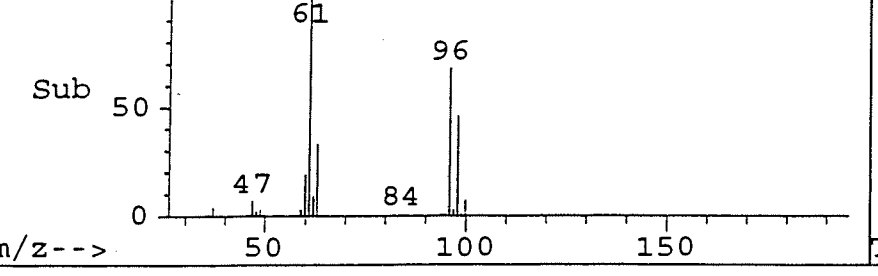
#10.
1,1-Dichloroethene
Concen: 53.44 ug/l
RT: 5.81 min Scan# 566
Delta R.T. -0.02 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion:96	Resp:	361392
Ion Ratio	Lower	Upper
96	100	
61	150.7	202.5
98	65.9	112.4
0	0.0	0.0

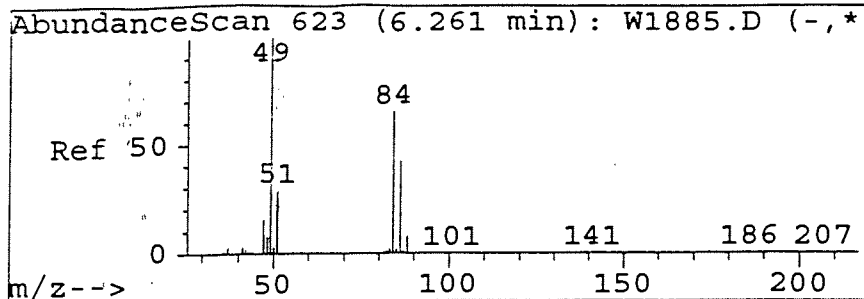
Abundance Scan 566 (5.806 min): W6472.D (*)



AbundanceScan 566 (5.806 min): W6472.D (-,*

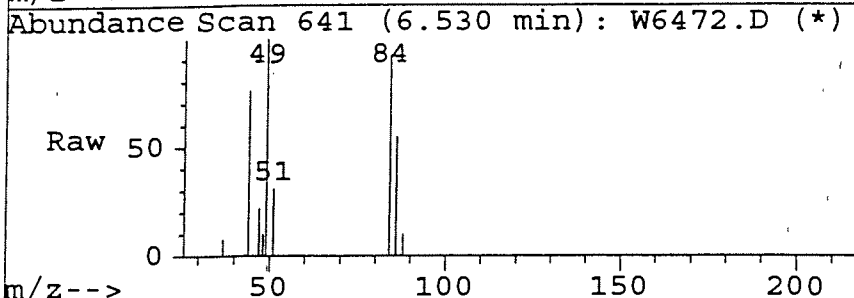


002038

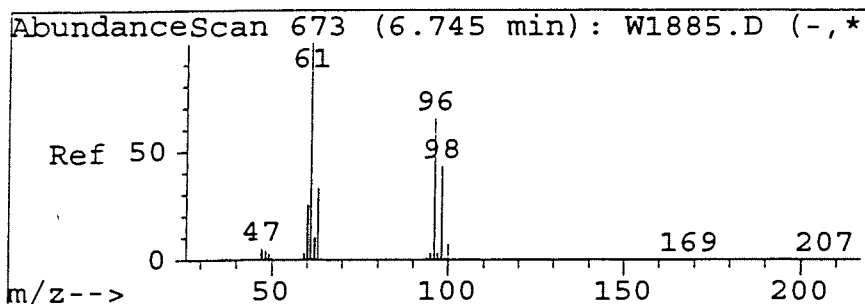
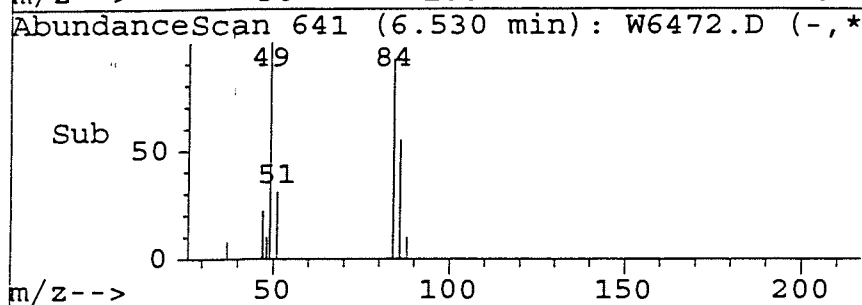
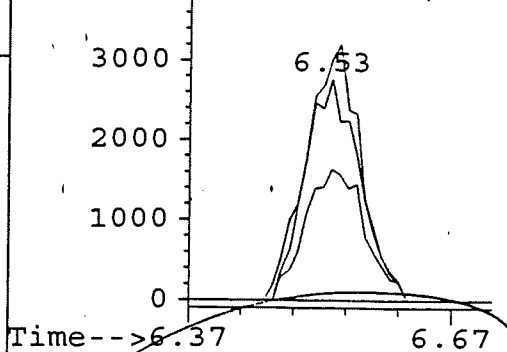


#12
Methylene Chloride
Concen: 2.49 ug/l
RT: 6.53 min Scan# 641
Delta R.T. -0.07 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion:84	Resp:	12230
Ion Ratio	Lower	Upper
84	100	
49	115.2	41.6 221.6
86	64.8	0.0 157.2
0	0.0	0.0 0.0

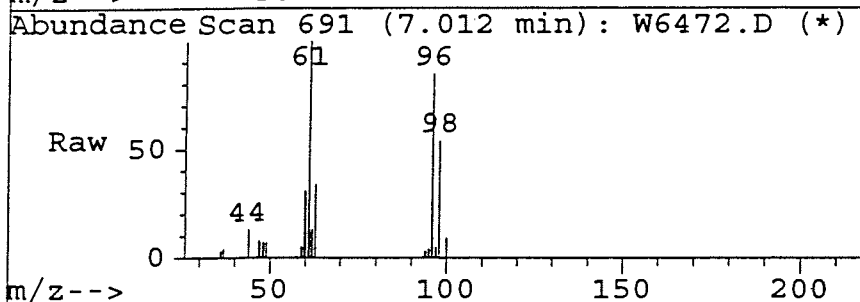


AbundanceIon	84.00 (83.
Ion	49.00 (48.
Ion	86.00 (85.

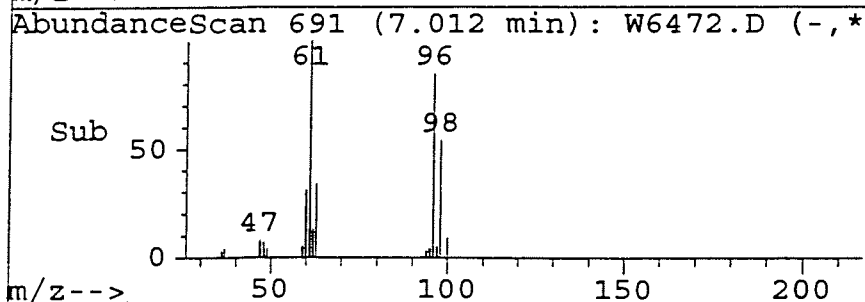
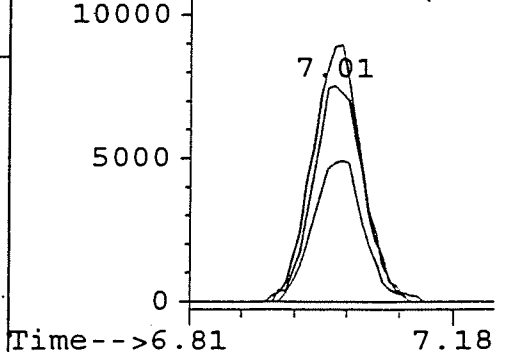


#13
1,2-Dichloroethene (trans-)
Concen: 5.59 ug/l
RT: 7.01 min Scan# 691
Delta R.T. -0.10 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

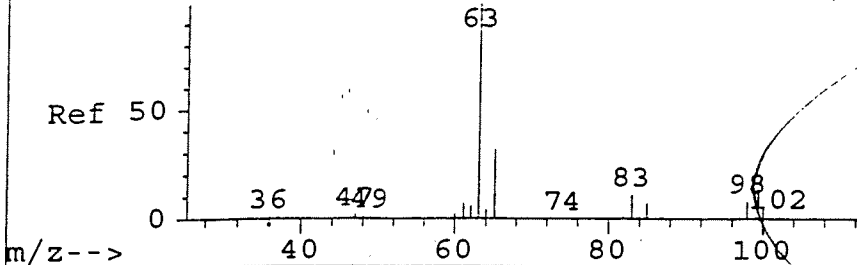
Tgt Ion:96	Resp:	37466
Ion Ratio	Lower	Upper
96	100	
61	117.1	76.6 176.6
98	64.7	13.5 113.5
0	0.0	0.0 0.0



AbundanceIon	96.00 (95.
Ion	61.00 (60.
Ion	98.00 (97.



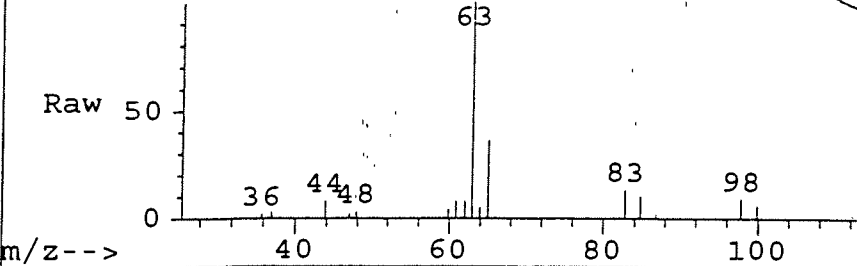
AbundanceScan 746 (7.453 min): W1885.D (-,*



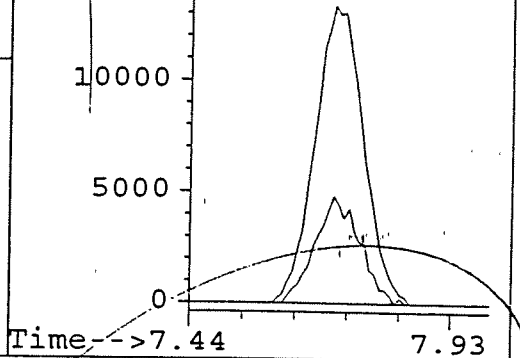
#14
1,1-Dichloroethane
Concen: 8.60 ug/l
RT: 7.71 min Scan# 763
Delta R.T. -0.14 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion: 63	Resp: 84814
Ion Ratio	Lower Upper
63 100	
65 33.5	0.0 81.6
0 0.0	0.0 0.0
0 0.0	0.0 0.0

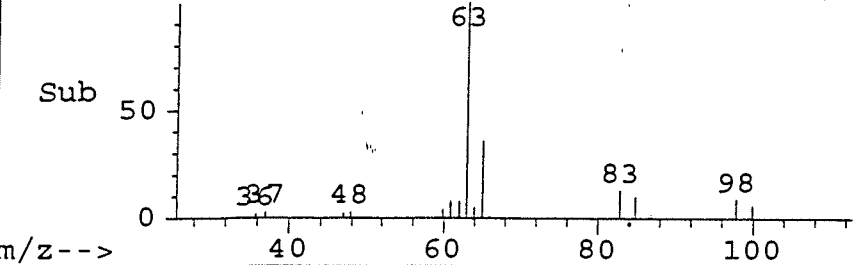
Abundance Scan 763 (7.706 min): W6472.D (*)



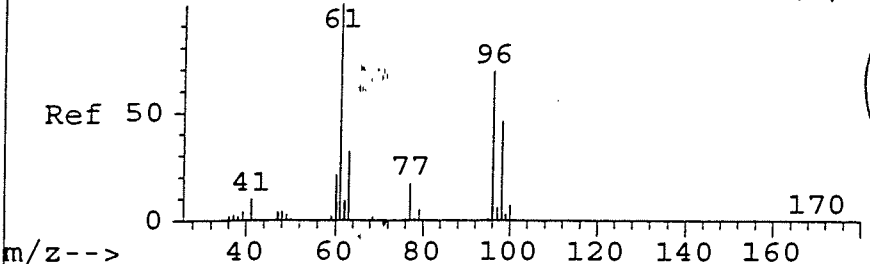
Abundance Ion 63.00 (62.
15000 Ion 65.00 (64.
7.71



AbundanceScan 763 (7.706 min): W6472.D (-,*



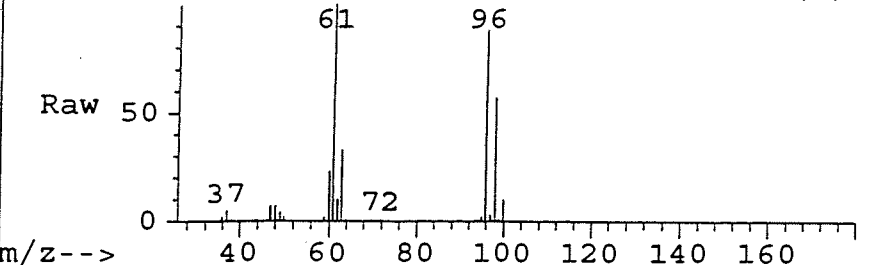
AbundanceScan 858 (8.537 min): W1885.D (-,*



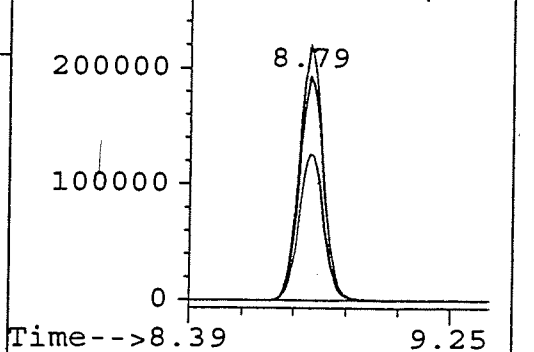
#17
1,2-Dichloroethene (cis-)
Concen: 134.81 ug/l
RT: 8.79 min Scan# 875
Delta R.T. -0.16 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion: 96	Resp: 1076904		
Ion	Ratio	Lower	Upper
96	100		
61	112.2	84.0	184.0
98	66.4	14.7	114.7
0	0.0	0.0	0.0

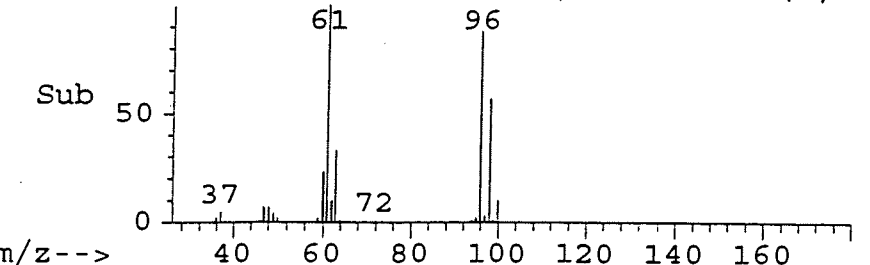
Abundance Scan 875 (8.786 min): W6472.D (*)

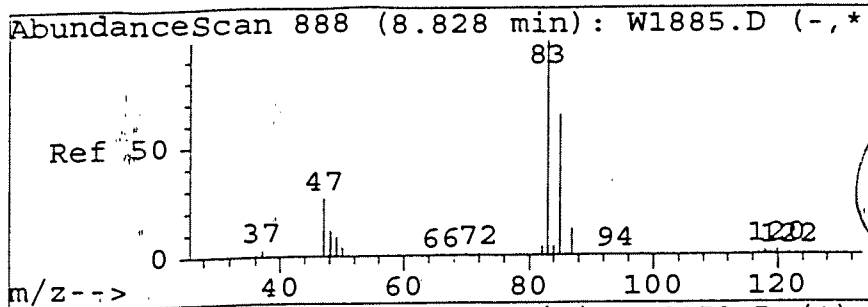


Abundance Ion 96.00 (95.
300000 Ion 61.00 (60.
Ion 98.00 (97.



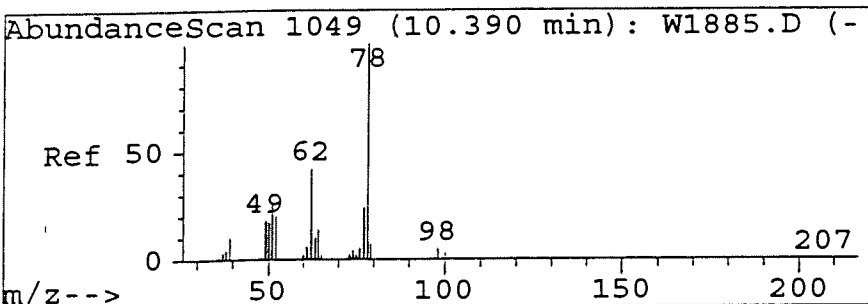
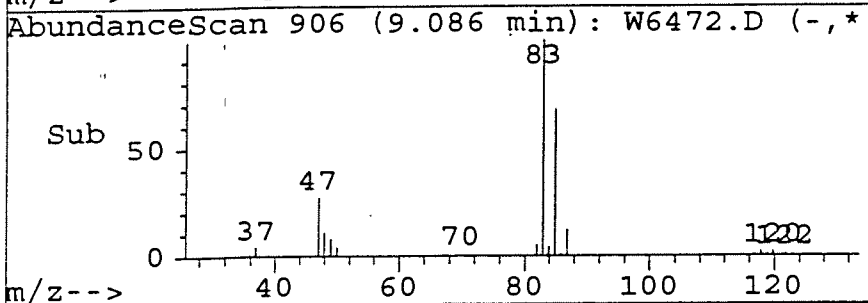
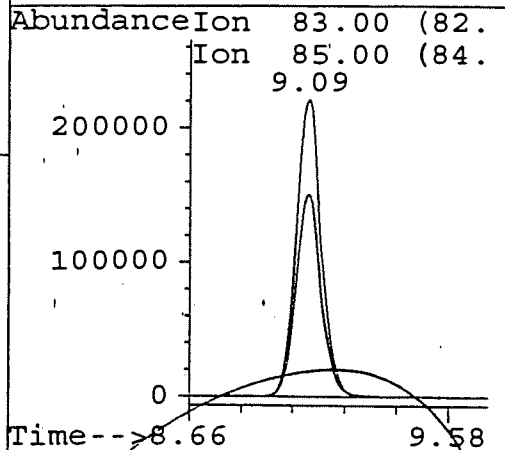
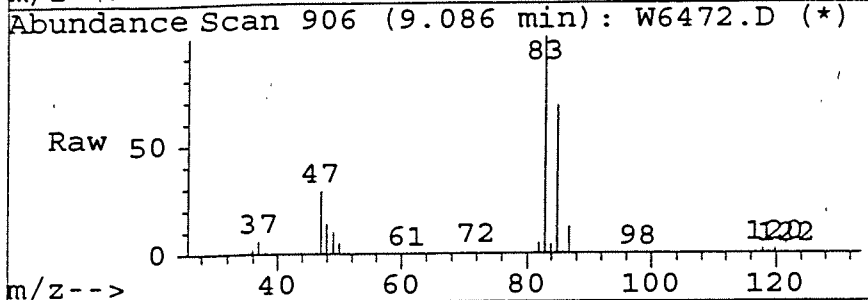
AbundanceScan 875 (8.786 min): W6472.D (-,*





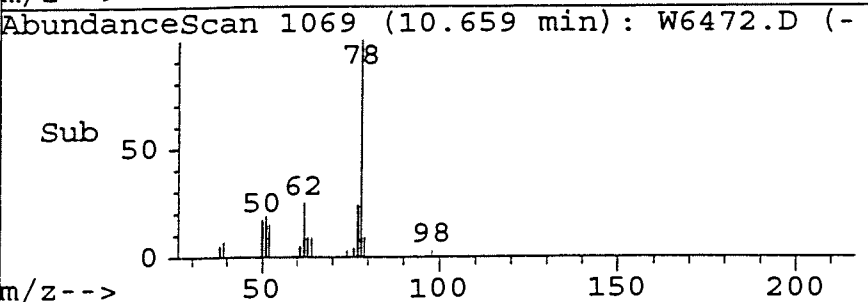
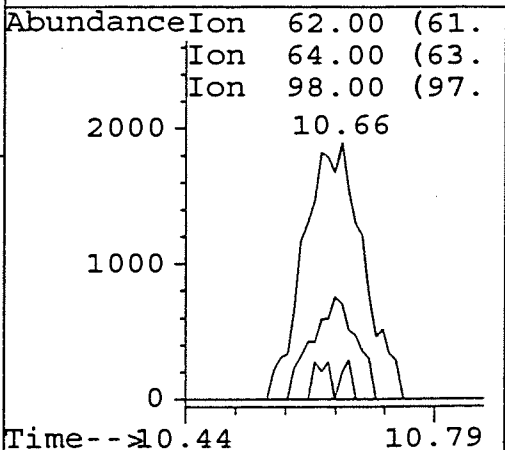
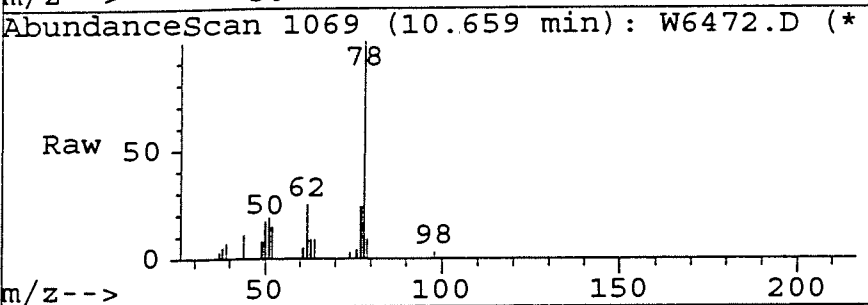
#19
Chloroform
Concen: 82.99 ug/l
RT: 9.09 min Scan# 906
Delta R.T. - -0.15 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

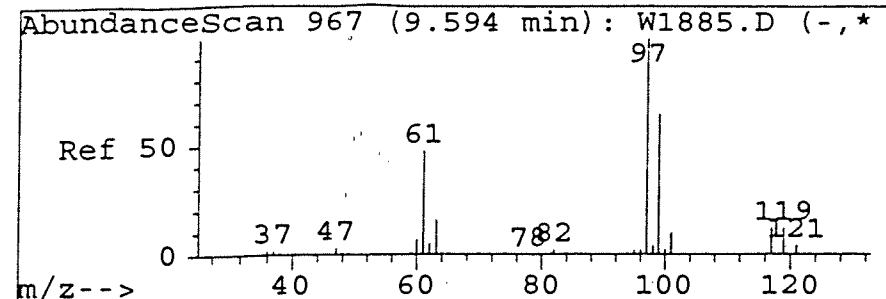
Tgt Ion:	83	Resp:	1371394
Ion	Ratio	Lower	Upper
83	100		
85	67.8	17.3	117.3
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#21
1,2-Dichloroethane
Concen: 1.47 ug/l
RT: 10.66 min Scan# 1069
Delta R.T. - -0.18 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion:	62	Resp:	11027
Ion	Ratio	Lower	Upper
62	100		
64	29.8	0.0	81.7
98	2.6	0.0	53.9
0	0.0	0.0	0.0

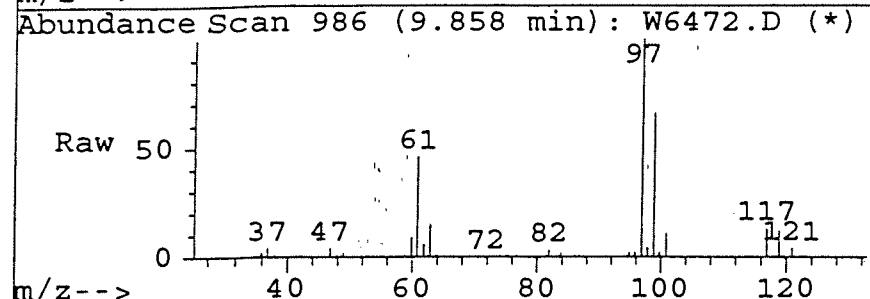




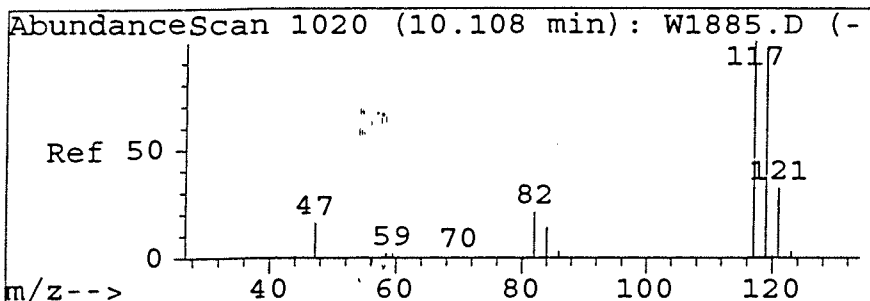
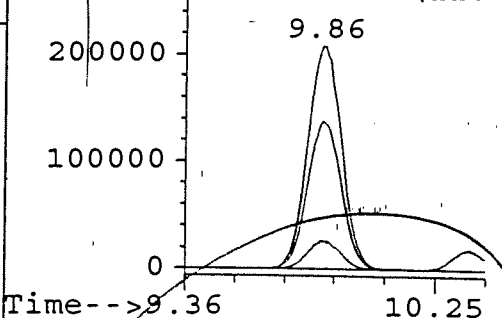
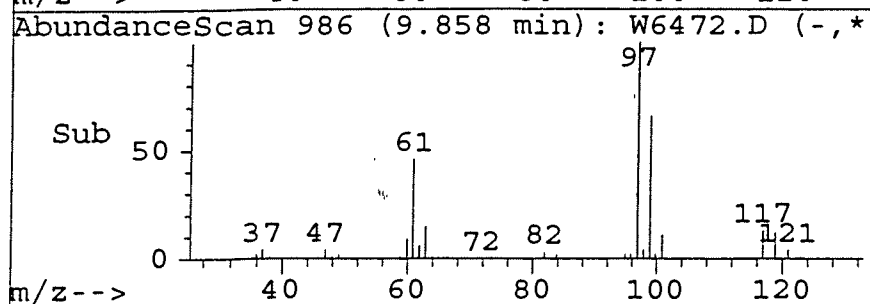
#22
1,1,1-Trichloroethane
Concen: 89.07 ug/l
RT: 9.86 min Scan# 986
Delta R.T. -0.17 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion: 97 Resp: 1764187

Ion	Ratio	Lower	Upper
97	100		
99	66.2	18.2	118.2
117	12.6	0.0	57.5
119	12.6	0.0	60.9



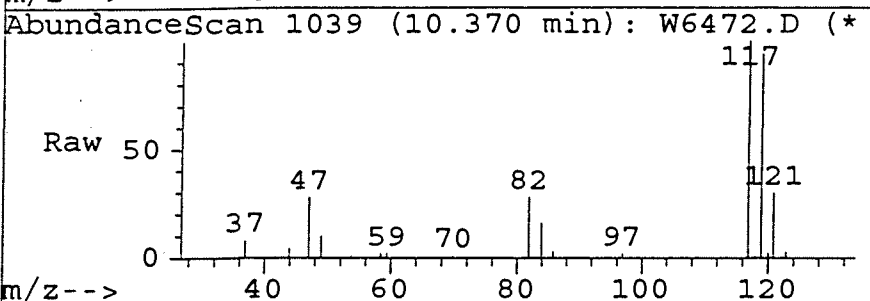
AbundanceIon 97.00 (96.
Ion 99.00 (98.
Ion 117.00 (116
Ion 119.00 (118



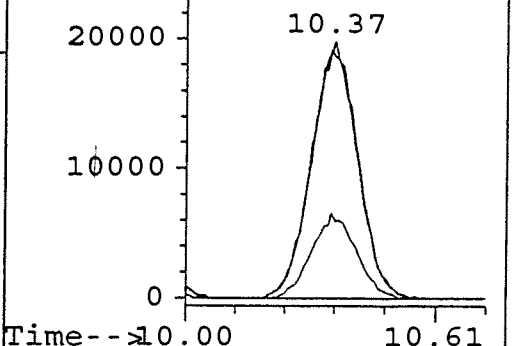
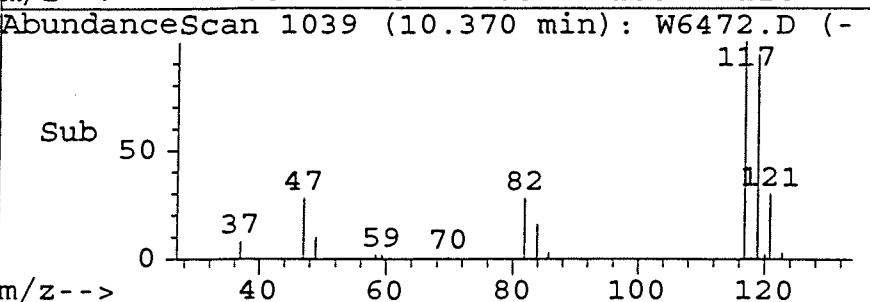
#23
Carbon Tetrachloride
Concen: 8.31 ug/l
RT: 10.37 min Scan# 1039
Delta R.T. -0.18 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion: 117 Resp: 153924

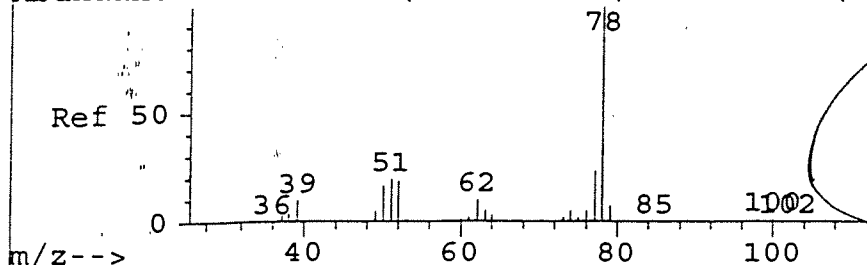
Ion	Ratio	Lower	Upper
117	100		
119	99.4	47.3	147.3
121	32.0	0.0	82.4
0	0.0	0.0	0.0



AbundanceIon 117.00 (116
Ion 119.00 (118
Ion 121.00 (120



AbundanceScan 1054 (10.438 min): W1885.D (-



#24

Benzene

Concen: 2.83 ug/l

RT: 10.70 min Scan# 1073

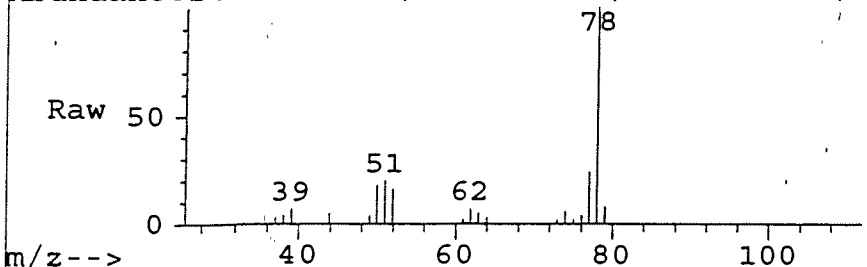
Delta R.T. -0.03 min

Lab File: W6472.D

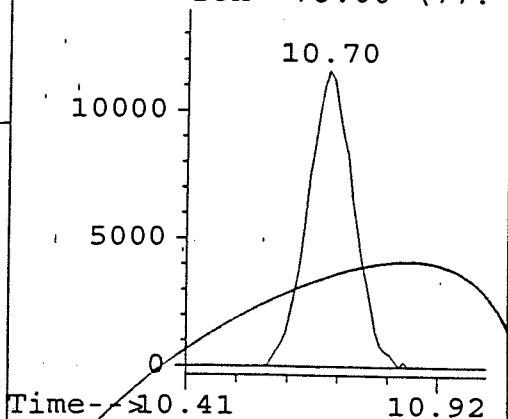
Acq: 17 Jul 96 5:56 am

Tgt Ion: 78	Resp: 75344
Ion Ratio	Lower Upper
78 100	
0 0.0	0.0 0.0
0 0.0	0.0 0.0
0 0.0	0.0 0.0

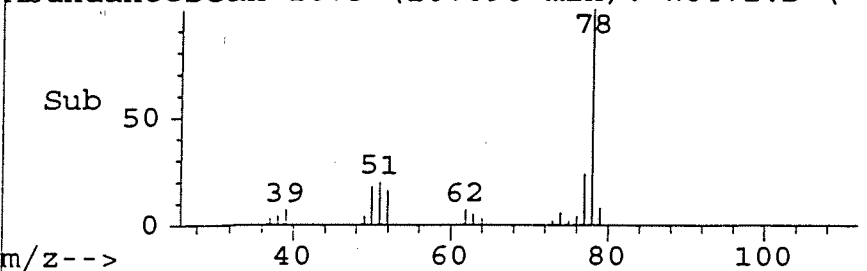
AbundanceScan 1073 (10.698 min): W6472.D (*)



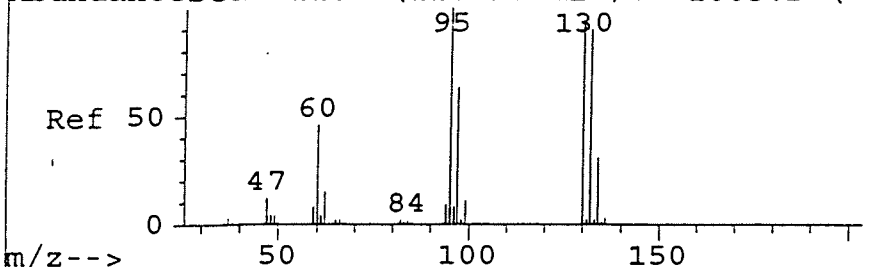
AbundanceIon 78.00 (77.



AbundanceScan 1073 (10.698 min): W6472.D (-



AbundanceScan 1184 (11.697 min): W1885.D (-



#25

Trichloroethene

Concen: 2639.10 ug/l

RT: 11.96 min Scan# 1204

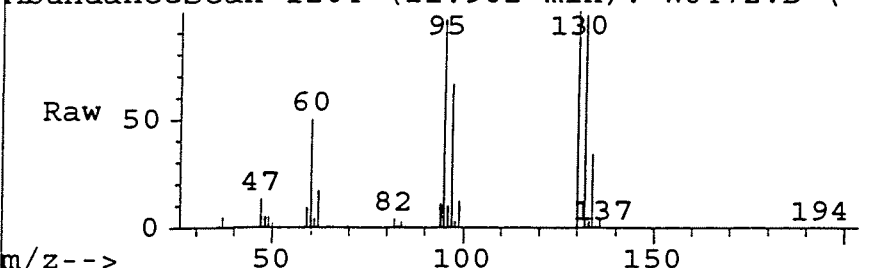
Delta R.T. -0.19 min

Lab File: W6472.D

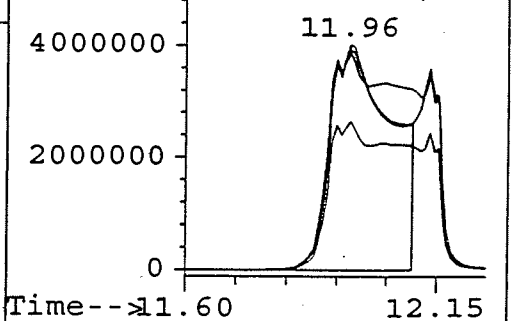
Acq: 17 Jul 96 5:56 am

Tgt	Ion:130	Resp:37459670	
Ion	Ratio	Lower	Upper
130	100		
132	98.0	46.4	146.4
95	143.8	54.1	154.1
97	98.3	16.2	116.2

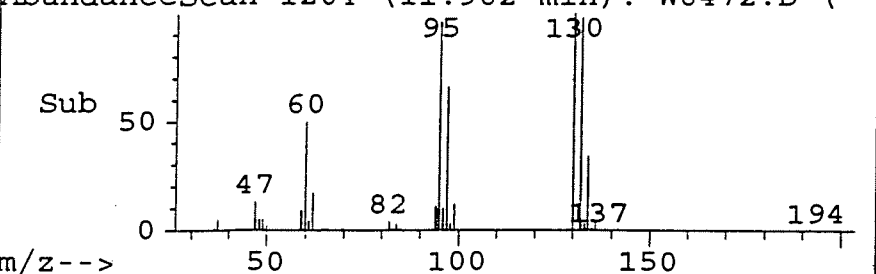
AbundanceScan 1204 (11.962 min): W6472.D (*)



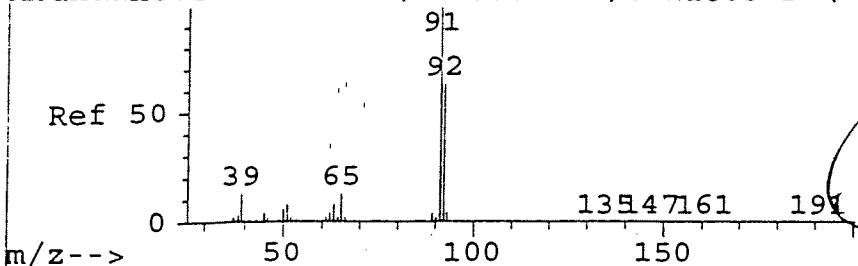
AbundanceIon 130.00 (129
Ion 132.00 (131
Ion 95.00 (94.
Ion 97.00 (96.



AbundanceScan 1204 (11.962 min): W6472.D (-



AbundanceScan 1482 (14.586 min): W1885.D (-



#35

Toluene

Concen: 0.29 ug/l

RT: 14.86 min Scan# 1504

Delta R.T. -0.27 min

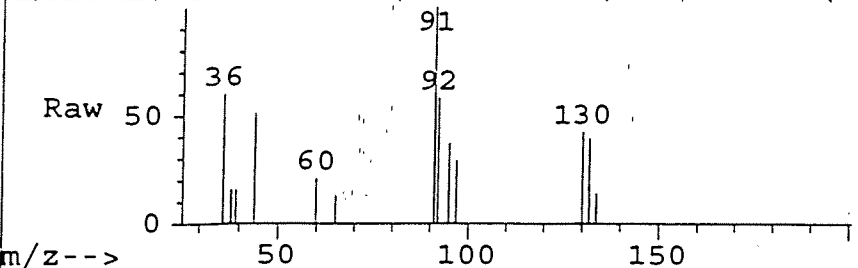
Lab File: W6472.D

Acq: 17 Jul 96 5:56 am

Tgt Ion:	92	Resp:	5734
Ion	Ratio	Lower	Upper
92	100		
91	164.5	117.6	217.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0

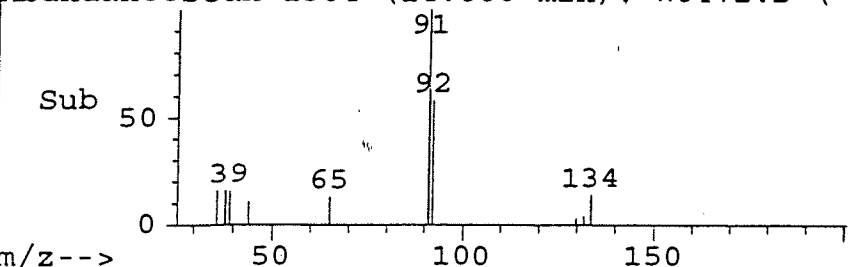
m/z-->

AbundanceScan 1504 (14.860 min): W6472.D (*)

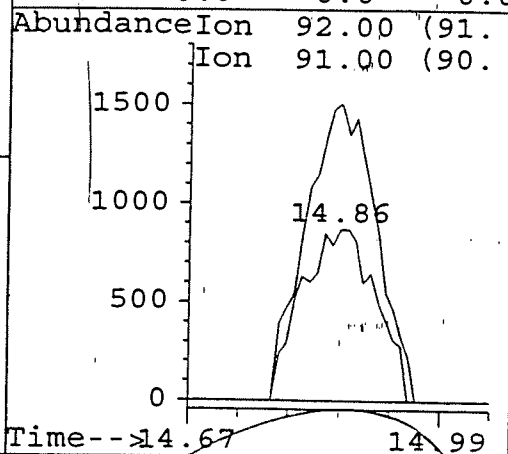


m/z-->

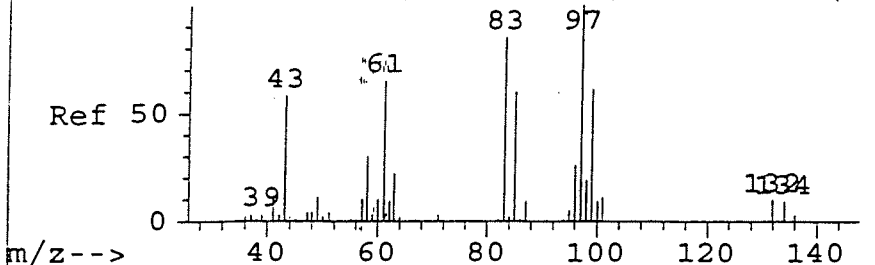
AbundanceScan 1504 (14.860 min): W6472.D (-



m/z-->

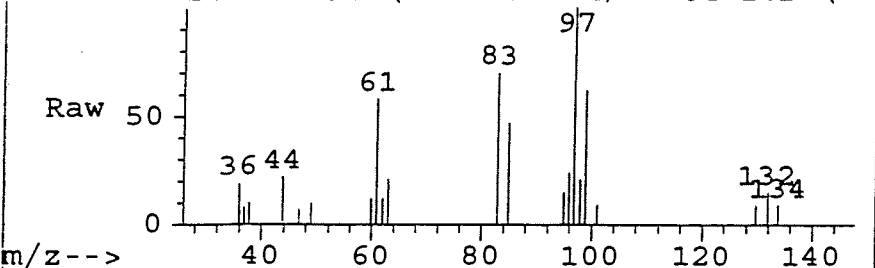


AbundanceScan 1569 (15.429 min): W1885.D (-



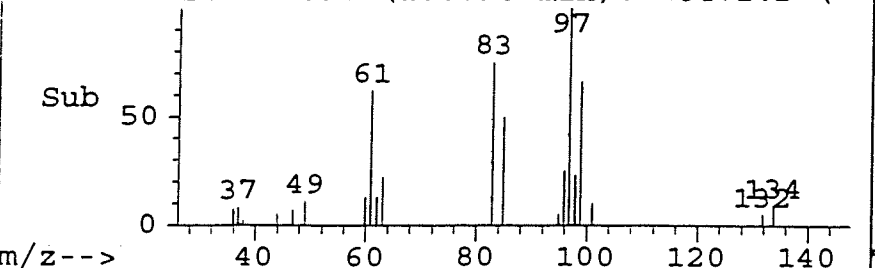
m/z-->

AbundanceScan 1590 (15.690 min): W6472.D (*)



m/z-->

AbundanceScan 1590 (15.690 min): W6472.D (-



m/z-->

#36

1,1,2-Trichloroethane

Concen: 4.50 ug/l

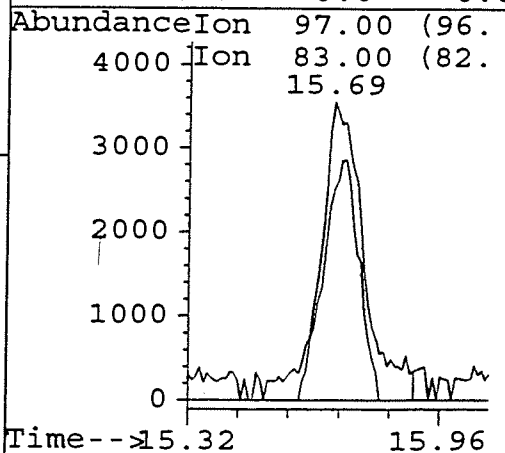
RT: 15.69 min Scan# 1590

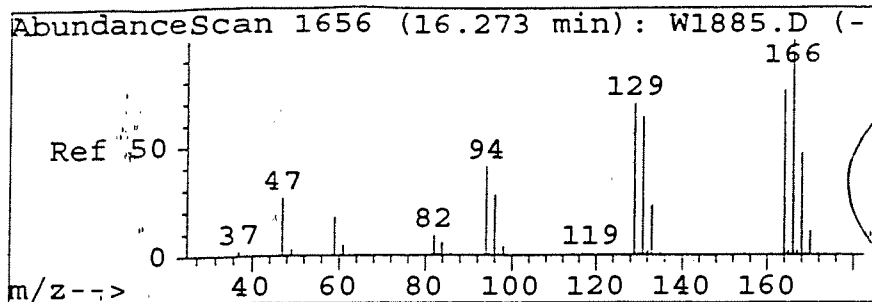
Delta R.T. -0.26 min

Lab File: W6472.D

Acq: 17 Jul 96 5:56 am

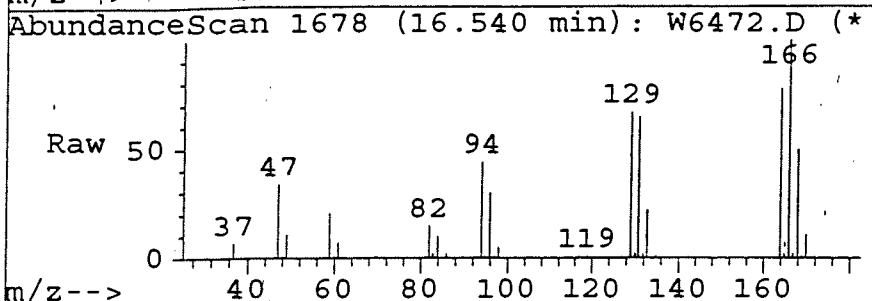
Tgt Ion:	97	Resp:	27197
Ion	Ratio	Lower	Upper
97	100		
83	64.4	31.0	131.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



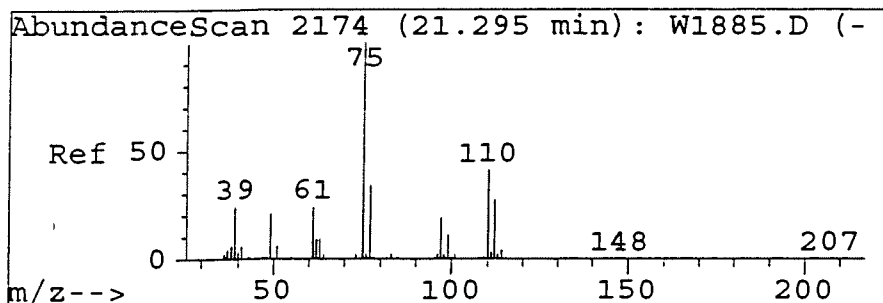
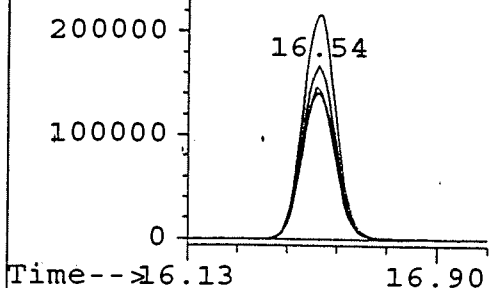
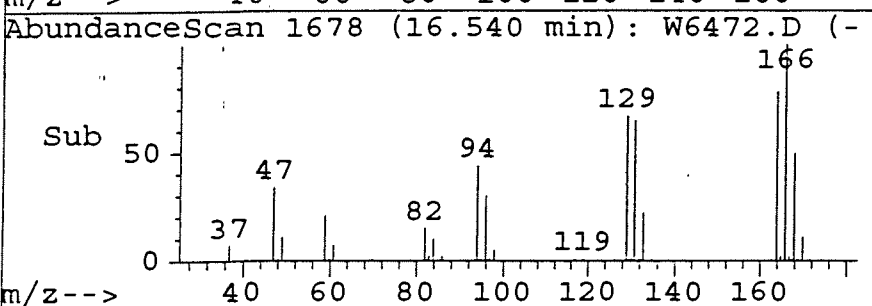


#37
Tetrachloroethene
Concen: 81.20 ug/l
RT: 16.54 min Scan# 1678
Delta R.T. -0.24 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion:164	Resp: 1188627
Ion Ratio	Lower Upper
164 100	
166 129.9	81.6 181.6
129 86.8	33.6 133.6
131 84.8	29.4 129.4

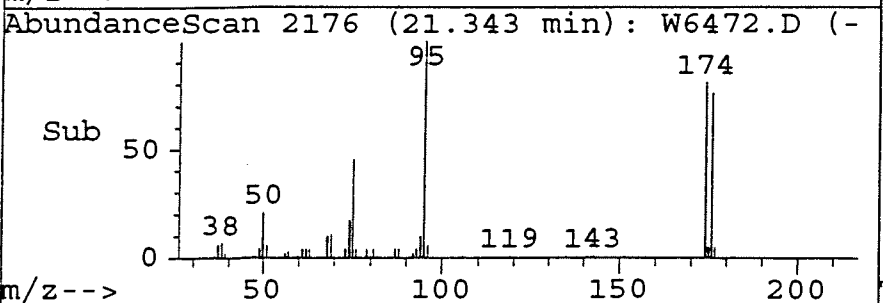
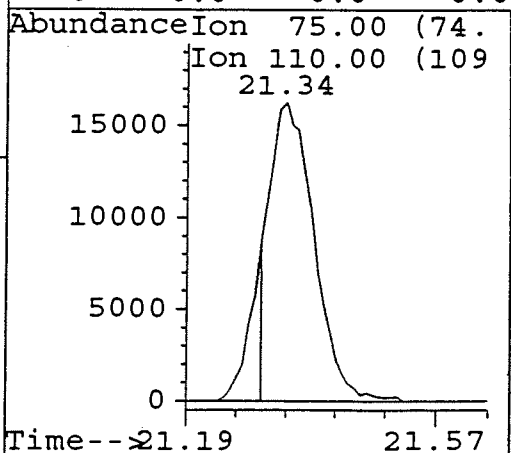
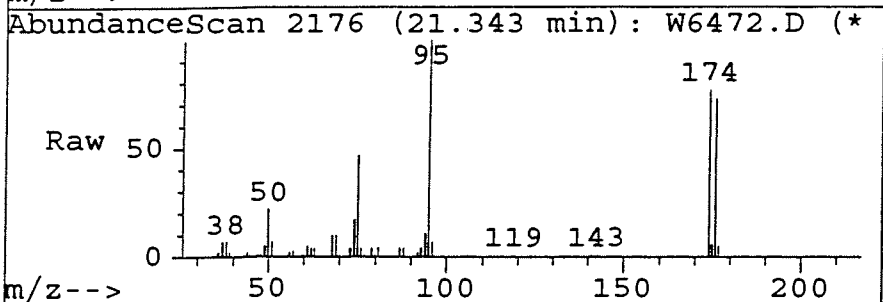


Abundance	Ion	164.00 (163
300000	Ion 166.00 (165	
	Ion 129.00 (128	
	Ion 131.00 (130	

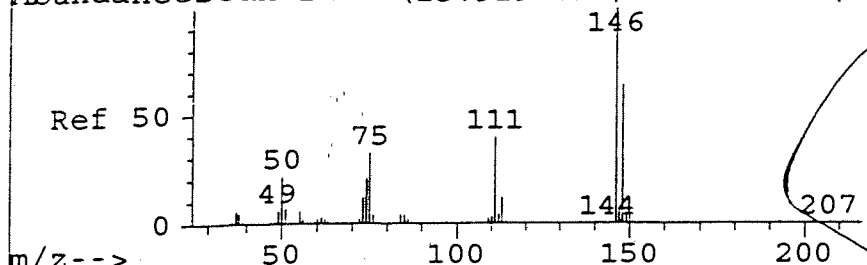


#50
1,2,3-Trichloropropane
Concen: 20.35 ug/l
RT: 21.34 min Scan# 2176
Delta R.T. -0.19 min
Lab File: W6472.D
Acq: 17 Jul 96 5:56 am

Tgt Ion:75	Resp:	77386
Ion	Ratio	Lower Upper
75	100	
110	0.0	0.0 86.0
0	0.0	0.0 0.0
0	0.0	0.0 0.0



AbundanceScan 2444 (23.919 min): W1885.D (-



#59

1,4-Dichlorobenzene

Concen: 0.13 ug/l

RT: 24.11 min Scan# 2463

Delta R.T.: 0.01 min

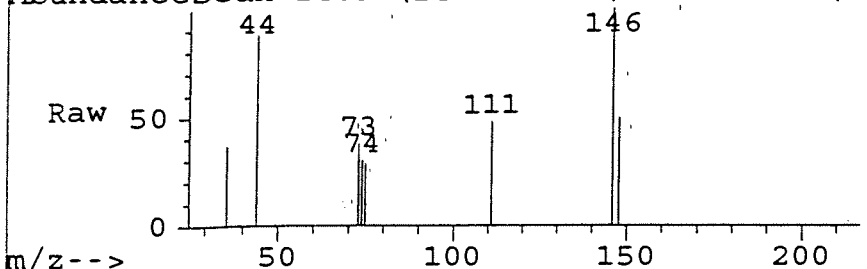
Lab File: W6472.D

Acq: 17 Jul 96 5:56 am

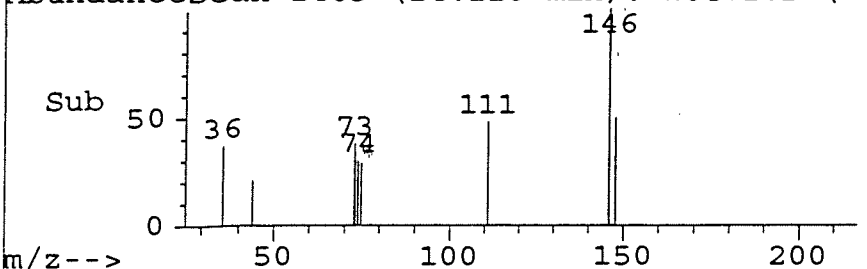
Tgt Ion:146 Resp: 3032

Ion	Ratio	Lower	Upper
146	100		
148	57.2	14.9	114.9
111	33.9	0.0	88.1
113	0.0	0.0	60.4

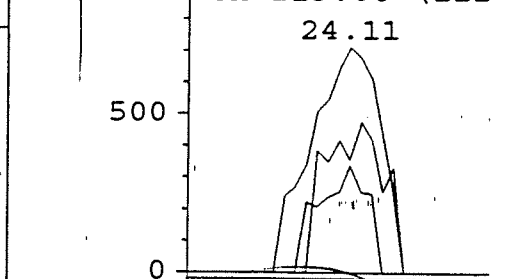
AbundanceScan 2463 (24.110 min): W6472.D (*)



AbundanceScan 2463 (24.110 min): W6472.D (-

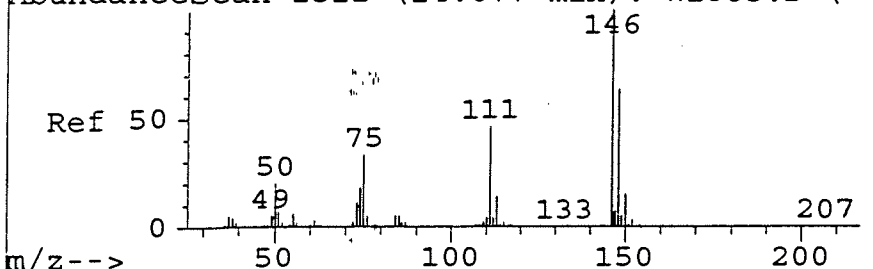


AbundanceIon 146.00 (145
Ion 148.00 (147
Ion 111.00 (110
Ion 113.00 (112



Time-->23.97 24.19

AbundanceScan 2522 (24.677 min): W1885.D (-



#61

1,2-Dichlorobenzene

Concen: 0.10 ug/l

RT: 24.86 min Scan# 2541

Delta R.T.: -0.12 min

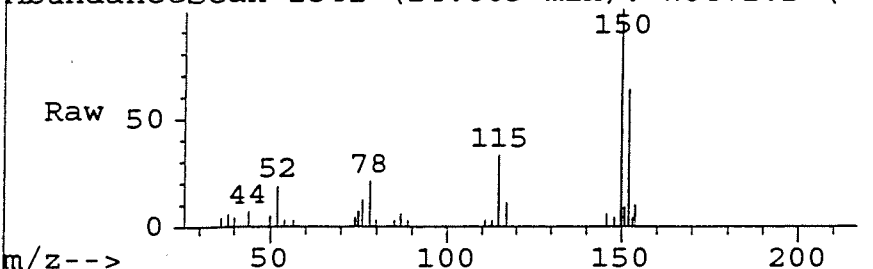
Lab File: W6472.D

Acq: 17 Jul 96 5:56 am

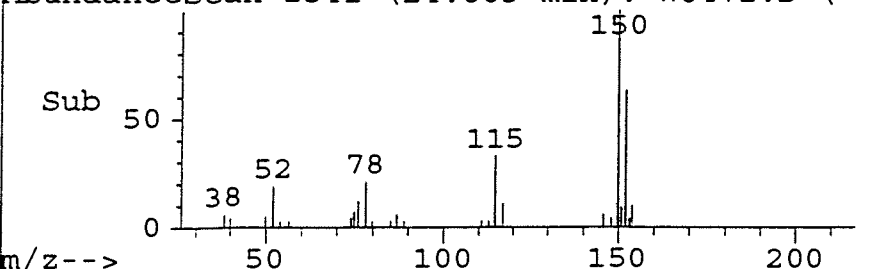
Tgt Ion:146 Resp: 1843

Ion	Ratio	Lower	Upper
146	100		
148	50.9	18.4	118.4
111	106.3	0.0	94.9#
0	0.0	0.0	0.0

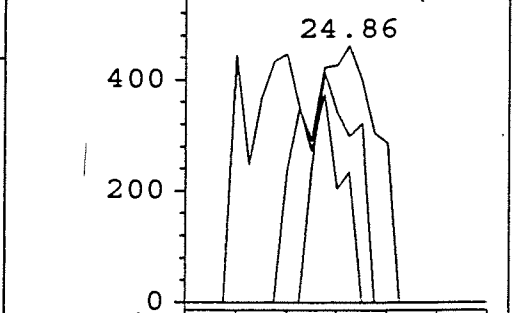
AbundanceScan 2541 (24.863 min): W6472.D (*)



AbundanceScan 2541 (24.863 min): W6472.D (-



AbundanceIon 146.00 (145
Ion 148.00 (147
Ion 111.00 (110



Time-->24.74 24.93

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6477.D

Acq Time : 17 Jul 96 9:11 am

Sample : ~~10PPB-QCCS-3~~/B#96421 *G9607191-3*

Misc : 25ML/VO9607015 *Gw-2 / Allied Signal*

Quant Time: Jul 17 9:44 1996

Operator: DEBBIE

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Last Update : Tue Jul 16 10:03:38 1996

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.03	96	289692	10.00	ug/l	-0.09
System Monitoring Compounds				%Recovery		
45) 1,2-Dichlorobenzene-d4	24.81	150	175165	10.51	ug/l	105.07%
47) Bromofluorobenzene	21.34	95	163017	10.37	ug/l	103.72%
Target Compounds				Qvalue		
2) Dichlorodifluoromethane	3.18	85	3701	0.35	ug/l	4DL 88
9) Acetone	5.52	43	667	2.70	ug/l	100
10) 1,1-Dichloroethene	5.71	96	30108	5.32	ug/l	15.3 96
12) Methylene Chloride	6.44	84	3504	0.85	ug/l	10.85 82
14) 1,1-Dichloroethane	7.61	63	21899	2.65	ug/l	12.6 99
17) 1,2-Dichloroethene (cis-)	8.68	96	5809	0.87	ug/l	10.87 88
19) Chloroform	8.98	83	13666	0.99	ug/l	10.99 92
22) 1,1,1-Trichloroethane	9.77	97	42805	2.58	ug/l	12.6 95
23) Carbon Tetrachloride	10.28	117	49594	3.20	ug/l	13.2 97
25) Trichloroethene	11.89	130	931452	78.47	ug/l	190 97
28) Bromodichloromethane	12.77	83	1920	0.14	ug/l	56
35) Toluene	14.83	92	96719	5.81	ug/l	15.8 99
37) Tetrachloroethene	16.51	164	19775	1.62	ug/l	1.6 95
50) 1,2,3-Trichloropropane	21.34	75	79394	24.96	ug/l	# 39
65) Naphthalene	28.61	128	1775	0.15	ug/l	# 81

*Resum 5x for TCE
see W 6504 on 7/18*

REVIEWED & APPROVED

BY SL DATE 7-19-96

BATCH # 96421
DATE 07/12/96
ANALYST mm

002047

(#) = qualifier out of range (m) = manual integration

W6477.D 524JLS.M

Wed Jul 17 11:11:30 1996

VOA3

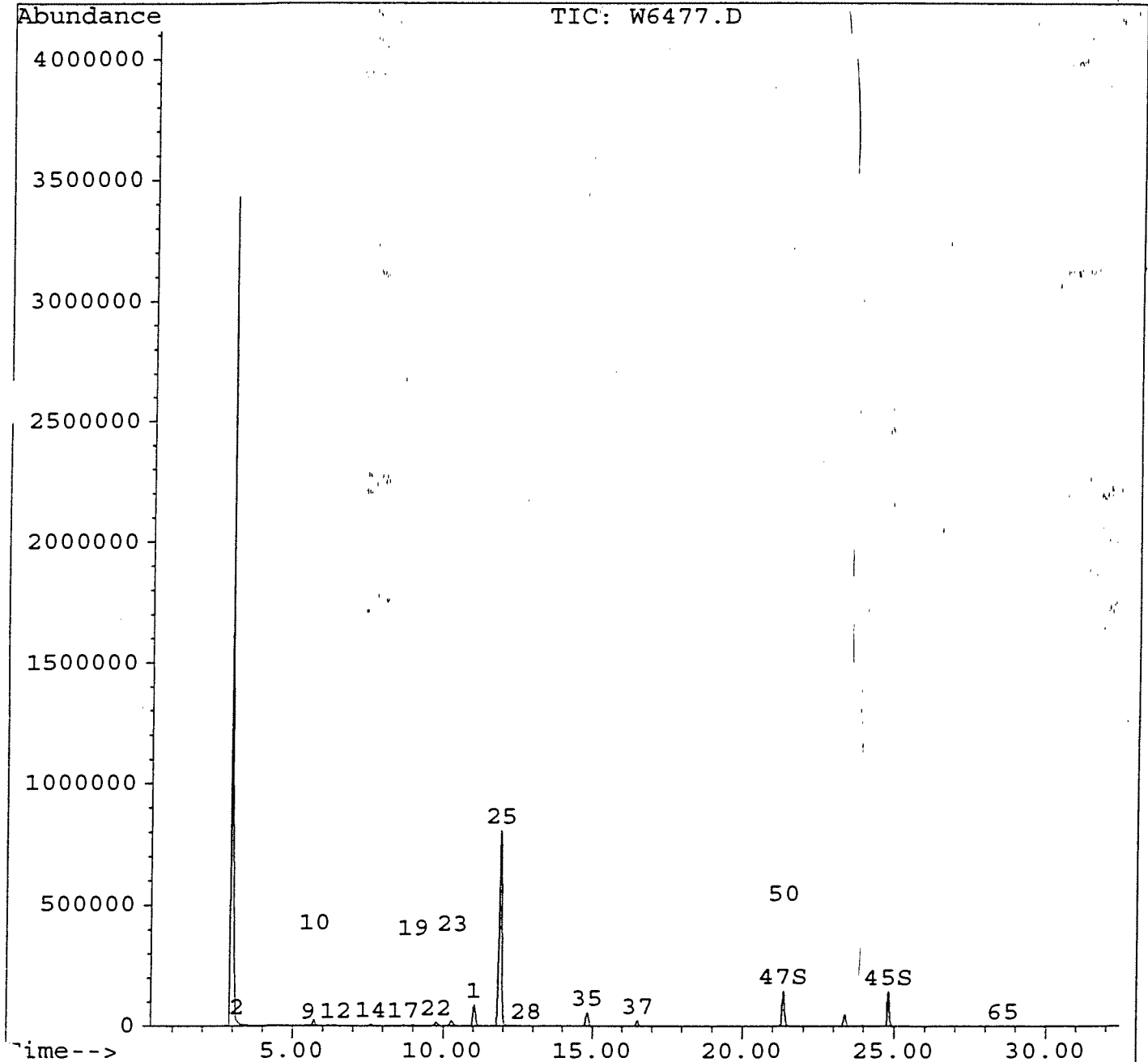
Page 1

Quantitation Report

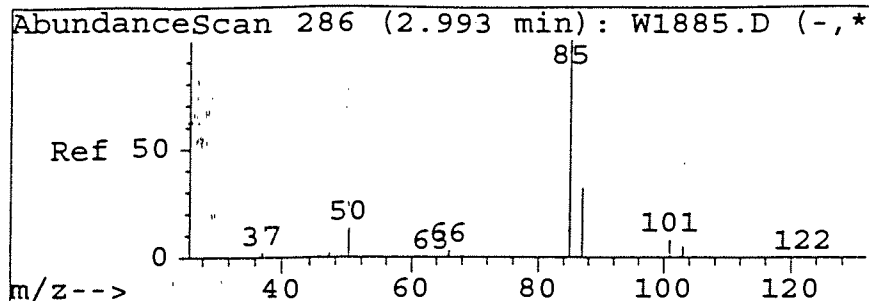
Data File : C:\HPCHEM\1\DATA\JUL16\W6477.D
Acq Time : 17 Jul 96 9:11 am
Sample : 10PPB-QCCS-3/B#96421
Misc : 25ML/VO9607015
Quant Time: Jul 17 9:44 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

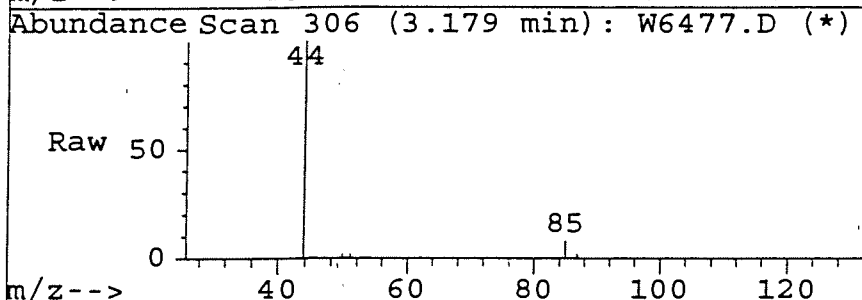


002048

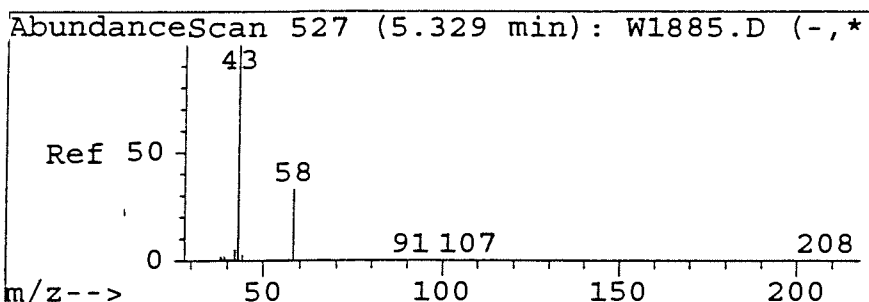
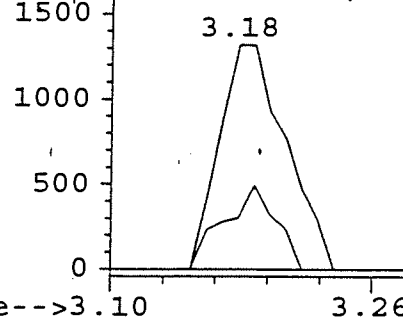


#2
Dichlorodifluoromethane
Concen: 0.35 ug/l
RT: 3.18 min Scan# 306
Delta R.T. 0.07 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am

Tgt Ion:85	Resp:	3701
Ion	Ratio	Lower Upper
85	100	
87	29.3	0.0 84.3
101	0.0	0.0 58.1
103	0.0	0.0 54.6

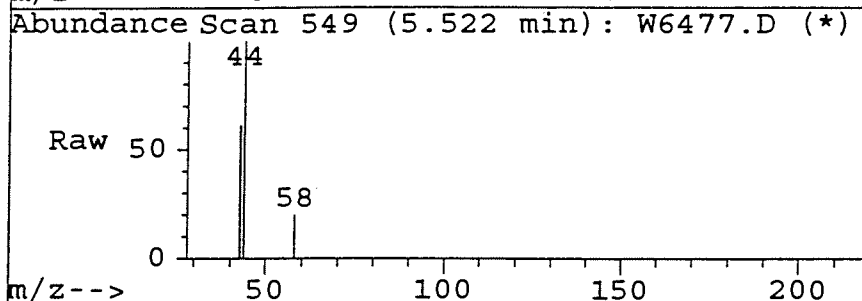


AbundanceIon	85.00 (84.
2000 Ion	87.00 (86.
Ion	101.00 (100
Ion	103.00 (102

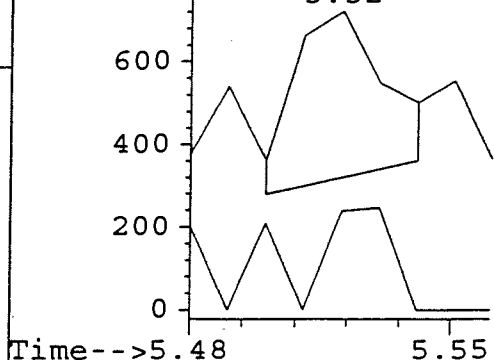
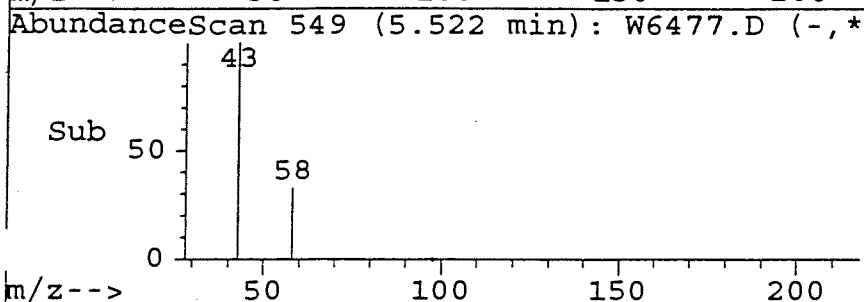


#9
Acetone
Concen: 2.70 ug/l
RT: 5.52 min Scan# 549
Delta R.T. -0.11 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am

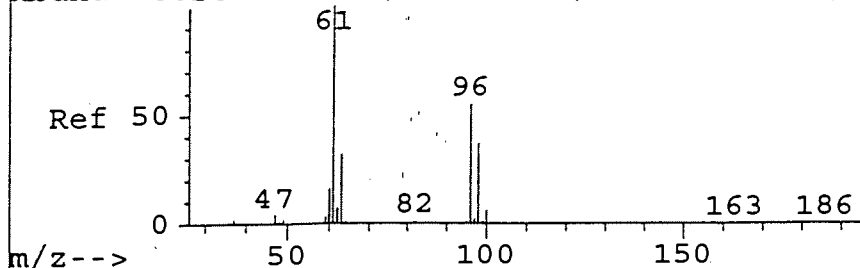
Tgt Ion:43	Resp:	667
Ion	Ratio	Lower Upper
43	100	
58	42.0	0.0 50.0
0	0.0	0.0 0.0
0	0.0	0.0 0.0



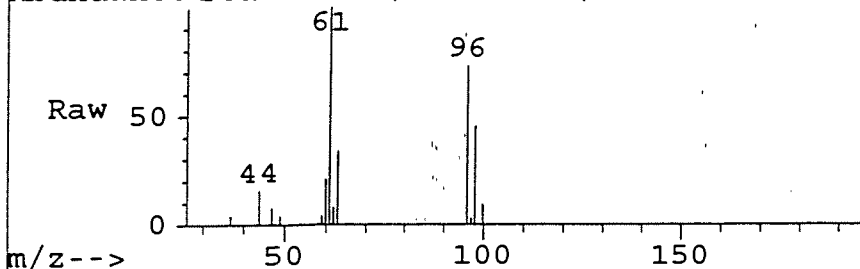
AbundanceIon	43.00 (42.
Ion	58.00 (57.



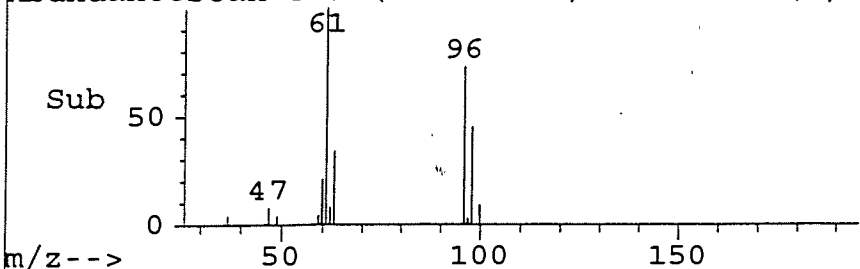
AbundanceScan 547 (5.524 min): W1885.D (-,*



AbundanceScan 569 (5.715 min): W6477.D (*)



AbundanceScan 569 (5.715 min): W6477.D (-,*



#10

1,1-Dichloroethene

Concen: 5.32 ug/l

RT: 5.71 min Scan# 569

Delta R.T. -0.12 min

Lab File: W6477.D

Acq: 17 Jul 96 9:11 am

Tgt Ion:96 Resp: 30108

Ion Ratio Lower Upper

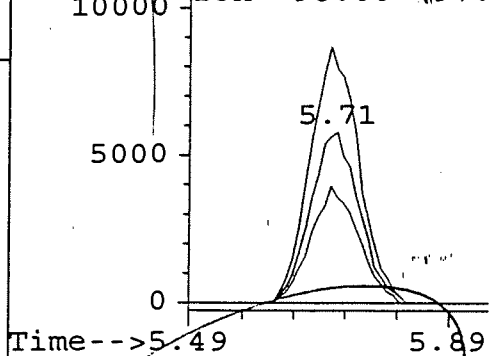
96 100

61 148.6 102.5 202.5

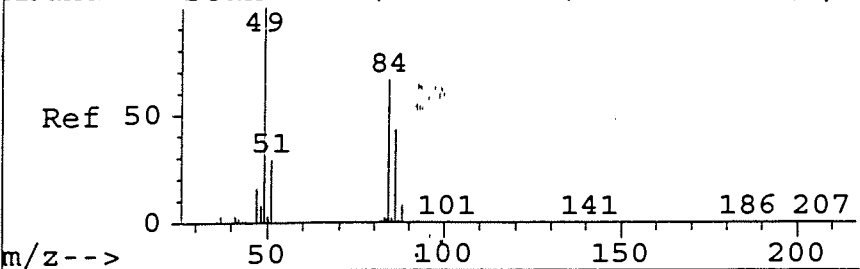
98 66.2 12.4 112.4

0 0.0 0.0 0.0

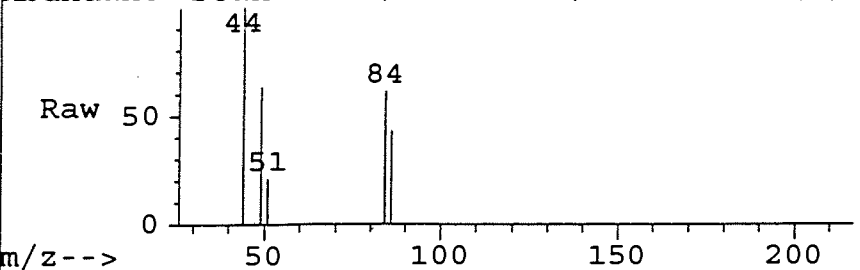
AbundanceIon 96.00 (95.
Ion 61.00 (60.
Ion 98.00 (97.



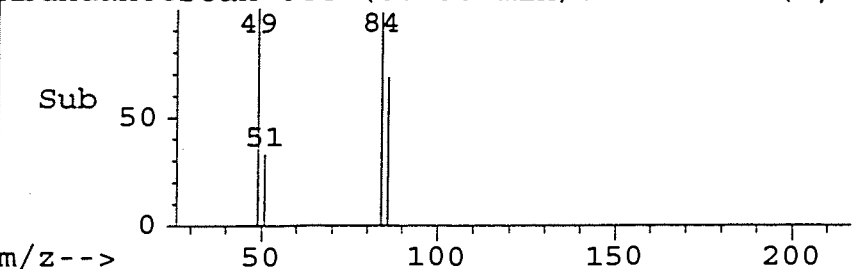
AbundanceScan 623 (6.261 min): W1885.D (-,*



AbundanceScan 644 (6.438 min): W6477.D (*)



AbundanceScan 644 (6.438 min): W6477.D (-,*



#12

Methylene Chloride

Concen: 0.85 ug/l

RT: 6.44 min Scan# 644

Delta R.T. -0.16 min

Lab File: W6477.D

Acq: 17 Jul 96 9:11 am

Tgt Ion:84 Resp: 3504

Ion Ratio Lower Upper

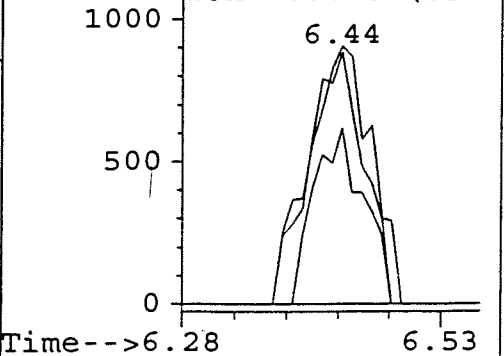
84 100

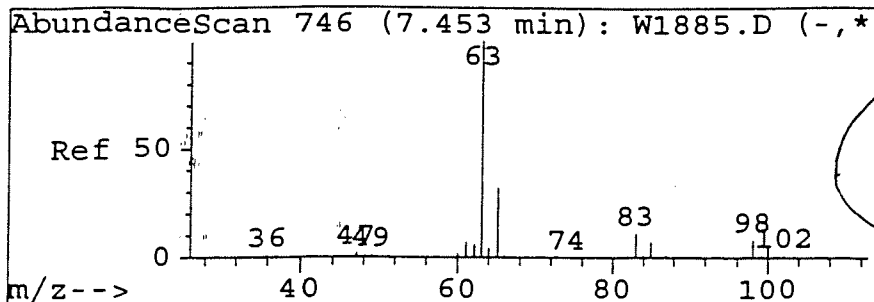
49 105.0 41.6 221.6

86 60.0 0.0 157.2

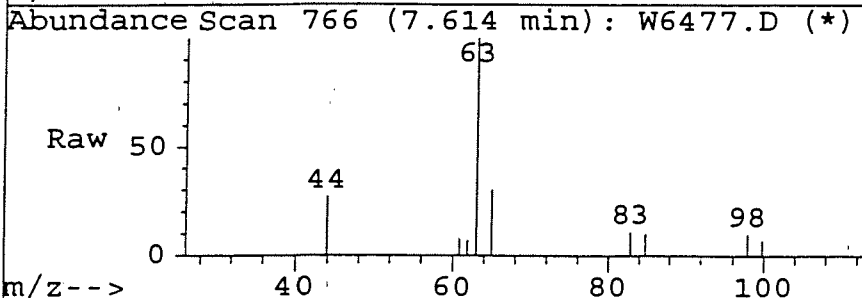
0 0.0 0.0 0.0

AbundanceIon 84.00 (83.
Ion 49.00 (48.
Ion 86.00 (85.

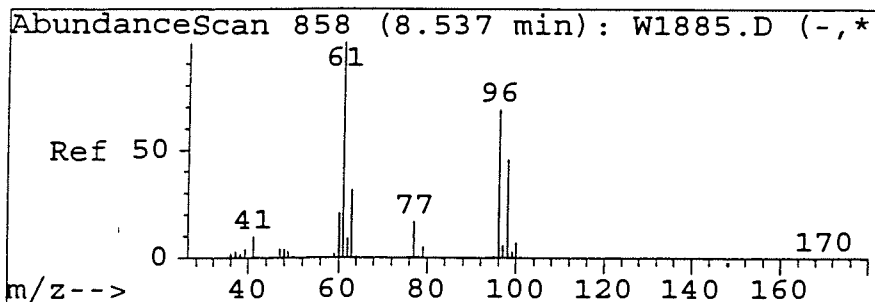
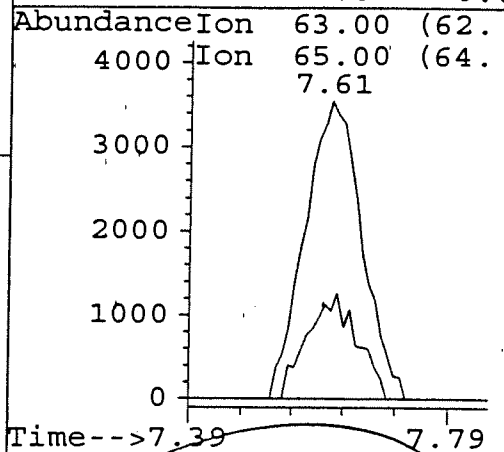
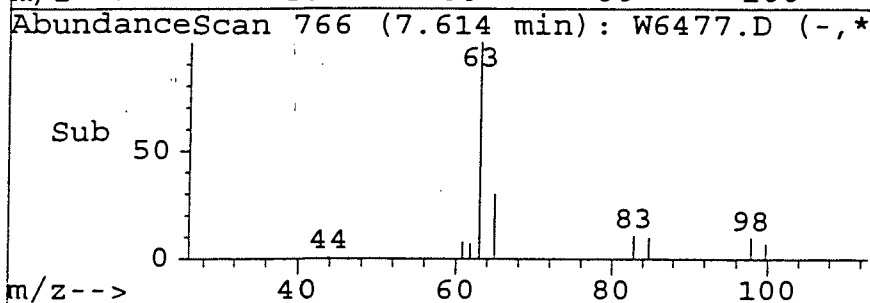




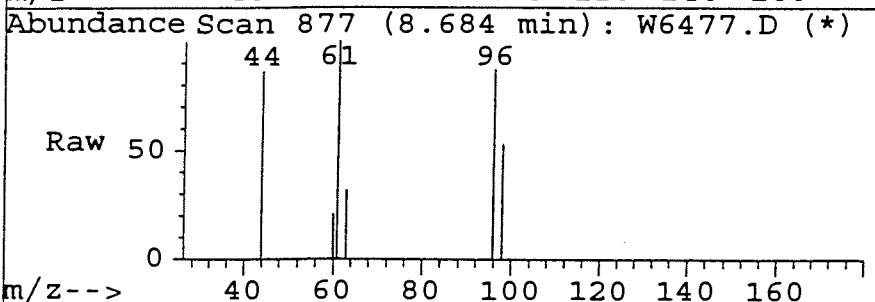
#14
1,1-Dichloroethane
Concen: 2.65 ug/l
RT: 7.61 min Scan# 766
Delta R.T. -0.24 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am



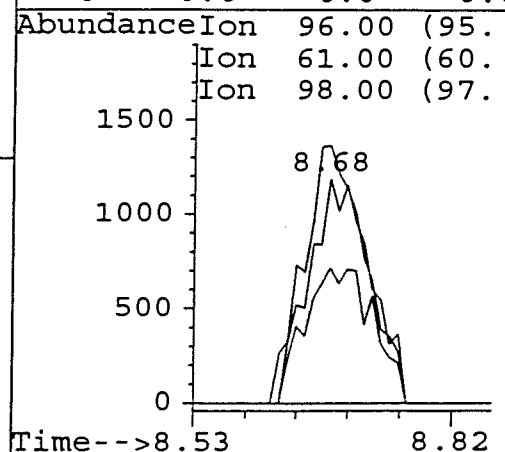
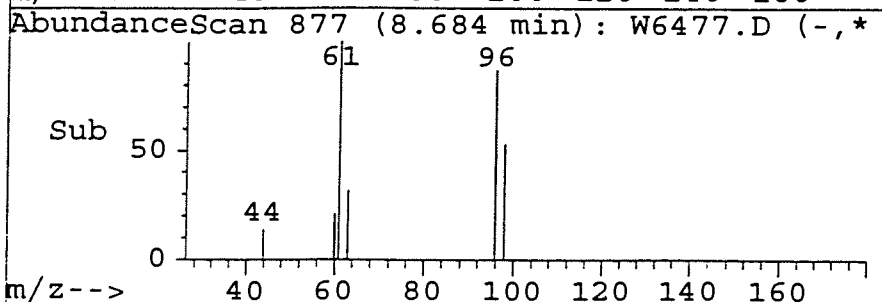
Tgt Ion	Ratio	Lower	Upper
63	100		
65	31.1	0.0	81.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0

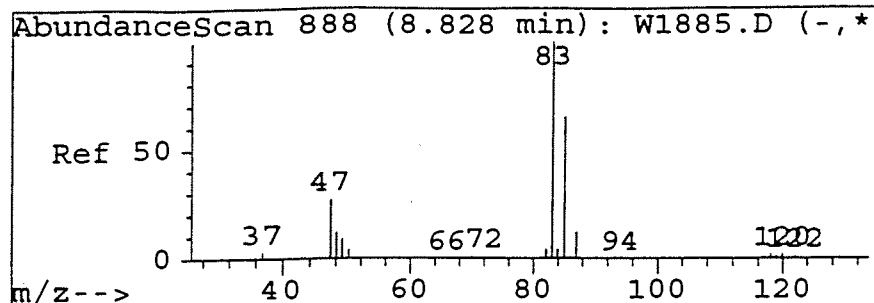


#17
1,2-Dichloroethene (cis-)
Concen: 0.87 ug/l
RT: 8.68 min Scan# 877
Delta R.T. -0.27 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am



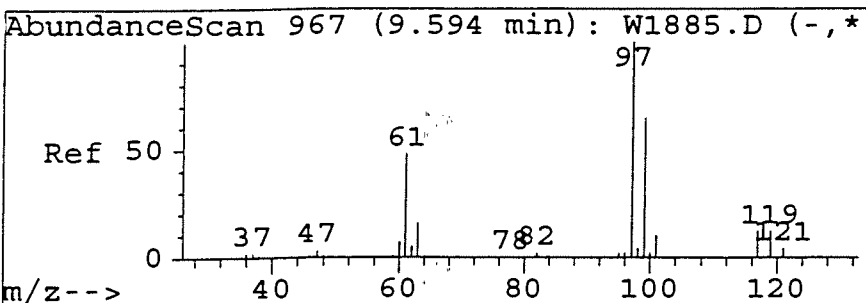
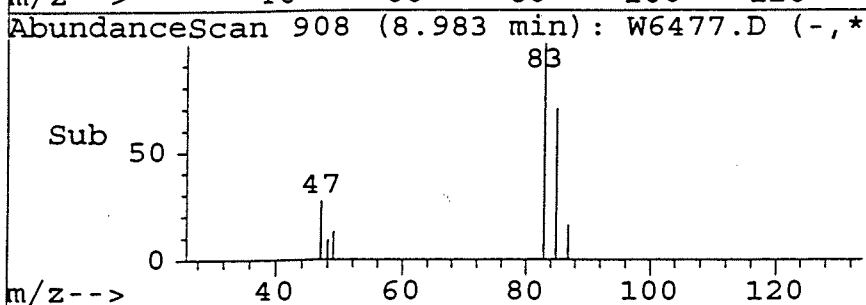
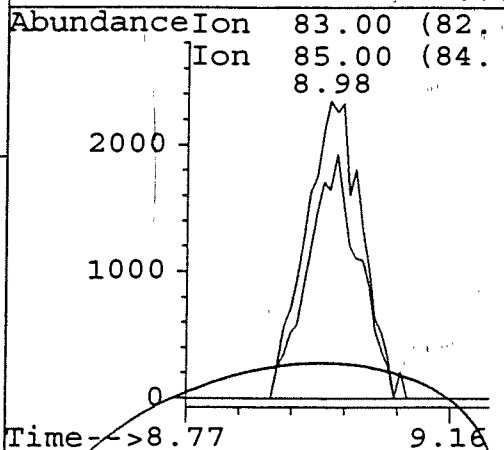
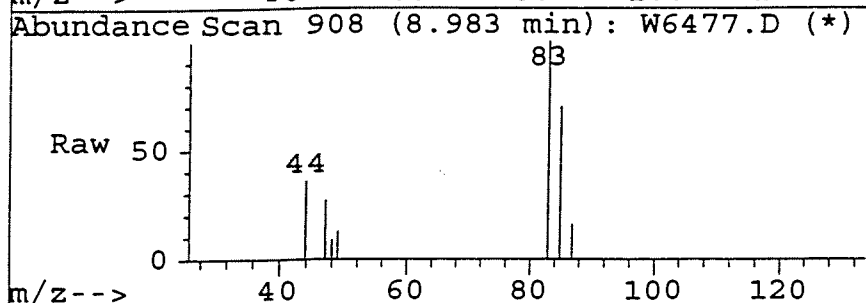
Tgt Ion	Ratio	Lower	Upper
96	100		
61	114.8	84.0	184.0
98	66.8	14.7	114.7
0	0.0	0.0	0.0





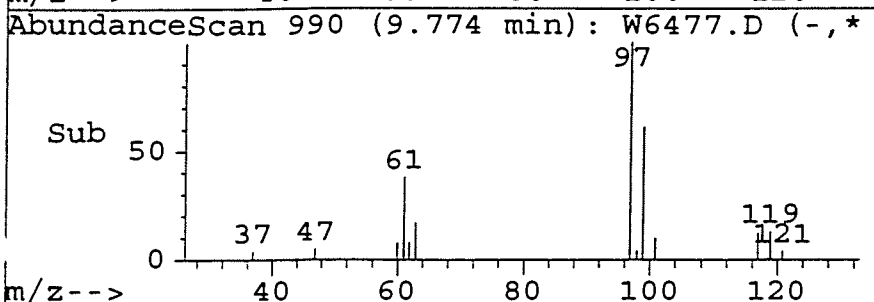
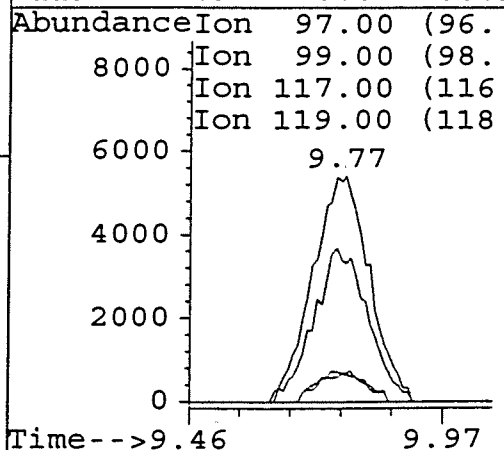
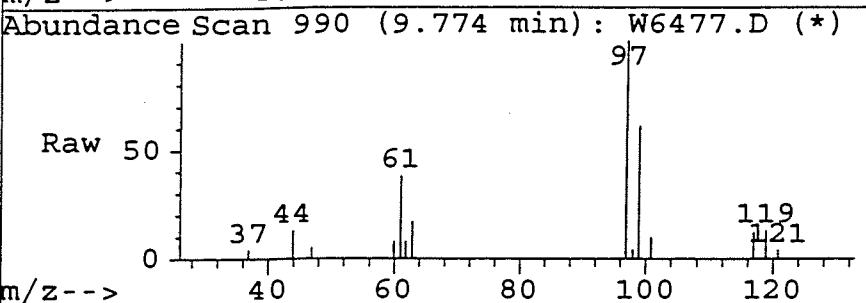
#19
Chloroform
Concen: 0.99 ug/l
RT: 8.98 min Scan# 908
Delta R.T. -0.26 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am

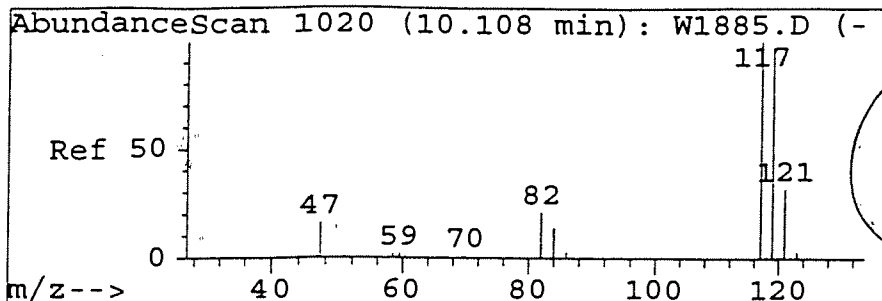
Tgt Ion:83	Resp:	13666
Ion Ratio	Lower	Upper
83 100		
85 74.0	17.3	117.3
0 0.0	0.0	0.0
0 0.0	0.0	0.0



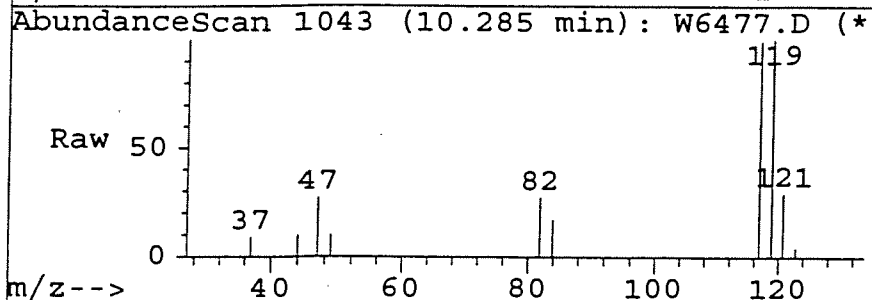
#22
1,1,1-Trichloroethane
Concen: 2.58 ug/l
RT: 9.77 min Scan# 990
Delta R.T. -0.26 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am

Tgt Ion:97	Resp:	42805
Ion Ratio	Lower	Upper
97 100		
99 64.6	18.2	118.2
117 11.7	0.0	57.5
119 10.9	0.0	60.9

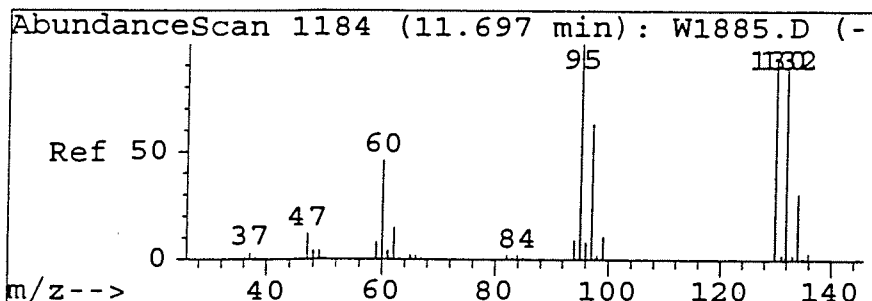
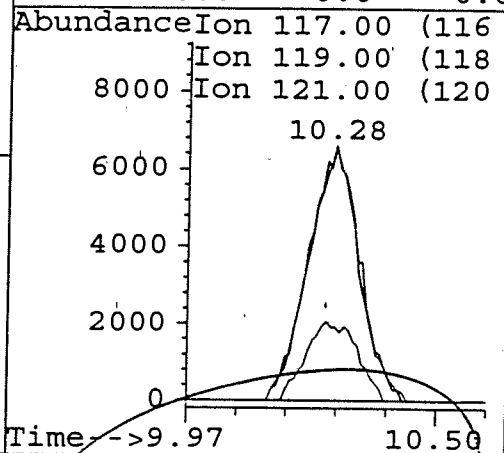
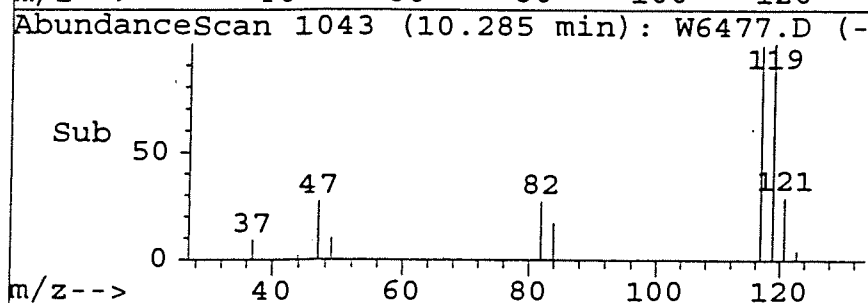




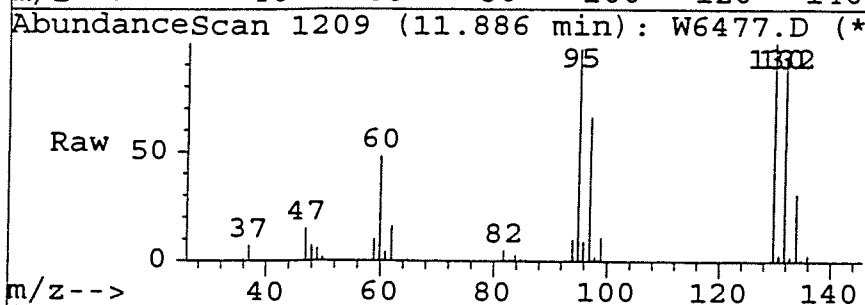
#23
Carbon Tetrachloride
Concen: 3.20 ug/l
RT: 10.28 min Scan# 1043
Delta R.T. -0.27 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am



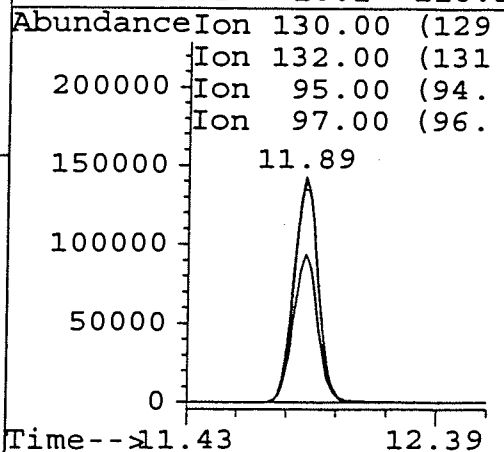
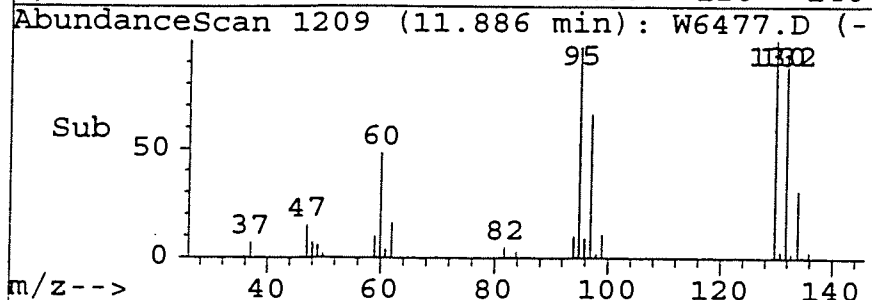
Tgt Ion:	117	Resp:	49594
Ion	Ratio	Lower	Upper
117	100		
119	100.1	47.3	147.3
121	31.3	0.0	82.4
0	0.0	0.0	0.0

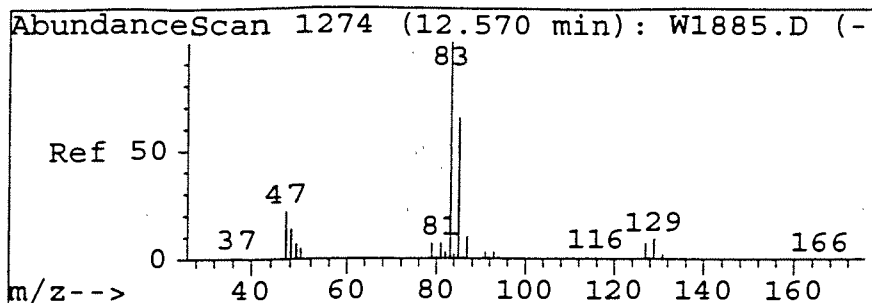


#25
Trichloroethene
Concen: 78.47 ug/l
RT: 11.89 min Scan# 1209
Delta R.T. -0.26 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am



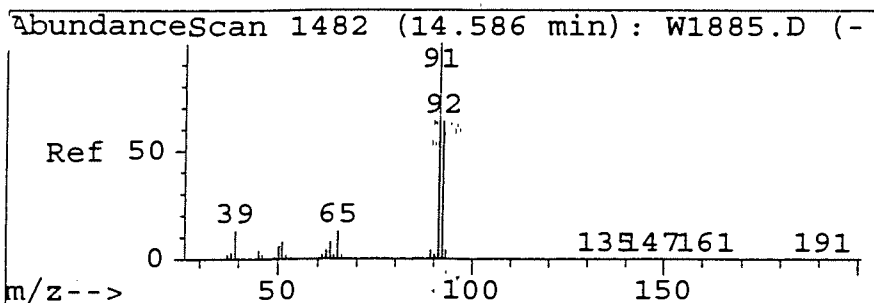
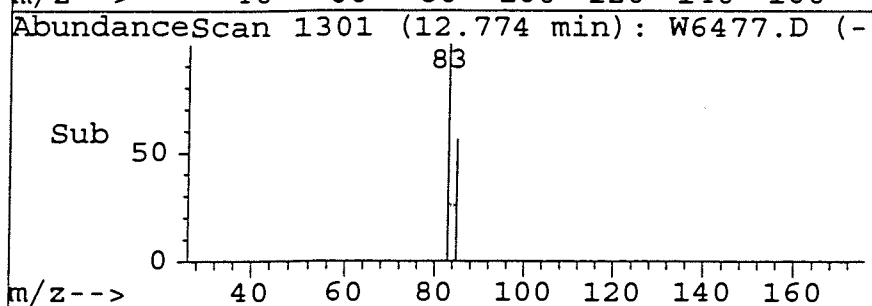
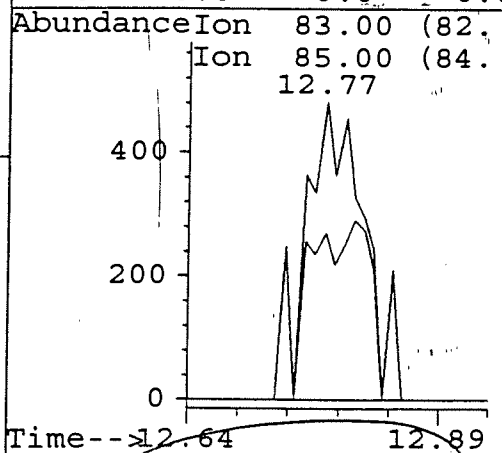
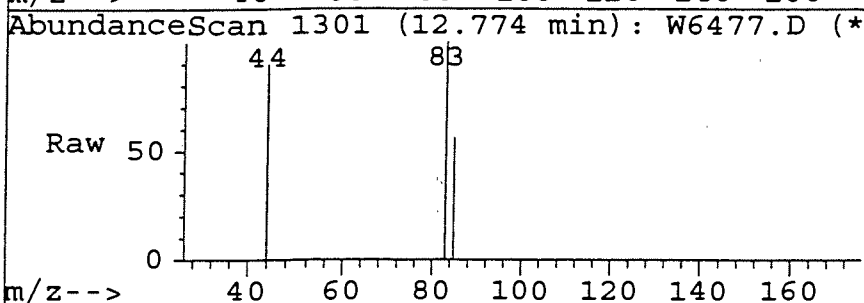
Tgt Ion:	130	Resp:	931452
Ion	Ratio	Lower	Upper
130	100		
132	96.7	46.4	146.4
95	98.6	54.1	154.1
97	65.2	16.2	116.2





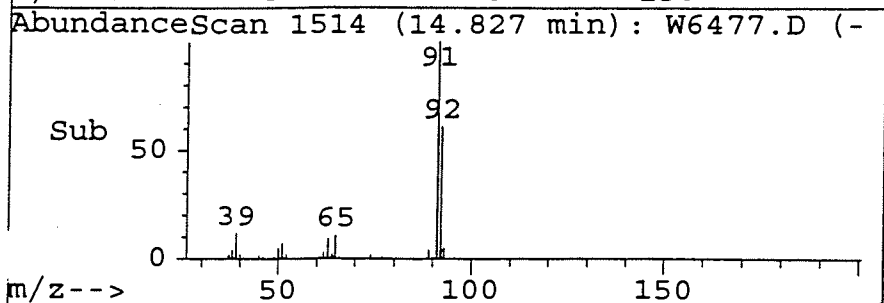
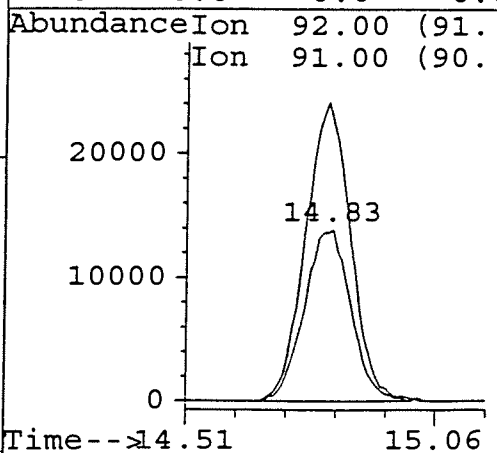
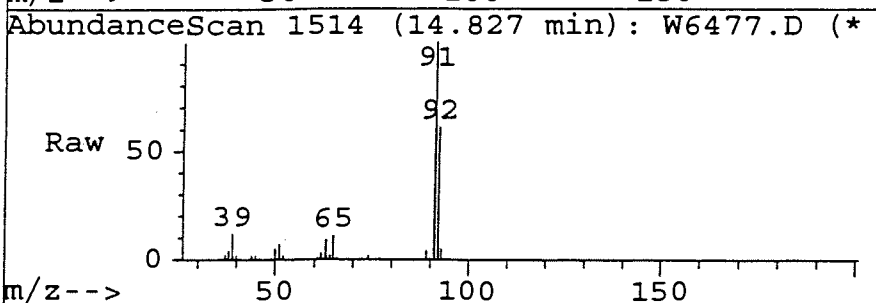
#28
Bromodichloromethane
Concen: 0.14 ug/l
RT: 12.77 min Scan# 1301
Delta R.T. -0.10 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am

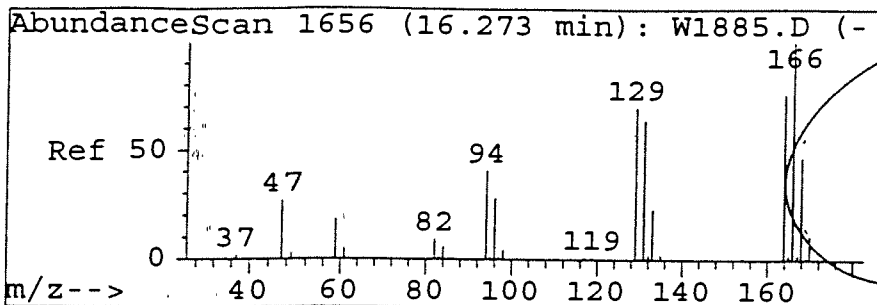
Tgt Ion:83	Resp:	1920
Ion Ratio	Lower	Upper
83	100	
85	29.4	14.2 114.2
0	0.0	0.0 0.0
0	0.0	0.0 0.0



#35
Toluene
Concen: 5.81 ug/l
RT: 14.83 min Scan# 1514
Delta R.T. -0.30 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am

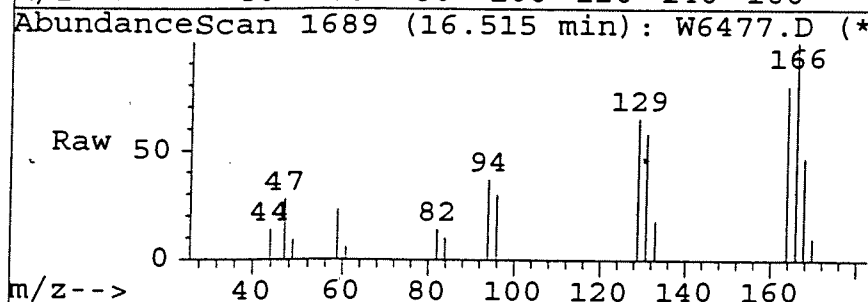
Tgt Ion:92	Resp:	96719
Ion Ratio	Lower	Upper
92	100	
91	168.9	117.6 217.6
0	0.0	0.0 0.0
0	0.0	0.0 0.0



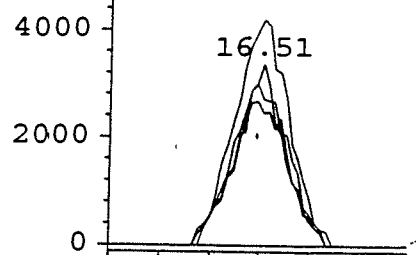


#37
Tetrachloroethene
Concen: 1.62 ug/l
RT: 16.51 min Scan# 1689
Delta R.T. -0.27 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am

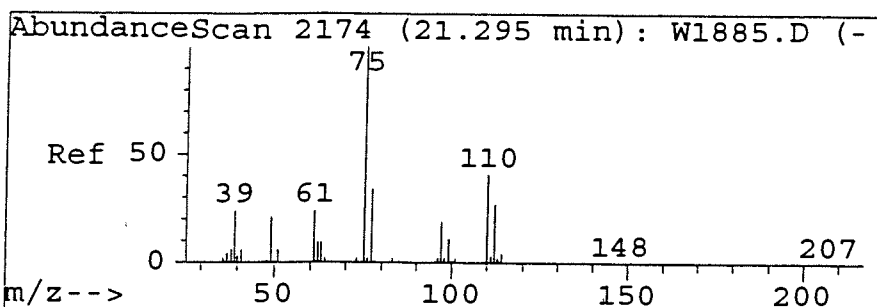
Tgt Ion:164 Resp: 19775
Ion Ratio Lower Upper
164 100
166 133.0 81.6 181.6
129 90.5 33.6 133.6
131 86.1 29.4 129.4



AbundanceIon 164.00 (163
Ion 166.00 (165
Ion 129.00 (128
Ion 131.00 (130

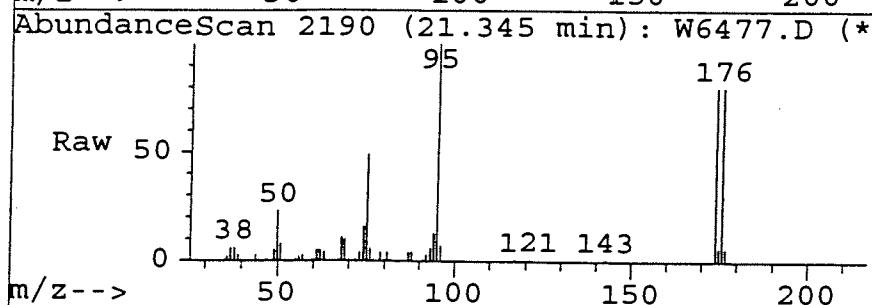


Time--> 16.26 16.67

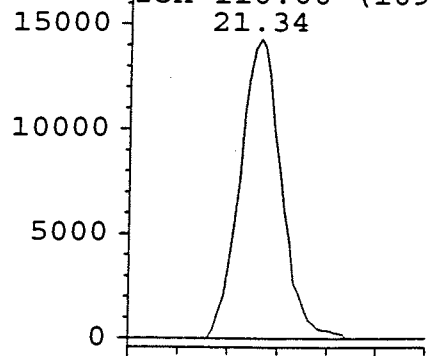


#50
1,2,3-Trichloropropane
Concen: 24.86 ug/l
RT: 21.34 min Scan# 2190
Delta R.T. -0.19 min
Lab File: W6477.D
Acq: 17 Jul 96 9:11 am

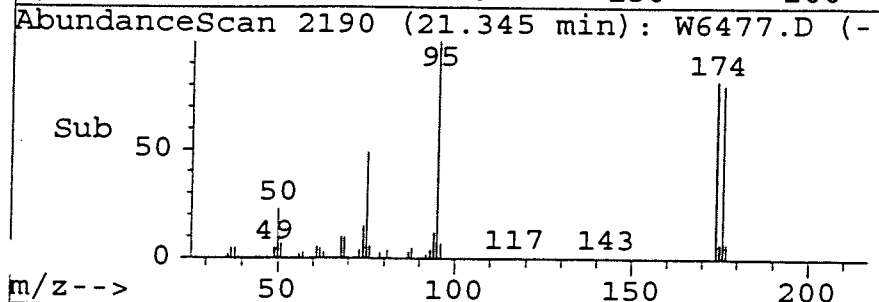
Tgt Ion:75 Resp: 79394
Ion Ratio Lower Upper
75 100
110 0.0 0.0 86.0
0 0.0 0.0 0.0
0 0.0 0.0 0.0



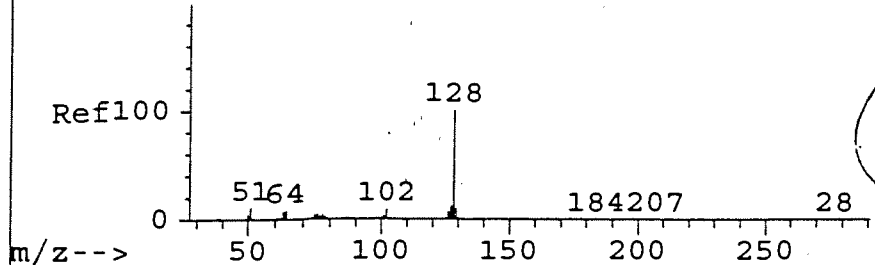
AbundanceIon 75.00 (74.
Ion 110.00 (109
21.34



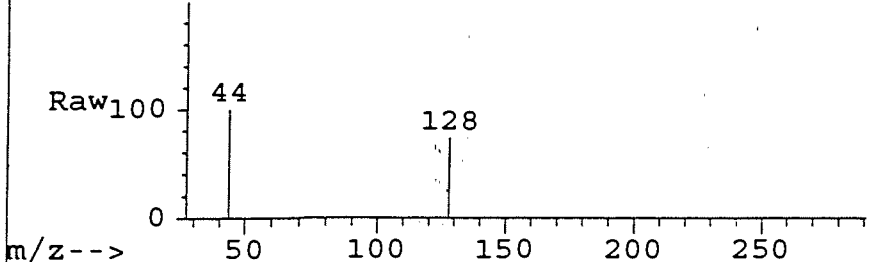
Time--> 21.09 21.58



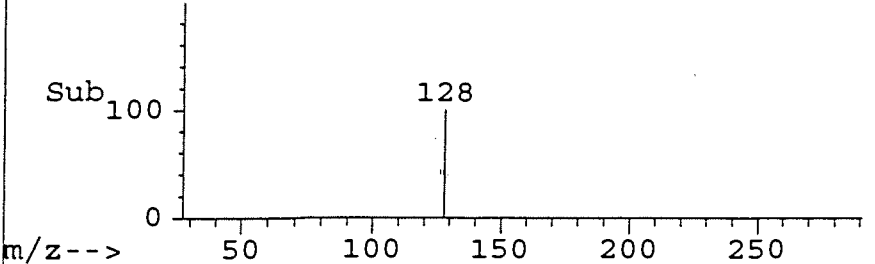
AbundanceScan 2907 (28.414 min): W1885.D (-



AbundanceScan 2943 (28.605 min): W6477.D (*)



AbundanceScan 2943 (28.605 min): W6477.D (-



#65

Naphthalene

Concen: 0.15 ug/l

RT: 28.61 min Scan# 2943

Delta R.T. -0.21 min

Lab File: W6477.D

Acq: 17 Jul 96 9:11 am

Tgt Ion:128 Resp: 1775

Ion Ratio Lower Upper

128 100

102 0.0 0.0 81.5

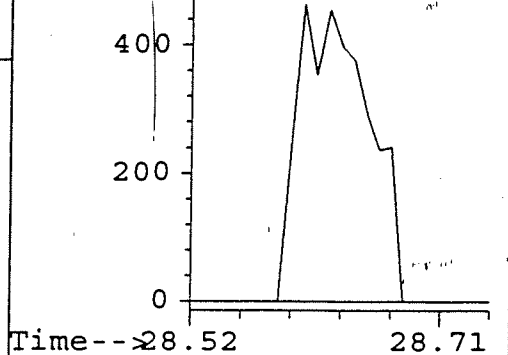
0 0.0 0.0 0.0

0 0.0 0.0 0.0

AbundanceIon 128.00 (127

Ion 102.00 (101

28.61



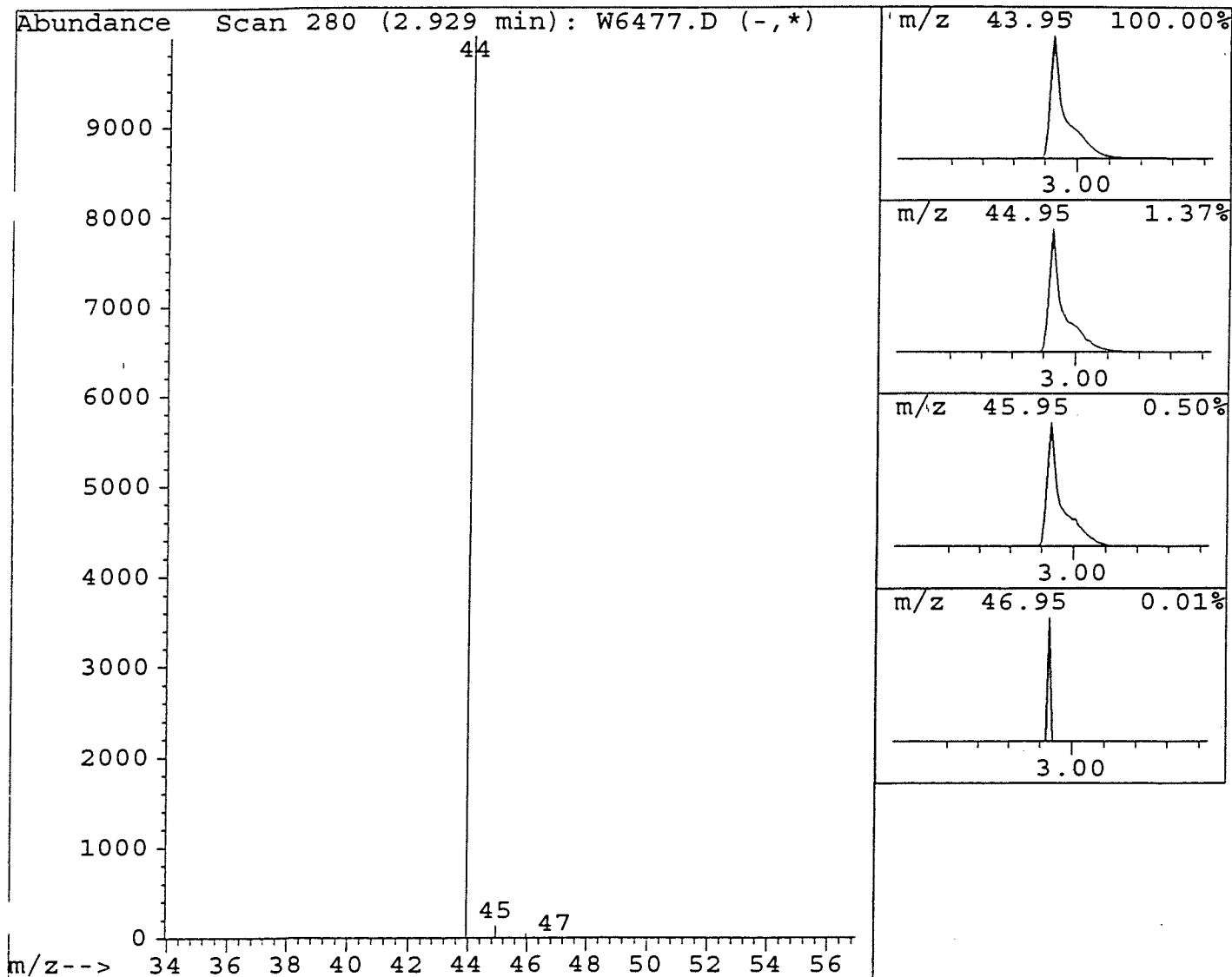
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL16\W6477.D
Acq Time : 17 Jul 96 9:11 am
Sample : 10PPB-QCCS-3/B#96421
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.93	195.14 ug/l	11172870	Fluorobenzene	11.03	
Hit#	of	Tentative ID	Ref#	CAS#	Qual
1	No Hits	From C:\DATABASE\NBS75K.L	0	000000-00-0	0



Library Search Compound Report

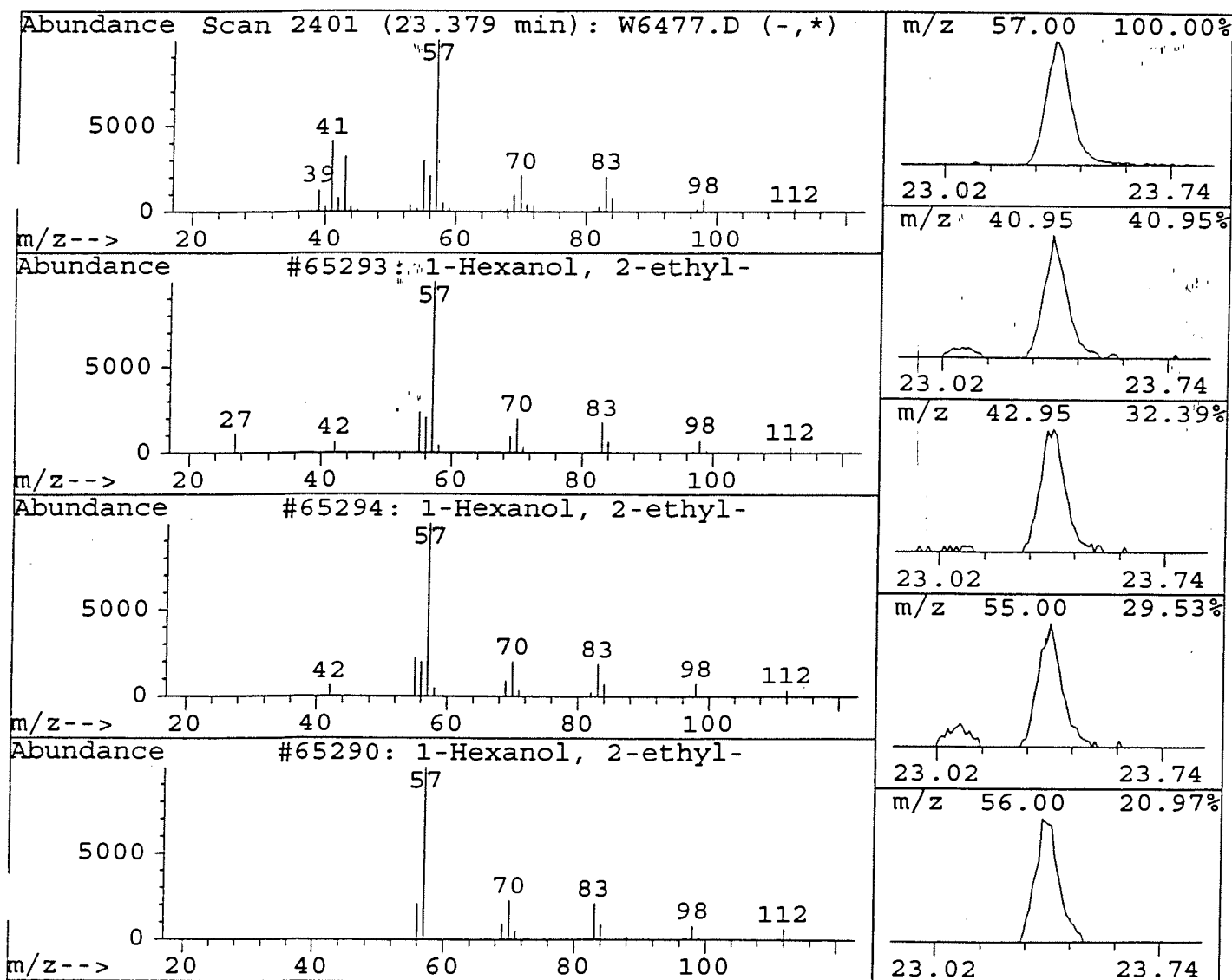
Data File : C:\HPCHEM\1\DATA\JUL16\W6477.D
Acq Time : 17 Jul 96 9:11 am
Sample : 10PPB-QCCS-3/B#96421
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
23.38	4.71 ug/l	269788	Fluorobenzene	11.03

Hit# of 20	Tentative ID	Ref#	CAS#	Qual
1	1-Hexanol, 2-ethyl-	65293	000104-76-7	83
2	1-Hexanol, 2-ethyl-	65294	000104-76-7	78
3	1-Hexanol, 2-ethyl-	65290	000104-76-7	78
4	1-Hexanol, 2-ethyl-	65292	000104-76-7	78
5	1-Hexanol, 2-ethyl-	5518	000104-76-7	78

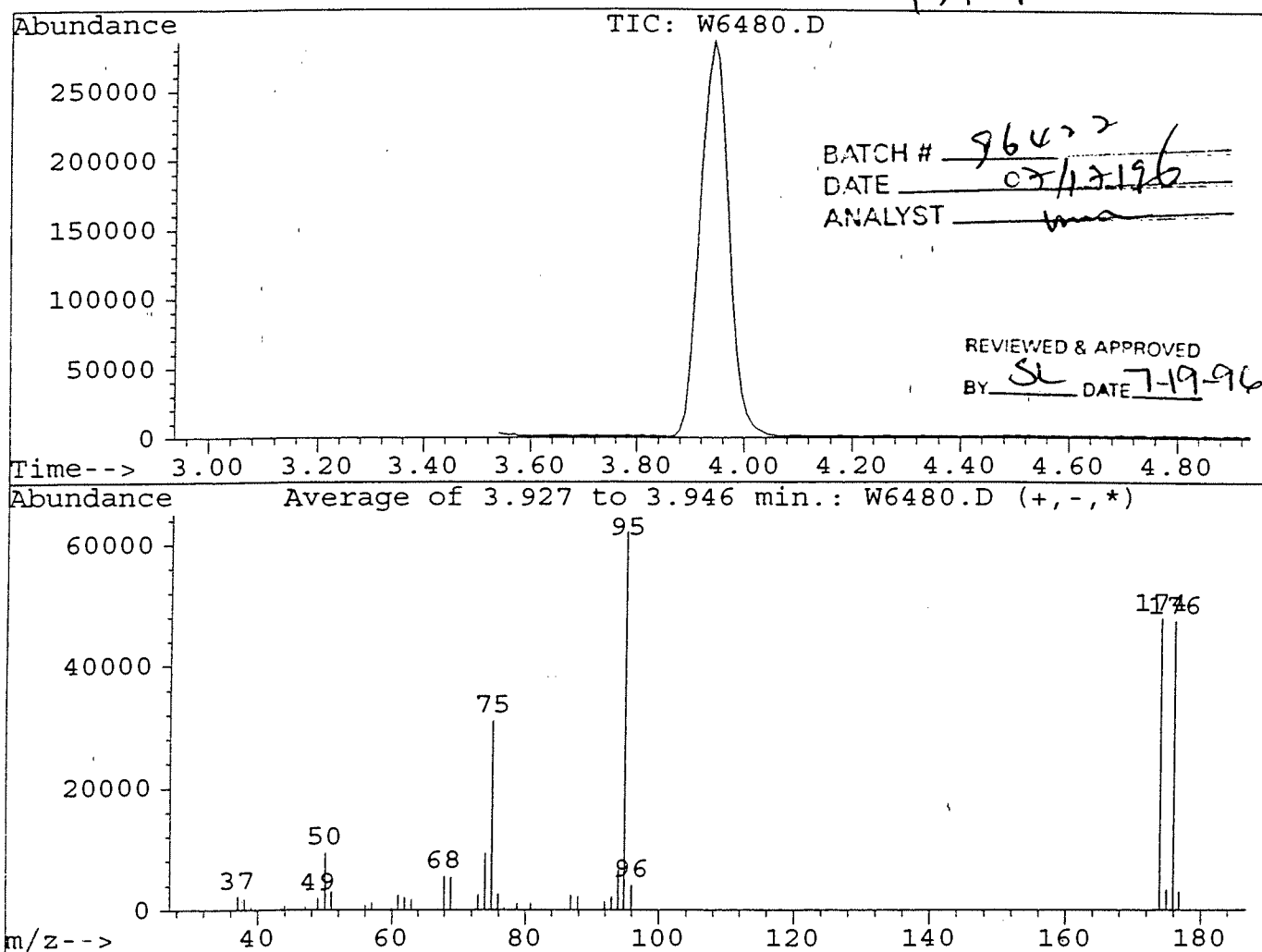


BFB

Data File : C:\HPCHEM\1\DATA\JUL17\W6480.D
 Acq Time : 17 Jul 96 12:49 pm
 Sample : 50 NG BFB/B#96422
 Misc : 1UL/VO9602070

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
 Title :



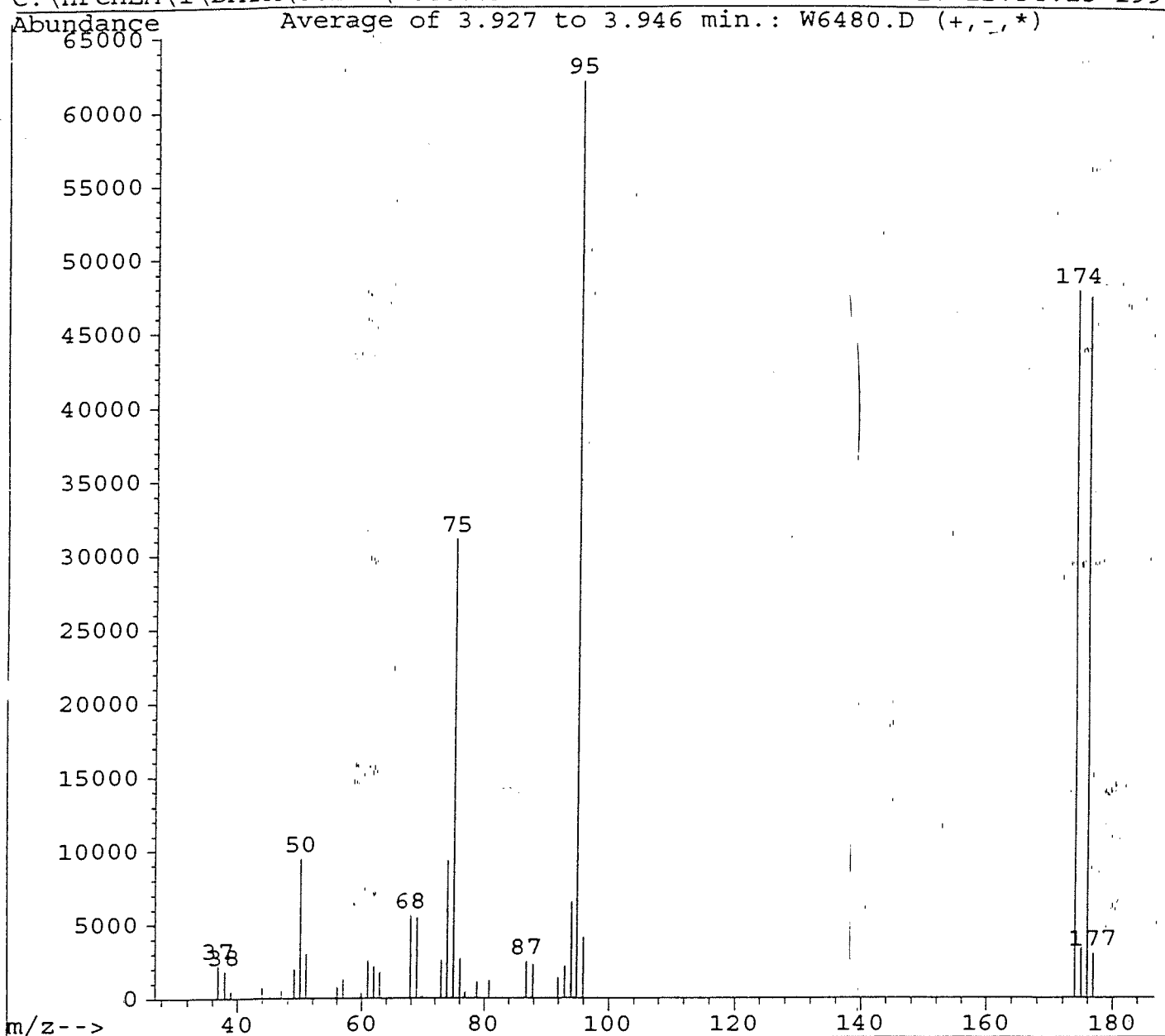
Peak Apex is scan: 42

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.2	9431	PASS
75	95	30	60	50.1	31064	PASS
95	95	100	100	100.0	62040	PASS
96	95	5	9	6.6	4122	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	77.1	47851	PASS
175	174	5	9	7.0	3358	PASS
176	174	95	101	99.1	47403	PASS
177	176	5	9	6.3	2981	PASS

BFB 624 Results

C:\HPCHEM\1\DATA\JUL17\W6480.D

Wed Jul 17 12:54:13 1996



Peak Apex is scan: 42

Average of 3 scans: 41,42,43 minus background scan 34

Target Mass	Comparison Mass	Lower Limit, %	Upper Limit, %	Relative Abundance, %	Result Pass/Fail
50	95	15	40	15.2	PASS
75	95	30	60	50.1	PASS
95	95	100	100	100.0	PASS
96	95	5	9	6.6	PASS
173	174	0	2	0.0	PASS
174	95	50	100	77.1	PASS
175	174	5	9	7.0	PASS
176	174	95	101	99.1	PASS
177	176	5	9	6.3	PASS

002060

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6481.D
 Acq Time : 17 Jul 96 1:00 pm
 Sample : VSTD010/10PPB-524.2/B#96422
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 13:32 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96 ON 537-8
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

4 out of 130/0

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.10	96	300969	10.00	ug/l	-0.02

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
45) 1,2-Dichlorobenzene-d4	24.80	150	199132	11.50	ug/l	114.97%
47) Bromofluorobenzene	21.35	95	170891	10.47	ug/l	104.65%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethane	3.20	85	145435	13.43	ug/l	98
3) Chloromethane	3.57	50	36103	10.71	ug/l	93
4) Vinyl Chloride	3.73	62	47177	11.87	ug/l	96
5) Bromomethane	4.39	94	73119	11.98	ug/l	94
6) Chloroethane	4.50	64	30991	11.14	ug/l	93
7) Freon 123	4.85	83	179705	12.55	ug/l	97
8) Trichlorofluoromethane	4.88	101	198901	13.63	ug/l	99
9) Acetone	5.60	43	11514	44.91	ug/l	100
10) 1,1-Dichloroethene	5.79	96	73755	12.55	ug/l	97
11) Freon 113	5.50	101	174453	13.52	ug/l	95
12) Methylene Chloride	6.54	84	51678	12.11	ug/l	91
13) 1,2-Dichloroethene (trans-)	7.01	96	70766	12.15	ug/l	94
14) 1,1-Dichloroethane	7.70	63	98517	11.50	ug/l	99
15) Methyl Ethyl Ketone	8.44	43	7171	18.50	ug/l	# 100
16) 2,2-Dichloropropane	8.69	77	101357	7.89	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.78	96	66336	9.56	ug/l	98
18) Bromochloromethane	9.38	130	42430	7.59	ug/l	80
19) Chloroform	9.07	83	122749	8.55	ug/l	100
20) 1,1-Dichloropropene	10.13	75	140228	10.95	ug/l	96
21) 1,2-Dichloroethane	10.63	62	73493	11.26	ug/l	97
22) 1,1,1-Trichloroethane	9.85	97	193724	11.26	ug/l	96
23) Carbon Tetrachloride	10.36	117	179110	11.13	ug/l	99
24) Benzene	10.68	78	234568	10.16	ug/l	100
25) Trichloroethene	11.94	130	139258	11.29	ug/l	94
26) 1,2-Dichloropropane	12.33	63	80003	10.08	ug/l	54
27) Dibromomethane	12.95	174	65129	11.27	ug/l	82
28) Bromodichloromethane	12.83	83	157443	10.79	ug/l	97
29) Methyl Isobutyl Ketone	13.61	43	67813	42.39	ug/l	93
30) cis-1,3-Dichloropropene	14.05	75	108109	10.39	ug/l	96
31) trans-1,3-Dichloropropene	15.29	75	79554	10.78	ug/l	99
32) 1,3-Dichloropropane	16.35	76	78340	10.77	ug/l	97
33) Dibromochloromethane	17.01	129	116539	11.20	ug/l	99
34) Bromoform	20.73	173	61749	11.89	ug/l	100
35) Toluene	14.85	92	186466	10.79	ug/l	97
36) 1,1,2-Trichloroethane	15.71	97	56929	10.84	ug/l	99
37) Tetrachloroethene	16.52	164	147124	11.57	ug/l	96
38) 1,2-Dibromoethane	17.52	107	83663	11.38	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6481.D
Acq Time : 17 Jul 96 1:00 pm
Sample : VSTD010/10PPB-524.2/B#96422
Misc : 25ML/VO9607015
Quant Time: Jul 17 13:32 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Chlorobenzene	18.54	112	255158	11.13	ug/l	99
40) 1,1,1,2-Tetrachloroethane	18.64	131	121007	11.30	ug/l	97
41) Ethylbenzene	18.67	106	130437	11.40	ug/l	92
42) m,p-Xylenes	18.87	106	314116	22.68	ug/l	93
43) o-Xylene	19.89	106	145263	11.22	ug/l	90
44) Styrene	19.96	104	224295	11.37	ug/l	99
46) Isopropylbenzene	20.74	105	456091	11.61	ug/l	97
48) Bromobenzene	21.80	77	214724	10.89	ug/l	91
49) 1,1,2,2-Tetrachloroethane	21.16	83	68880	11.42	ug/l	98
50) 1,2,3-Trichloropropane	21.51	75	41791	12.65	ug/l	88
51) n-Propylbenzene	21.74	91	544136	11.54	ug/l	93
52) 2-Chlorotoluene	22.14	91	357524	11.25	ug/l	90
53) 4-Chlorotoluene	22.25	91	313340	11.08	ug/l	83
54) 1,3,5-Trimethylbenzene	22.11	105	331541	11.54	ug/l	94
55) Tert-Butylbenzene	22.94	119	387525	12.11	ug/l	98
56) 1,2,4-Trimethylbenzene	23.02	105	336323	11.60	ug/l	96
57) Sec-Butylbenzene	23.41	105	575752	12.21	ug/l	98
58) 1,3-Dichlorobenzene	23.88	146	230272	11.67	ug/l	98
59) 1,4-Dichlorobenzene	24.10	146	240565	12.12	ug/l	99
60) p-Isopropyltoluene	23.71	119	445431	12.36	ug/l	98
61) 1,2-Dichlorobenzene	24.86	146	187296	11.97	ug/l	97
62) n-Butylbenzene	24.56	91	448995	12.28	ug/l	97
63) 1,2-Dibromo-3-Chloropropan	26.36	75	12313	12.16	ug/l	68
64) 1,2,4-Trichlorobenzene	28.07	180	174644	12.20	ug/l	96
65) Naphthalene	28.61	128	147682	12.40	ug/l	95
66) Hexachlorobutadiene	28.37	225	156972	12.03	ug/l	96
67) 1,2,3-Trichlorobenzene	29.18	180	138346	12.59	ug/l	98

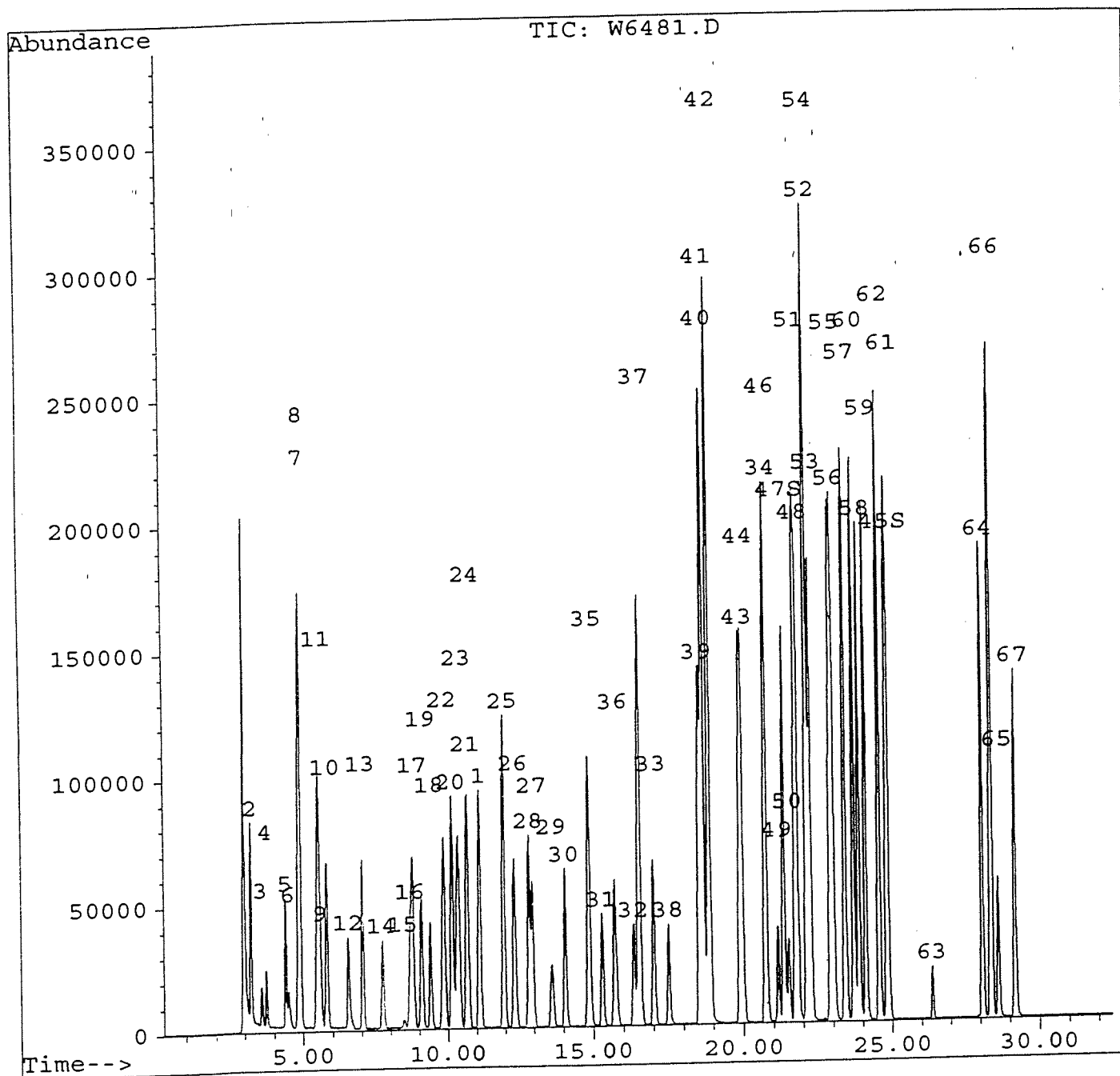
002062

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6481.D
 Acq Time : 17 Jul 96 1:00 pm
 Sample : VSTD010/10PPB-524.2/B#96422
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 13:32 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



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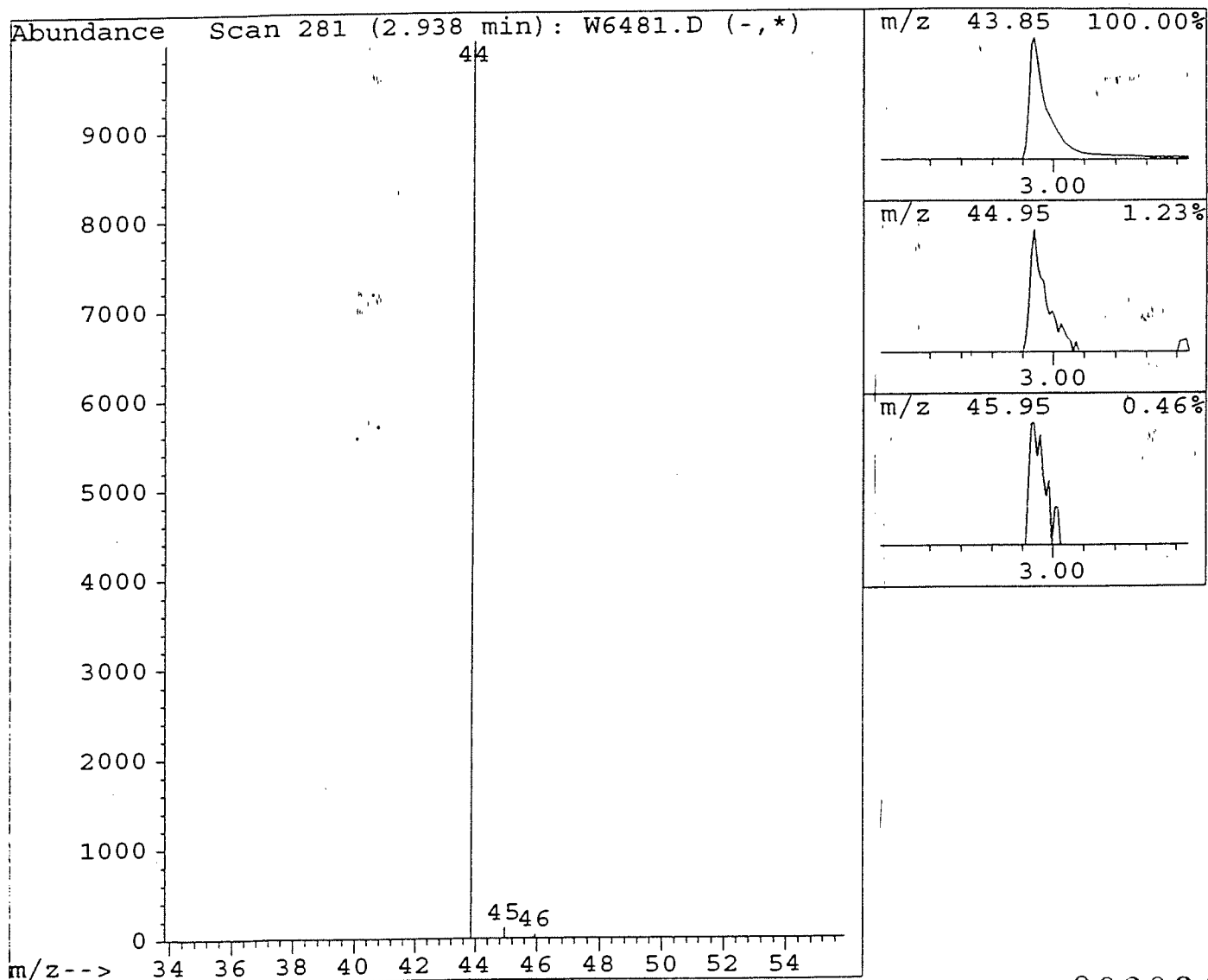
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6481.D
Acq Time : 17 Jul 96 1:00 pm
Sample : VSTD010/10PPB-524.2/B#96422
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.94	12.82 ug/l	780673	Fluorobenzene	11.10	
Hit#	of	Tentative ID	Ref#	CAS#	Qual
1	No Hits	From C:\DATABASE\NBS75K.L	0	000000-00-0	0



002064

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6481.D
 Acq Time : 17 Jul 96 1:00 pm
 Sample : VSTD010/10PPB-524.2/B#96422
 SC : 25ML/VO9607015

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Min. RRF : 0.100 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
1	Fluorobenzene	1.000	1.000	0.0	63	-0.02
2	Dichlorodifluoromethane	0.360	0.483	-34.3#	84	0.09
3	Chloromethane	0.112	0.120	-7.1	66	0.08
4	Vinyl Chloride	0.132	0.157	-18.7	73	0.06
5	Bromomethane	0.203	0.243	-19.8	76	0.03
6	Chloroethane	0.092	0.103	-11.4	69	0.03
7	Freon 123	0.476	0.597	-25.5	75	0.00
8	Trichlorofluoromethane	0.485	0.661	-36.3#	82	0.00
9	Acetone	0.009	0.010#	-12.3	83	-0.03
10	1,1-Dichloroethene	0.195	0.245	-25.5	77	-0.04
11	Freon 113	0.429	0.580	-35.2#	81	-0.04
12	Methylene Chloride	0.142	0.172	-21.1	77	-0.06
13	1,2-Dichloroethene (trans-)	0.193	0.235	-21.5	75	-0.10
14	1,1-Dichloroethane	0.285	0.327	-15.0	72	-0.15
15	Methyl Ethyl Ketone	0.013	0.006#	53.8#	25#	-0.42
16	2,2-Dichloropropane	0.427	0.337	21.1	45#	-0.18
17	1,2-Dichloroethene (cis-)	0.231	0.220	4.4	46#	-0.17
18	Bromochloromethane	0.186	0.141	24.1	48#	-0.18
19	Chloroform	0.477	0.408	14.5	47#	-0.17
20	1,1-Dichloropropene	0.426	0.466	-9.5	65	-0.21
21	1,2-Dichloroethane	0.217	0.244	-12.6	72	-0.21
22	1,1,1-Trichloroethane	0.572	0.644	-12.6	67	-0.18
23	Carbon Tetrachloride	0.534	0.595	-11.3	65	-0.19
24	Benzene	0.767	0.779	-1.6	64	-0.05
25	Trichloroethene	0.410	0.463	-12.9	68	-0.21
26	1,2-Dichloropropane	0.264	0.266	-0.8	64	-0.22
27	Dibromomethane	0.192	0.216	-12.7	71	-0.23
28	Bromodichloromethane	0.485	0.523	-7.9	67	-0.04
29	Methyl Isobutyl Ketone	0.053	0.056#	-6.0	67	-0.19
30	cis-1,3-Dichloropropene	0.346	0.359	-3.9	65	-0.24
31	trans-1,3-Dichloropropene	0.245	0.264	-7.8	69	-0.27
32	1,3-Dichloropropane	0.242	0.260	-7.7	68	-0.24
33	Dibromochloromethane	0.346	0.387	-12.0	71	-0.24
34	Bromoform	0.173	0.205	-18.9	75	-0.23
35	Toluene	0.574	0.620	-7.9	66	-0.28
36	1,1,2-Trichloroethane	0.175	0.189	-8.4	69	-0.24
37	Tetrachloroethene	0.423	0.489	-15.7	69	-0.26
38	1,2-Dibromoethane	0.244	0.278	-13.8	72	-0.22
39	Chlorobenzene	0.762	0.848	-11.3	69	-0.20
40	1,1,1,2-Tetrachloroethane	0.356	0.402	-13.0	71	-0.21
41	Ethylbenzene	0.380	0.433	-14.0	69	-0.02
42	m,p-Xylenes	0.460	0.522	-13.4	70	0.00
43	o-Xylene	0.430	0.483	-12.2	70	-0.18
44	Styrene	0.655	0.745	-13.7	71	-0.18
45 S	1,2-Dichlorobenzene-d4	0.575	0.662	-15.0	76	-0.13
46	Isopropylbenzene	1.306	1.515	-16.1	69	-0.21

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47 S	Bromofluorobenzene	0.543	0.568	-4.7	68	-0.20
48	Bromobenzene	0.655	0.713	-8.9	68	-0.20
49	1,1,2,2-Tetrachloroethane	0.200	0.229	-14.2	74	0.00
50	1,2,3-Trichloropropane	0.110	0.139	-26.5	74	-0.02
51	n-Propylbenzene	1.566	1.808	-15.4	69	-0.18
5	2-Chlorotoluene	1.056	1.188	-12.5	72	-0.02
53	4-Chlorotoluene	0.939	1.041	-10.8	68	0.00
54	1,3,5-Trimethylbenzene	0.955	1.102	-15.4	69	-0.17
55	Tert-Butylbenzene	1.063	1.288	-21.1	72	-0.13
56	1,2,4-Trimethylbenzene	0.964	1.117	-16.0	71	0.01
57	Sec-Butylbenzene	1.566	1.913	-22.1	72	-0.13
58	1,3-Dichlorobenzene	0.656	0.765	-16.7	73	0.00
59	1,4-Dichlorobenzene	0.660	0.799	-21.2	75	0.00
60	p-Isopropyltoluene	1.197	1.480	-23.6	73	-0.12
61	1,2-Dichlorobenzene	0.520	0.622	-19.7	75	-0.12
62	n-Butylbenzene	1.215	1.492	-22.8	72	-0.10
63	1,2-Dibromo-3-Chloropropane	0.034	0.041#	-21.6	77	-0.10
64	1,2,4-Trichlorobenzene	0.476	0.580	-22.0	77	-0.17
65	Naphthalene	0.396	0.491	-24.0	82	-0.21
66	Hexachlorobutadiene	0.434	0.522	-20.3	70	0.00
67	1,2,3-Trichlorobenzene	0.365	0.460	-25.9	80	-0.24

(#) = Out of Range
W6399.D 524JL.M

SPCC's out = 0 CCC's out = 0
Wed Jul 17 14:39:39 1996 VOA3

002066

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6482.D

Acq Time : 17 Jul 96 1:38 pm

Sample : 10FPB-QCCS-1/B#96422

Misc : 25ML/VO9607015

Quant Time: Jul 17 14:11 1996

BATCH #

DATE

ANALYST

Operator: DEBBIE

Inst

Multiplr: 1.00

BY: DATE 7-19-96

Method : C:\HPCHEM\1\METHODS\524JL.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Last Update : Tue Jul 16 10:03:38 1996

Response via : Multiple Level Calibration

✓=07-2453

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
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1) Fluorobenzene	11.11	96	326798	10.00	ug/l	-0.01
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System Monitoring Compounds

%Recovery

45) 1,2-Dichlorobenzene-d4	24.80	150	208127	11.07	ug/l	110.67%
47) Bromofluorobenzene	21.34	95	181237	10.22	ug/l	102.22%

Target Compounds

Qvalue

2) Dichlorodifluoromethane	3.21	85	116560	9.91	ug/l	98
3) Chloromethane	3.57	50	33789	9.23	ug/l	93
4) Vinyl Chloride	3.73	62	42390	9.82	ug/l	98
5) Bromomethane	4.39	94	63541	9.59	ug/l	90
6) Chloroethane	4.50	64	26785	8.87	ug/l	99
7) Freon 123	4.85	83	151216	9.73	ug/l	96
8) Trichlorofluoromethane	4.88	101	161587	10.20	ug/l	99
9) Acetone	5.59	43	8152	29.28	ug/l	100
10) 1,1-Dichloroethene	5.79	96	61753	9.68	ug/l	96
11) Freon 113	5.50	101	140872	10.05	ug/l	95
12) Methylene Chloride	6.53	84	45505	9.82	ug/l	91
13) 1,2-Dichloroethene (trans-)	7.02	96	62032	9.81	ug/l	95
14) 1,1-Dichloroethane	7.72	63	86544	9.30	ug/l	98
15) Methyl Ethyl Ketone	8.59	43	266	0.63	ug/l	# 100
16) 2,2-Dichloropropane	8.73	77	108921	7.81	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.79	96	86379	11.46	ug/l	98
18) Bromochloromethane	9.40	130	55115	9.08	ug/l	83
19) Chloroform	9.09	83	159682	10.24	ug/l	99
20) 1,1-Dichloropropene	10.15	75	126528	9.10	ug/l	97
21) 1,2-Dichloroethane	10.65	62	66655	9.41	ug/l	98
22) 1,1,1-Trichloroethane	9.85	97	173897	9.31	ug/l	96
23) Carbon Tetrachloride	10.37	117	155590	8.91	ug/l	99
24) Benzene	10.70	78	219208	8.74	ug/l	100
25) Trichloroethene	11.96	130	124569	9.30	ug/l	95
26) 1,2-Dichloropropane	12.33	63	70676	8.20	ug/l	52
27) Dibromomethane	12.96	174	56168	8.95	ug/l	79
28) Bromodichloromethane	12.84	83	141480	8.93	ug/l	98
29) Methyl Isobutyl Ketone	13.61	43	61357	35.32	ug/l	93
30) cis-1,3-Dichloropropene	14.06	75	96470	8.53	ug/l	98
31) trans-1,3-Dichloropropene	15.30	75	67916	8.48	ug/l	98
32) 1,3-Dichloropropane	16.36	76	70205	8.89	ug/l	97
33) Dibromochloromethane	17.01	129	99326	8.79	ug/l	100
34) Bromoform	20.72	173	52601	9.32	ug/l	100
35) Toluene	14.85	92	165220	8.80	ug/l	99
36) 1,1,2-Trichloroethane	15.69	97	50450	8.84	ug/l	100
37) Tetrachloroethene	16.53	164	125056	9.06	ug/l	96
38) 1,2-Dibromoethane	17.52	107	71246	8.93	ug/l	99

(#) = qualifier out of range (m) = manual integration

W6482.D 524JL.M

Wed Jul 17 14:12:04 1996

VOA3

002067 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6482.D
 Acq Time : 17 Jul 96 1:38 pm
 Sample : 10PPB-QCCS-1/B#96422
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 14:11 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Chlorobenzene	18.54	112	225703	9.07	ug/l	99
40) 1,1,1,2-Tetrachloroethane	18.63	131	104865	9.02	ug/l	96
41) Ethylbenzene	18.68	106	110211	8.87	ug/l	97
42) m,p-Xylenes	18.86	106	273914	18.21	ug/l	92
43) o-Xylene	19.88	106	126792	9.02	ug/l	90
44) Styrene	19.96	104	198868	9.29	ug/l	97
46) Isopropylbenzene	20.73	105	390252	9.15	ug/l	97
48) Bromobenzene	21.80	77	194939	9.10	ug/l	93
49) 1,1,2,2-Tetrachloroethane	21.14	83	59154	9.03	ug/l	98
50) 1,2,3-Trichloropropane	21.51	75	38309	10.68	ug/l	93
51) n-Propylbenzene	21.73	91	469071	9.16	ug/l	94
52) 2-Chlorotoluene	22.14	91	309910	8.98	ug/l	86
53) 4-Chlorotoluene	22.25	91	285876	9.31	ug/l	83
54) 1,3,5-Trimethylbenzene	22.11	105	290449	9.31	ug/l	96
55) Tert-Butylbenzene	22.93	119	328424	9.45	ug/l	98
56) 1,2,4-Trimethylbenzene	23.02	105	295151	9.37	ug/l	96
57) Sec-Butylbenzene	23.40	105	483696	9.45	ug/l	97
58) 1,3-Dichlorobenzene	23.88	146	206841	9.65	ug/l	99
59) 1,4-Dichlorobenzene	24.10	146	210145	9.75	ug/l	99
60) p-Isopropyltoluene	23.69	119	374330	9.57	ug/l	99
61) 1,2-Dichlorobenzene	24.84	146	166820	9.82	ug/l	97
62) n-Butylbenzene	24.55	91	371660	9.36	ug/l	97
63) 1,2-Dibromo-3-Chloropropan	26.35	75	10447	9.50	ug/l	71
64) 1,2,4-Trichlorobenzene	28.05	180	155142	9.98	ug/l	96
65) Naphthalene	28.60	128	126260	9.76	ug/l	96
66) Hexachlorobutadiene	28.36	225	126781	8.95	ug/l	97
67) 1,2,3-Trichlorobenzene	29.17	180	121960	10.22	ug/l	97

002068

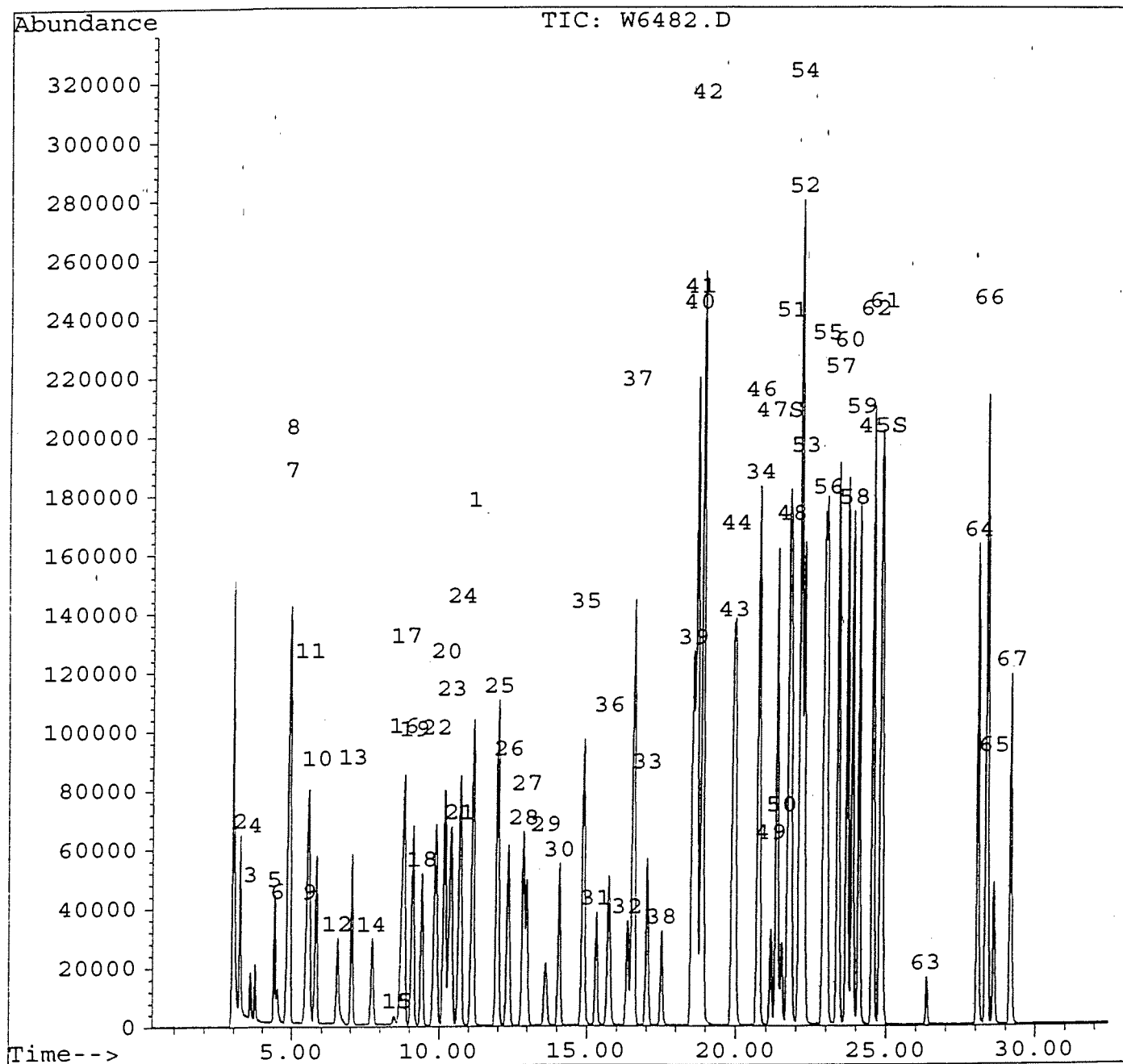
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6482.D
 Acq Time : 17 Jul 96 1:38 pm
 Sample : 10PPB-QCCS-1/B#96422
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 14:11 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



002069

Library Search Compound Report

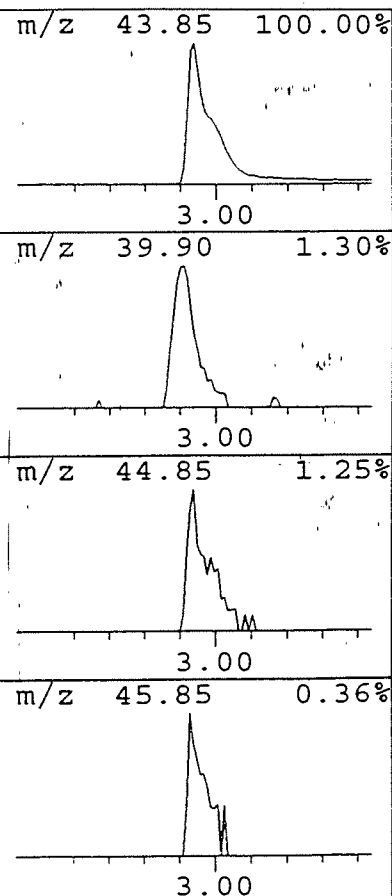
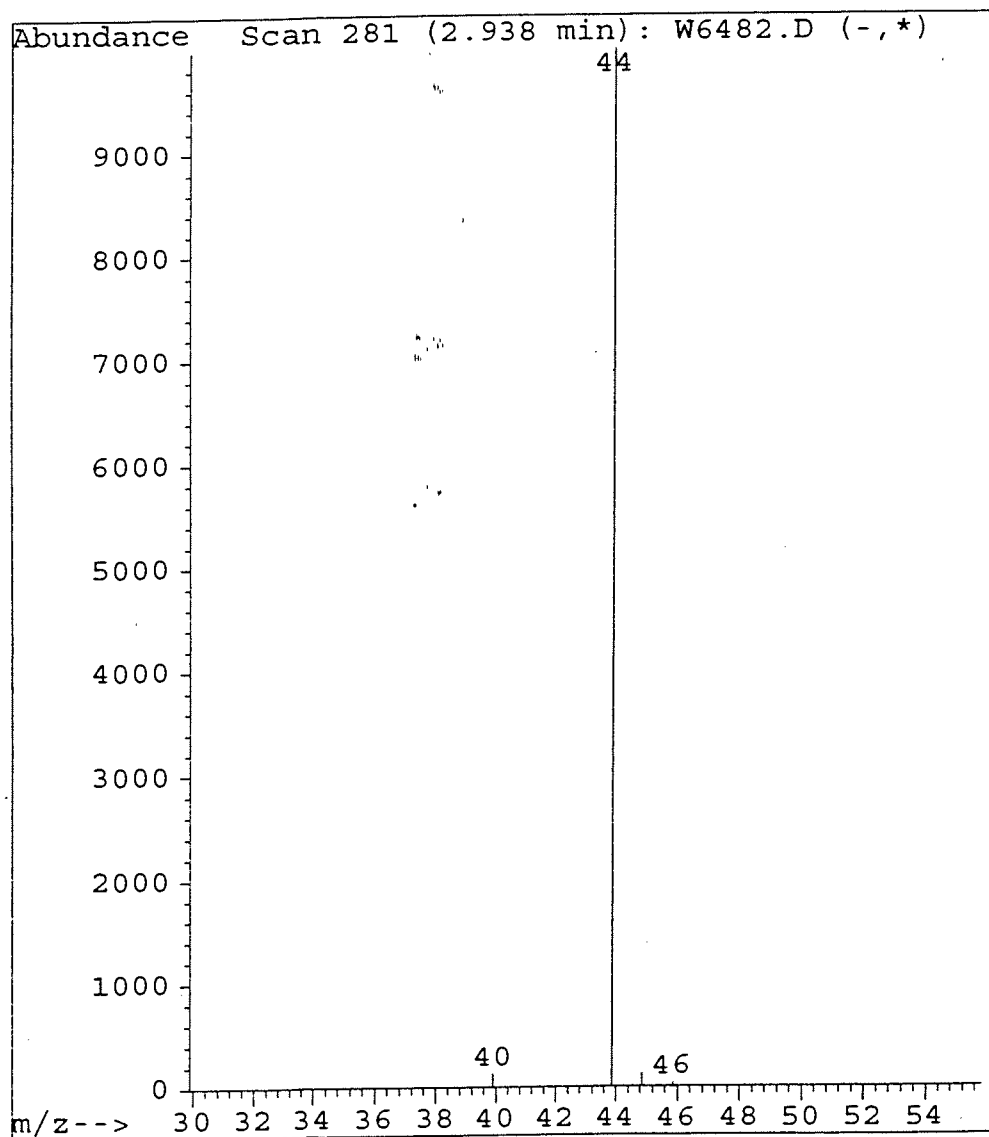
Data File : C:\HPCHEM\1\DATA\JUL17\W6482.D
Acq Time : 17 Jul 96 1:38 pm
Sample : 10PPB-QCCS-1/B#96422
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.94	10.57 ug/l	701053	Fluorobenzene	11.11

Hit#	of	Tentative ID	Ref#	CAS#	Qual
1	0	No Hits From C:\DATABASE\NBS75K.L	0	000000-00-0	0



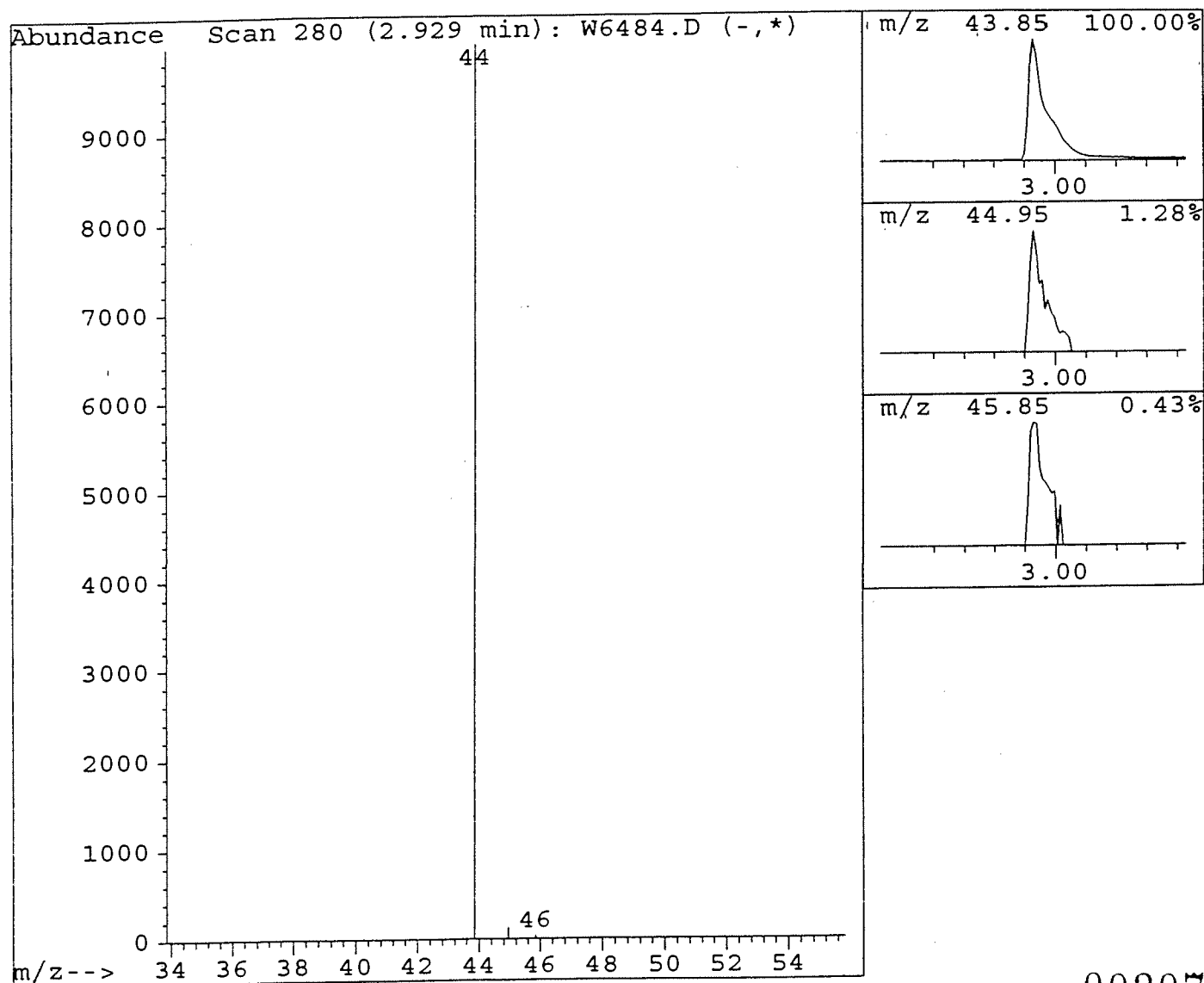
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6484.D
Acq Time : 17 Jul 96 2:49 pm
Sample : METHOD-BLK/B#96422
Misc : 25ML/

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.93	8.81 ug/l	577082	Fluorobenzene	11.10	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 No Hits From C:\DATABASE\NBS75K.L			0	000000-00-0	0



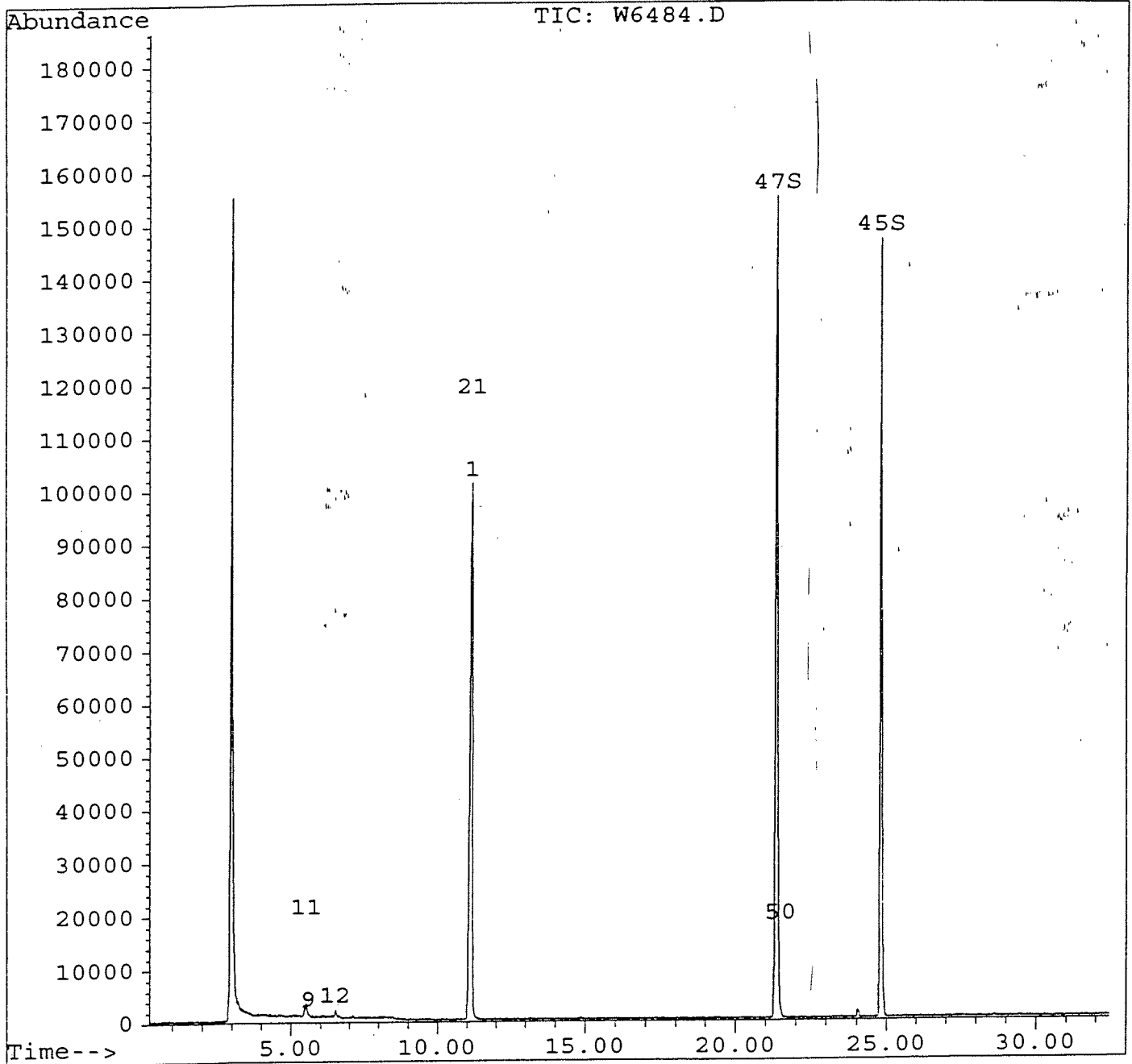
002071

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6484.D
Acq Time : 17 Jul 96 2:49 pm
Sample : METHOD-BLK/B#96422
Misc : 25ML/
Quant Time: Jul 17 15:22 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6484.D
Acq Time : 17 Jul 96 2:49 pm
Sample : METHOD-BLK/B#96422
Misc : 25ML/
Quant Time: Jul 17 15:22 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
39) Chlorobenzene	0.00	112		Not Detected	
40) 1,1,1,2-Tetrachloroethane	0.00	131		Not Detected	
41) Ethylbenzene	0.00	106		Not Detected	
42) m,p-Xylenes	0.00	106		Not Detected	
43) o-Xylene	0.00	106		Not Detected	
44) Styrene	0.00	104		Not Detected	
46) Isopropylbenzene	0.00	105		Not Detected	
48) Bromobenzene	0.00	77		Not Detected	
49) 1,1,2,2-Tetrachloroethane	0.00	83		Not Detected	
50) 1,2,3-Trichloropropane	21.51	75	478	0.13 ug/l #	39
51) n-Propylbenzene	0.00	91		Not Detected	
52) 2-Chlorotoluene	0.00	91		Not Detected	
53) 4-Chlorotoluene	0.00	91		Not Detected	
54) 1,3,5-Trimethylbenzene	0.00	105		Not Detected	
55) Tert-Butylbenzene	0.00	119		Not Detected	
56) 1,2,4-Trimethylbenzene	0.00	105		Not Detected	
57) Sec-Butylbenzene	0.00	105		Not Detected	
58) 1,3-Dichlorobenzene	0.00	146		Not Detected	
59) 1,4-Dichlorobenzene	0.00	146		Not Detected	
60) p-Isopropyltoluene	0.00	119		Not Detected	
61) 1,2-Dichlorobenzene	0.00	146		Not Detected	
62) n-Butylbenzene	0.00	91		Not Detected	
63) 1,2-Dibromo-3-Chloropropan	0.00	75		Not Detected	
64) 1,2,4-Trichlorobenzene	0.00	180		Not Detected	
65) Naphthalene	0.00	128		Not Detected	
66) Hexachlorobutadiene	0.00	225		Not Detected	
67) 1,2,3-Trichlorobenzene	0.00	180		Not Detected	

002073

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6484.D
 Acq Time : 17 Jul 96 2:49 pm
 Sample : METHOD-BLK/B#96422
 Misc : 25ML/
 Quant Time: Jul 17 15:22 1996

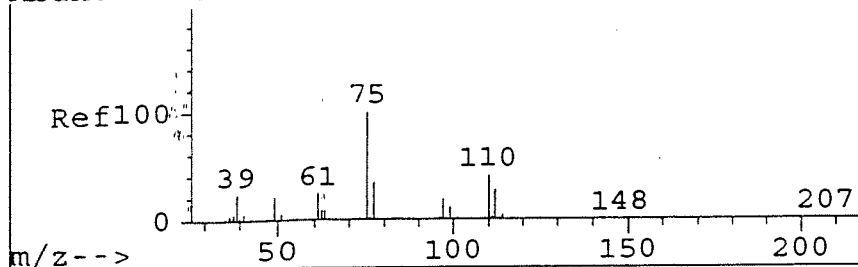
Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

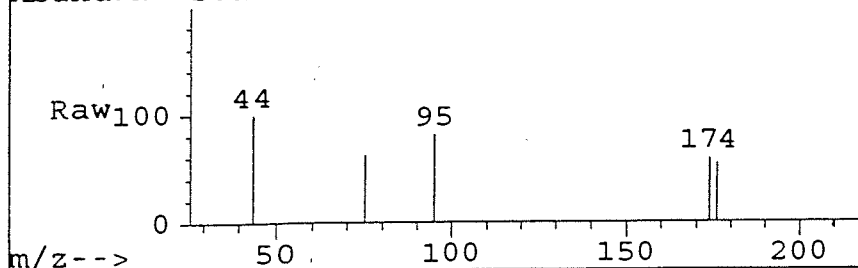
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.10	96	325179	10.00	ug/l	-0.02
System Monitoring Compounds				%Recovery		
45) 1,2-Dichlorobenzene-d4	24.80	150	181424	9.69	ug/l	96.95%
47) Bromofluorobenzene	21.34	95	172392	9.77	ug/l	97.71%
Target Compounds				Qvalue		
2) Dichlorodifluoromethane	0.00	85		Not Detected		
3) Chloromethane	0.00	50		Not Detected		
4) Vinyl Chloride	0.00	62		Not Detected		
5) Bromomethane	0.00	94		Not Detected		
6) Chloroethane	0.00	64		Not Detected		
7) Freon 123	0.00	83		Not Detected		
8) Trichlorofluoromethane	0.00	101		Not Detected		
9) Acetone	5.60	43	2030	7.33	ug/l #	100
10) 1,1-Dichloroethene	0.00	96		Not Detected		
11) Freon 113	5.51	101	4469	0.32	ug/l #	83
12) Methylene Chloride	6.53	84	1484	0.32	ug/l	86
13) 1,2-Dichloroethene (trans-	0.00	96		Not Detected		
14) 1,1-Dichloroethane	0.00	63		Not Detected		
15) Methyl Ethyl Ketone	0.00	43		Not Detected		
16) 2,2-Dichloropropane	0.00	77		Not Detected		
17) 1,2-Dichloroethene (cis-)	0.00	96		Not Detected		
18) Bromochloromethane	0.00	130		Not Detected		
19) Chloroform	0.00	83		Not Detected		
20) 1,1-Dichloropropene	0.00	75		Not Detected		
21) 1,2-Dichloroethane	11.11	62	4174	0.59	ug/l #	48
22) 1,1,1-Trichloroethane	0.00	97		Not Detected		
23) Carbon Tetrachloride	0.00	117		Not Detected		
24) Benzene	0.00	78		Not Detected		
25) Trichloroethene	0.00	130		Not Detected		
26) 1,2-Dichloropropane	0.00	63		Not Detected		
27) Dibromomethane	0.00	174		Not Detected		
28) Bromodichloromethane	0.00	83		Not Detected		
29) Methyl Isobutyl Ketone	0.00	43		Not Detected		
30) cis-1,3-Dichloropropene	0.00	75		Not Detected		
31) trans-1,3-Dichloropropene	0.00	75		Not Detected		
32) 1,3-Dichloropropane	0.00	76		Not Detected		
33) Dibromochloromethane	0.00	129		Not Detected		
34) Bromoform	0.00	173		Not Detected		
35) Toluene	0.00	92		Not Detected		
36) 1,1,2-Trichloroethane	0.00	97		Not Detected		
37) Tetrachloroethene	0.00	164		Not Detected		
38) 1,2-Dibromoethane	0.00	107		Not Detected		

(#) = qualifier out of range (m) = manual integration

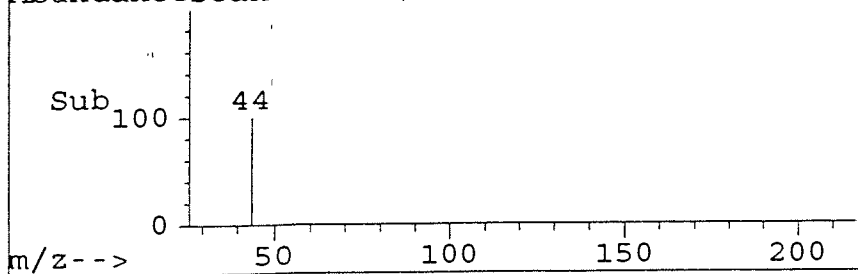
AbundanceScan 2174 (21.295 min): W1885.D (-



AbundanceScan 2207 (21.507 min): W6484.D (*)



AbundanceScan 2207 (21.507 min): W6484.D (-



#50

1,2,3-Trichloropropane

Concen: 0.13 ug/l

RT: 21.51 min Scan# 2207

Delta R.T. -0.02 min

Lab File: W6484.D

Acq: 17 Jul 96 2:49 pm

Tgt Ion: 75 Resp: 478

Ion Ratio Lower Upper

75 100

110 0.0 0.0 86.0

0 0.0 0.0 0.0

0 0.0 0.0 0.0

AbundanceIon 75.00 (74.

400 Ion 110.00 (109

21.51

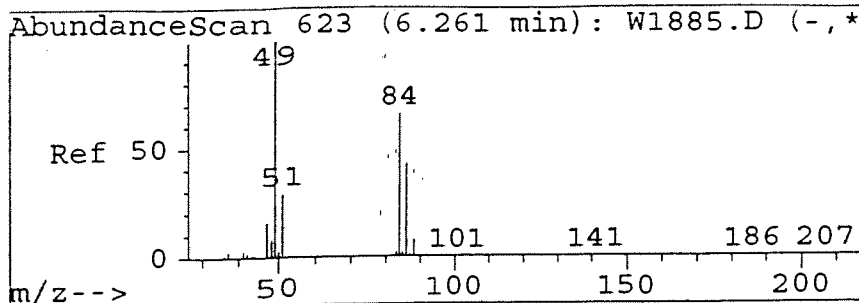
300

200

100

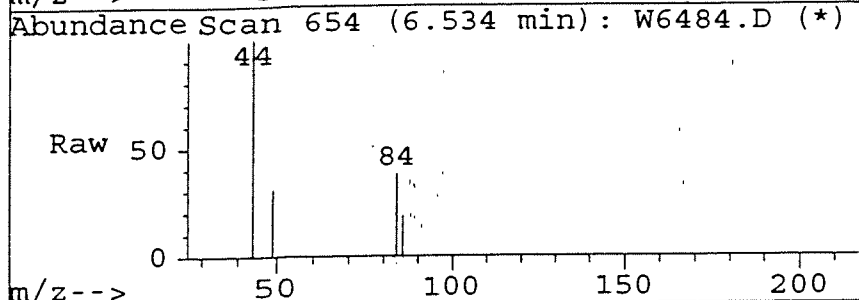
0

Time-->21.48 21.55

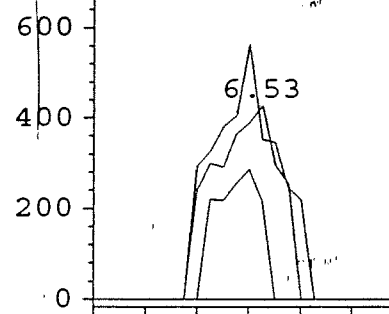


#12
Methylene Chloride
Concen: 0.32 ug/l
RT: 6.53 min Scan# 654
Delta R.T. -0.07 min
Lab File: W6484.D
Acq: 17 Jul 96 2:49 pm

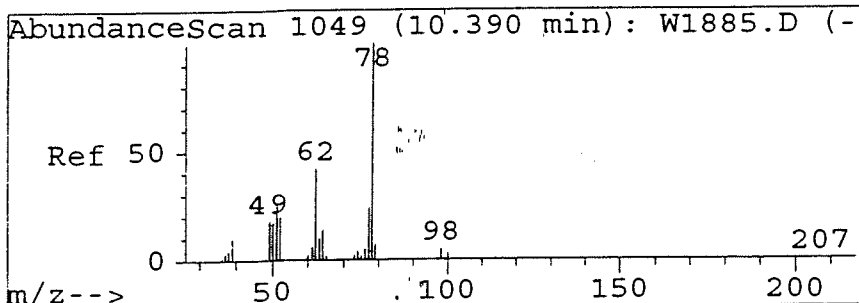
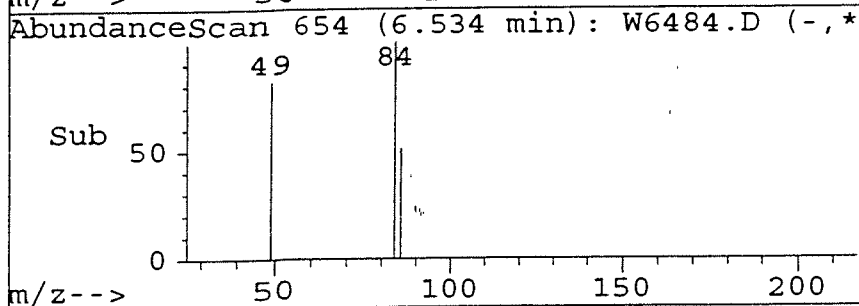
Tgt Ion:84	Resp:	1484
Ion	Ratio	Lower Upper
84	100	
49	122.2	41.6 221.6
86	46.7	0.0 157.2
0	0.0	0.0 0.0



AbundanceIon	84.00 (83.
Ion	49.00 (48.
Ion	86.00 (85.

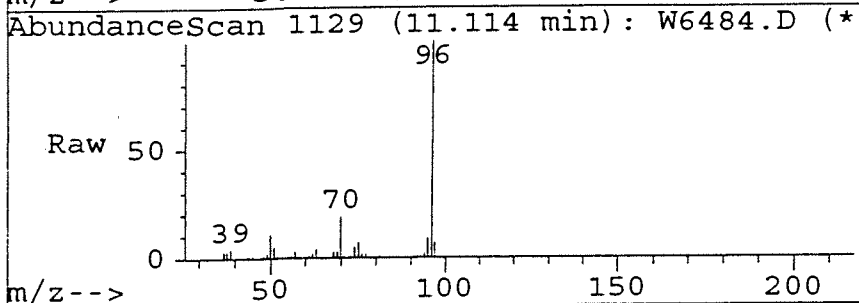


Time-->6.41 6.60

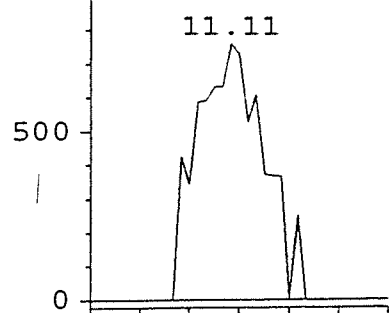


#21
1,2-Dichloroethane
Concen: 0.59 ug/l
RT: 11.11 min Scan# 1129
Delta R.T. 0.27 min
Lab File: W6484.D
Acq: 17 Jul 96 2:49 pm

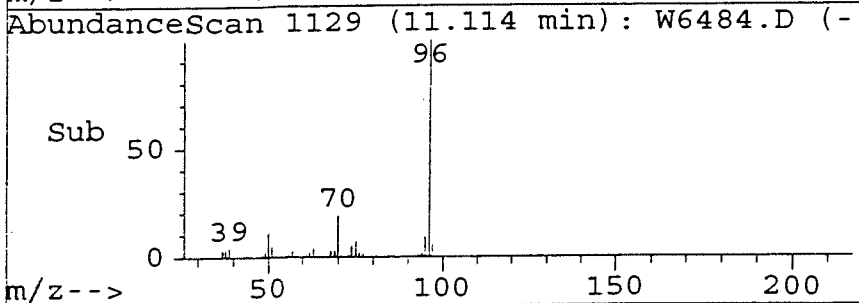
Tgt Ion:62	Resp:	4174
Ion	Ratio	Lower Upper
62	100	
64	0.0	0.0 81.7
98	0.0	0.0 53.9
0	0.0	0.0 0.0



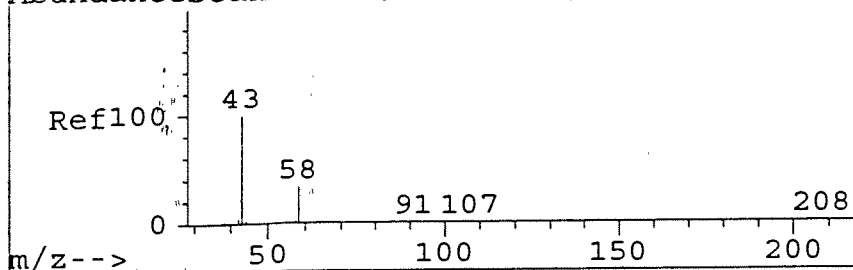
AbundanceIon	62.00 (61.
Ion	64.00 (63.
Ion	98.00 (97.



Time-->10.95 11.24



AbundanceScan 527 (5.329 min): W1885.D (-,*



#9

Acetone

Concen: 7.33 ug/l

RT: 5.60 min Scan# 557

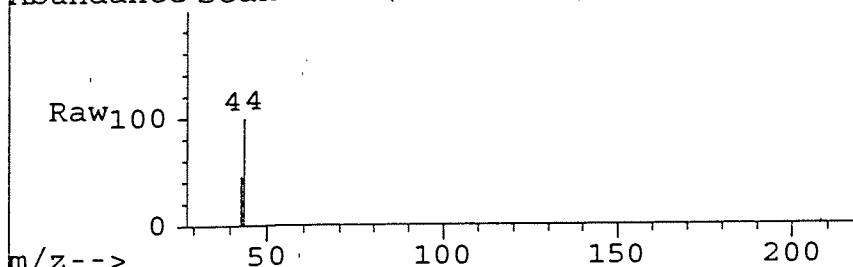
Delta R.T. -0.03 min

Lab File: W6484.D

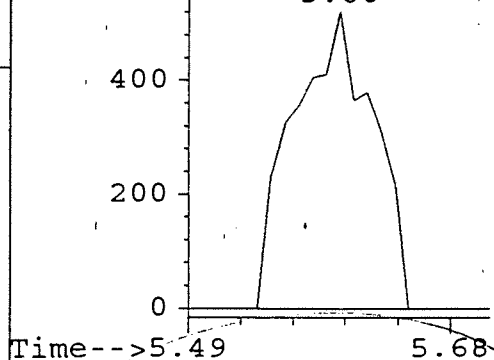
Acq: 17 Jul 96 2:49 pm

Tgt Ion:43	Resp:	2030
Ion Ratio	Lower	Upper
43	100	
58	0.0	50.0
0	0.0	0.0
0	0.0	0.0

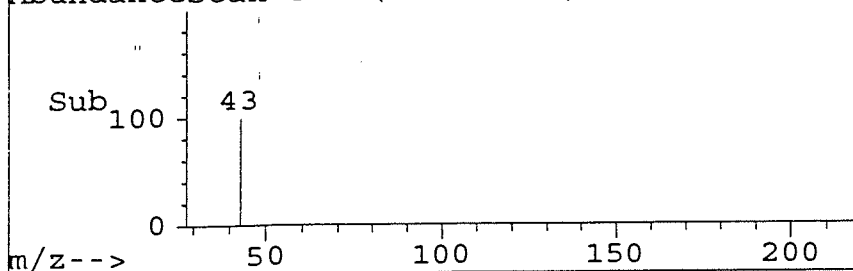
AbundanceScan 557 (5.599 min): W6484.D (*)



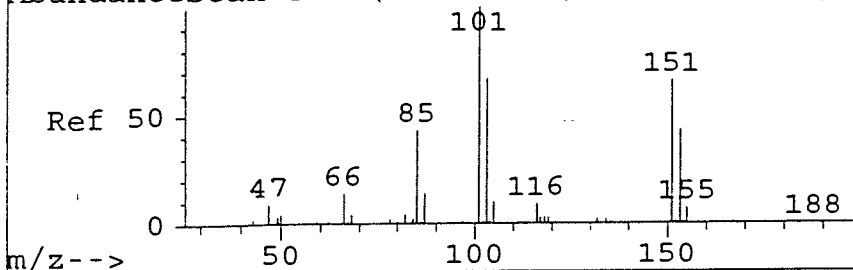
AbundanceIon 43.00 (42.
600 Ion 58.00 (57.
5.60



AbundanceScan 557 (5.599 min): W6484.D (-,*



AbundanceScan 518 (5.242 min): W1885.D (-,*



#11

Freon 113

Concen: 0.32 ug/l

RT: 5.51 min Scan# 548

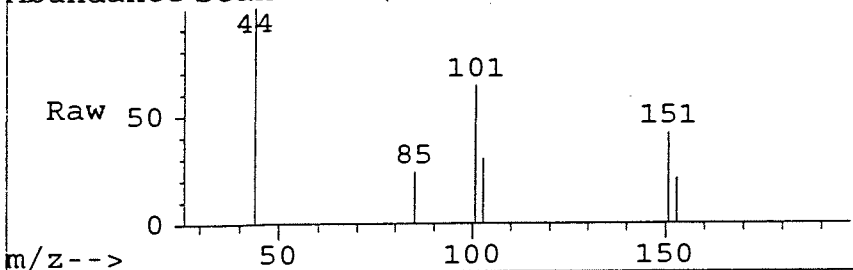
Delta R.T. -0.03 min

Lab File: W6484.D

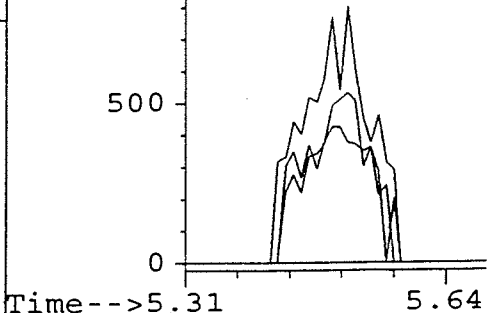
Acq: 17 Jul 96 2:49 pm

Tgt Ion:101	Resp:	4469
Ion Ratio	Lower	Upper
101	100	
151	64.0	85.9
103	41.2	86.7#
0	0.0	0.0

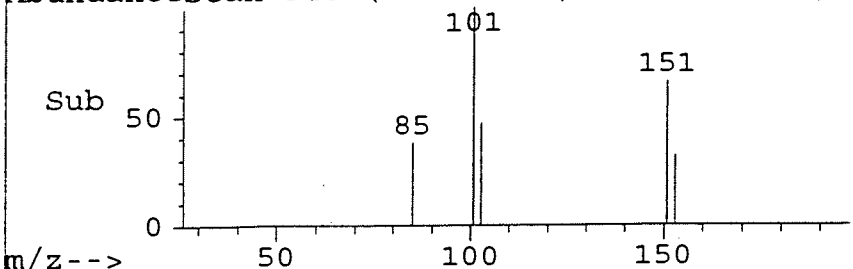
AbundanceScan 548 (5.512 min): W6484.D (*)



AbundanceIon 101.00 (100
1000 Ion 151.00 (150
Ion 103.00 (102
5.51



AbundanceScan 548 (5.512 min): W6484.D (-,*

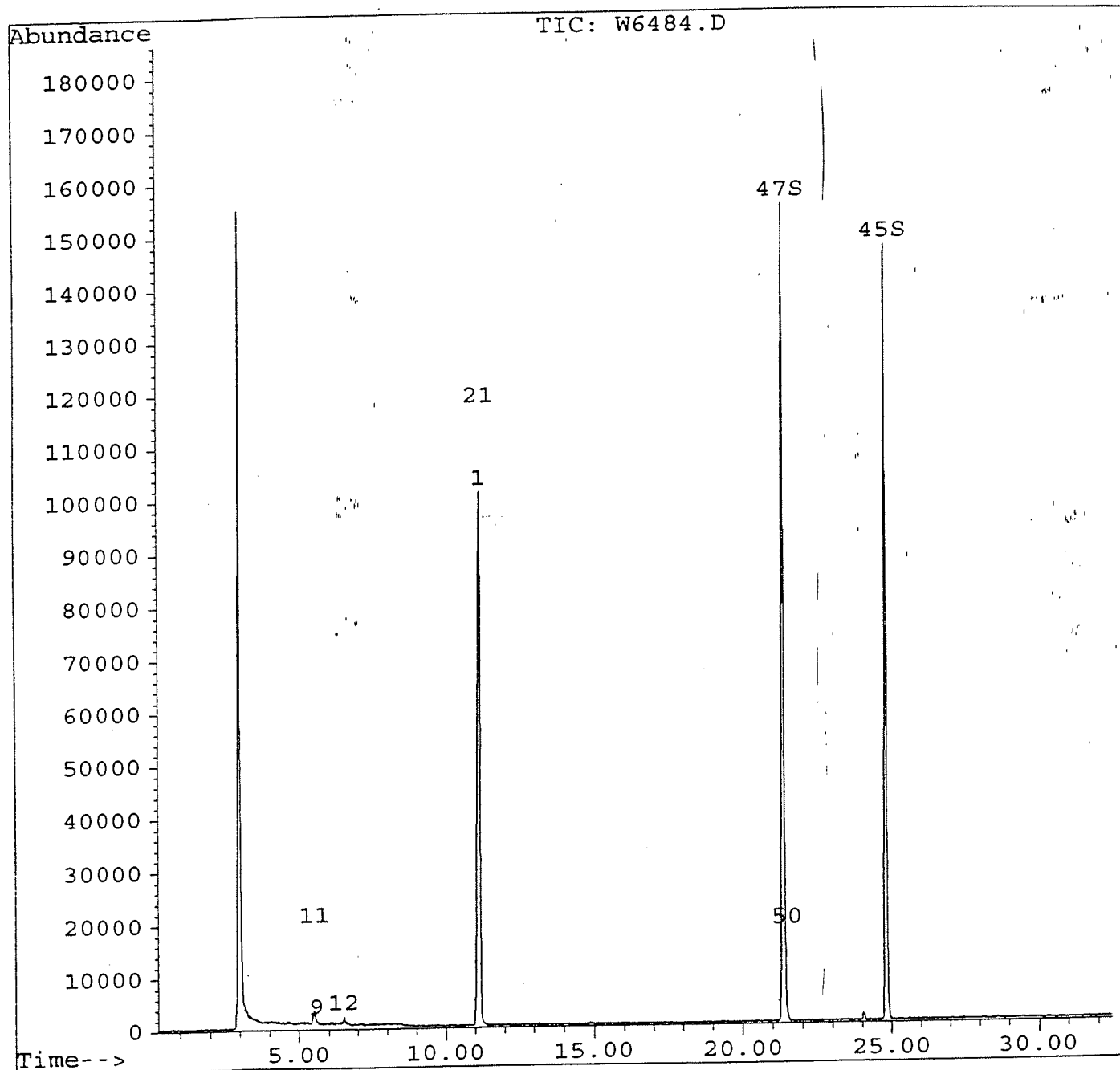


Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6484.D
Acq Time : 17 Jul 96 2:49 pm
Sample : METHOD-BLK/B#96422
Misc : 25ML/
Quant Time: Jul 17 15:22 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration



002078

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6484.D
 Acq Time : 17 Jul 96 2:49 pm
 Sample : METHOD-BLK/B#96422
 Misc : 25ML/
 Quant Time: Jul 17 15:22 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

REVIEWED & APPROVED

BY SL DATE 7-19-96

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration 07-1320-1574

Internal Standards	R.T.	Q Ion	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.10	96	325179	10.00	ug/l	-0.02
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.80	150	181424	9.69	ug/l	96.95%
47) Bromofluorobenzene	21.34	95	172392	9.77	ug/l	97.71%
Target Compounds						
9) Acetone	5.60	43	2030	7.33	ug/l	# 100
11) Freon 113	5.51	101	4469	0.32	ug/l	# ² 83
12) Methylene Chloride	6.53	84	1484	0.32	ug/l	# ² 86
21) 1,2-Dichloroethane	11.11	62	4174	0.59	ug/l	# 48
50) 1,2,3-Trichloropropane	21.51	75	478	0.13	ug/l	# 39

BATCH # 96422
 DATE 07/17/96
 ANALYST W

002079

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6485.D
 Acq Time : 17 Jul 96 3:34 pm
 Sample : G9607215-1(5B)/B#96421
 Misc : 25ML/GW-7/ALLIED SIGNAL
 Quant Time: Jul 17 16:07 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Mi
1) Fluorobenzene	11.12	96	19721	10.00	ug/l	0.0
System Monitoring Compounds						%Recover
45) 1,2-Dichlorobenzene-d4	24.79	150	76625	67.52	ug/l	675.1
47) Bromofluorobenzene	21.35	95	54696	51.12	ug/l	511.1
Target Compounds						Ovalue
10) 1,1-Dichloroethene	5.78	96	8131	21.12	ug/l	21 9
14) 1,1-Dichloroethane	7.72	63	15191	27.05	ug/l	27 9
17) 1,2-Dichloroethene (cis-)	8.79	96	42304	93.02	ug/l	8 9
19) Chloroform	9.07	83	56320	59.87	ug/l	9 9
22) 1,1,1-Trichloroethane	9.87	97	38751	34.37	ug/l	9 9
23) Carbon Tetrachloride	10.38	117	5002	2846 4.75	2.70 ug/l	# 3
24) Benzene	10.70	78	4343	2.87	ug/l	2.9 10
25) Trichloroethene	11.97	130	10597785	13115.17	ug/l	
36) 1,1,2-Trichloroethane	15.72	97	255	0.74	ug/l	#
37) Tetrachloroethene	16.53	164	58027	69.63	ug/l	9
50) 1,2,3-Trichloropropane	<u>21.36</u>	75	25225	116.49	ug/l	# 3
59) 1,4-Dichlorobenzene	24.10	146	693	0.53	ug/l	# 2
61) 1,2-Dichlorobenzene	24.86	146	542	0.53	ug/l	# 2

Low 25 Remm
Remm 1000 x for TCE = 17000 PPB
 PCE =
 CIS-1,2 =
 CHL3 =
 HHTCA =

BATCH # 96421
 DATE 07/17/96
 ANALYST hmm

002080

002000

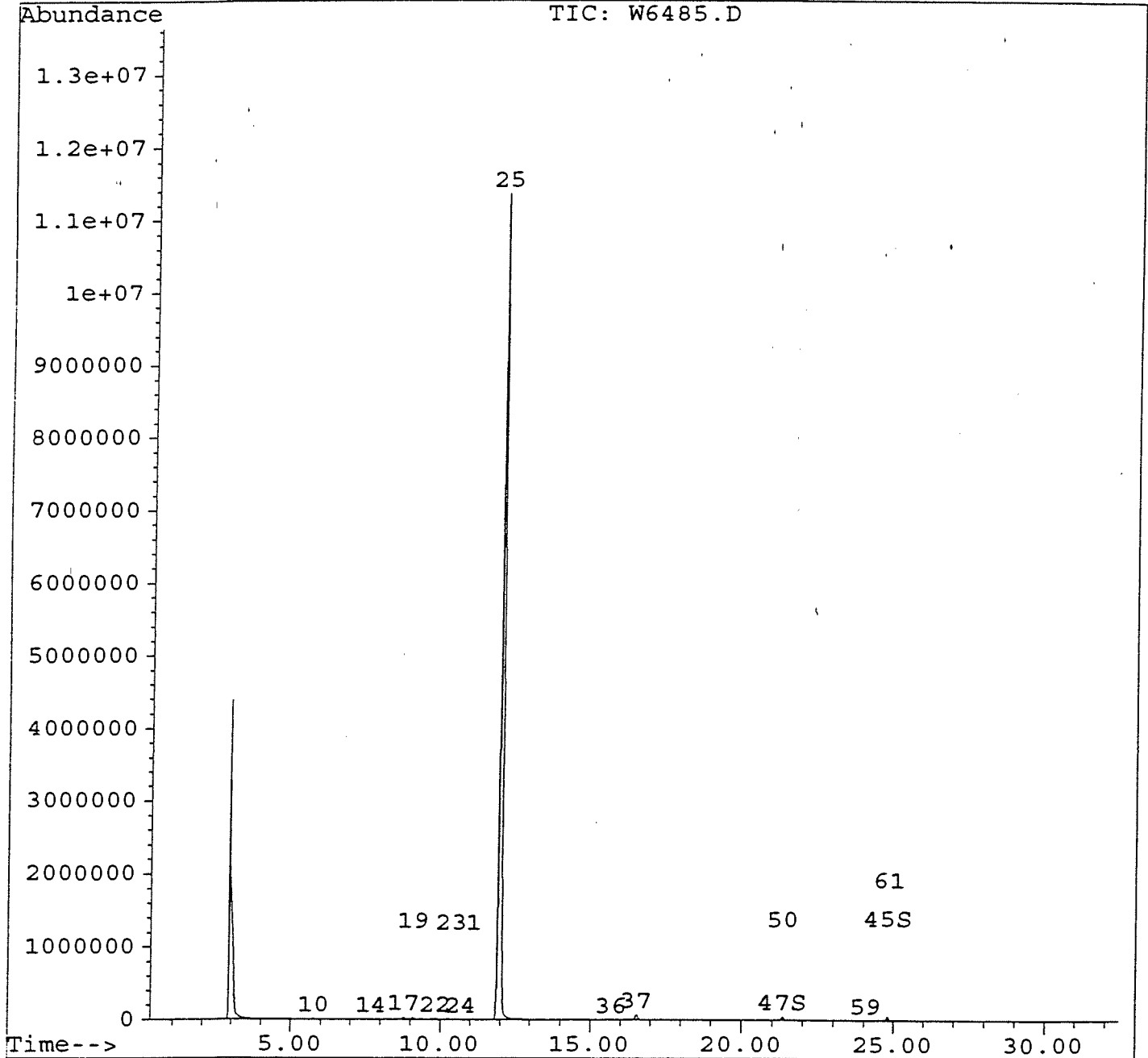
(#) = qualifier out of range (m) = manual integration

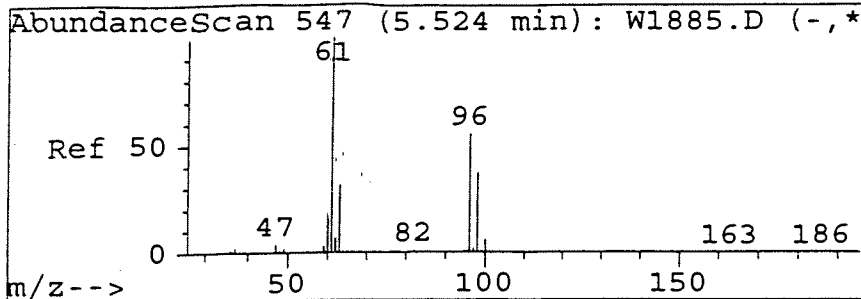
Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6485.D
Acq Time : 17 Jul 96 3:34 pm
Sample : G9607215-1(5B)/B#96421
Misc : 25ML/GW-7/ALLIED SIGNAL
Quant Time: Jul 17 16:07 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

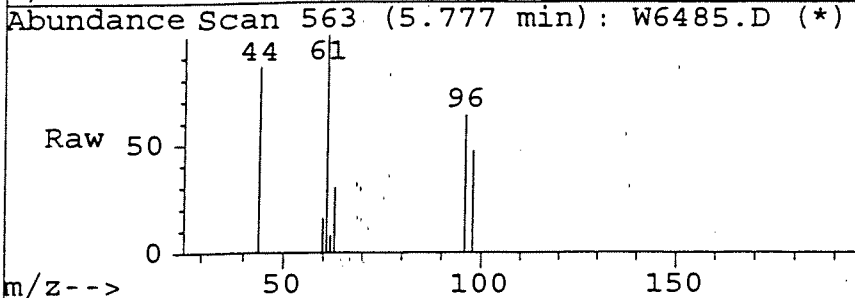
Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration



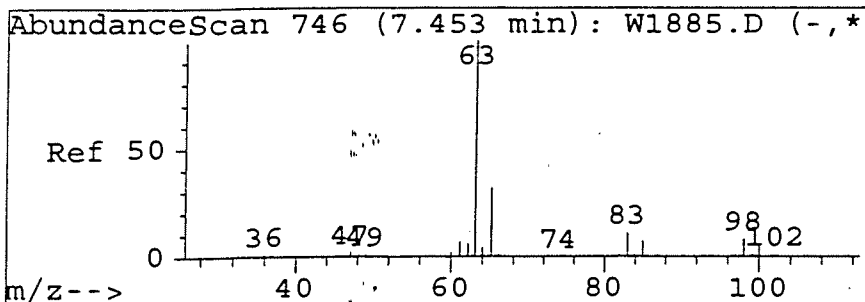
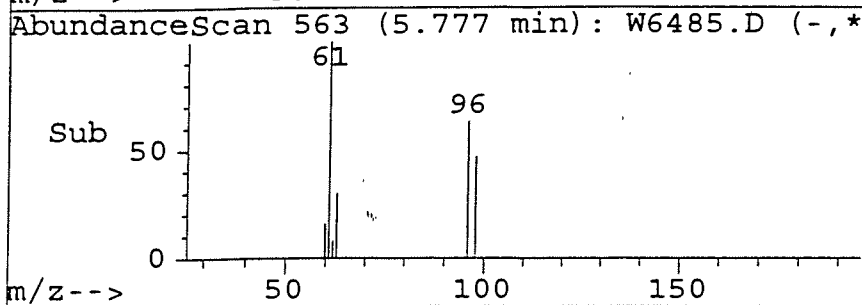
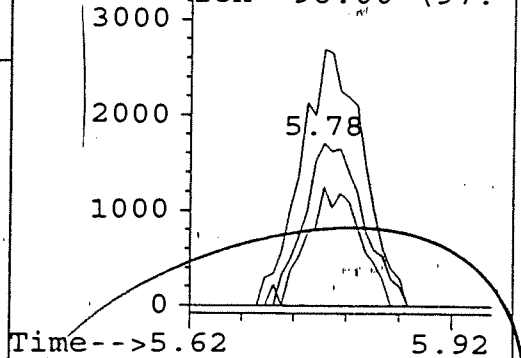


#10
1,1-Dichloroethene
Concen: 21.12 ug/l
RT: 5.78 min Scan# 563
Delta R.T. - -0.05 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

Tgt Ion:96	Resp:	8131
Ion	Ratio	Lower Upper
96	100	
61	166.6	102.5 202.5
98	66.9	12.4 112.4
0	0.0	0.0 0.0

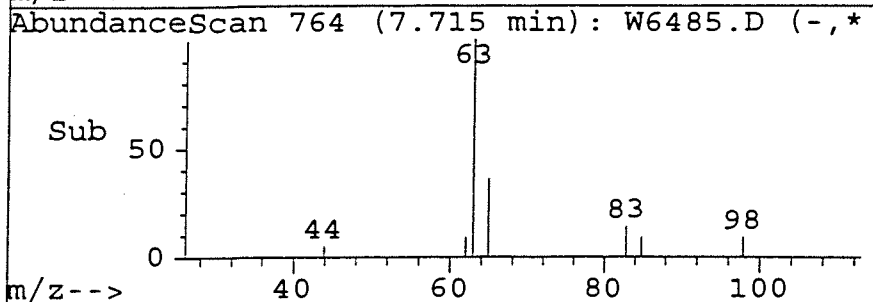
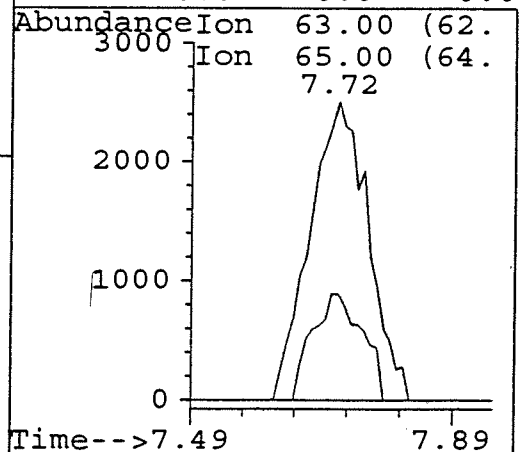
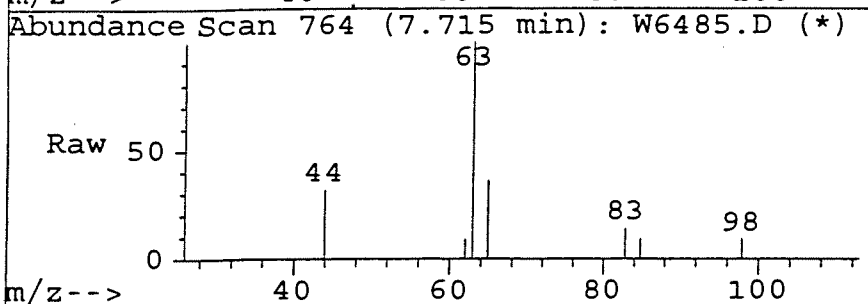


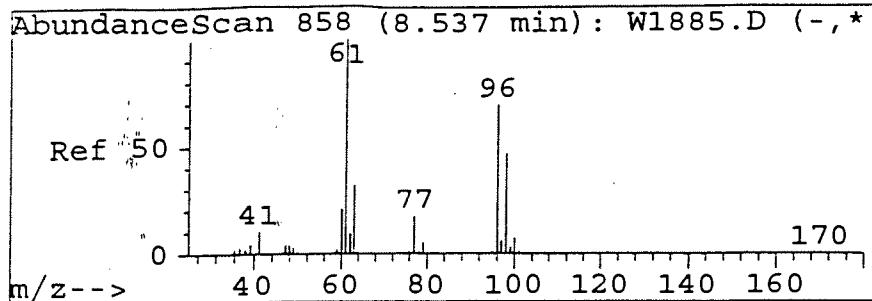
AbundanceIon	96.00 (95.
Ion	61.00 (60.
Ion	98.00 (97.



#14
1,1-Dichloroethane
Concen: 27.05 ug/l
RT: 7.72 min Scan# 764
Delta R.T. -0.13 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

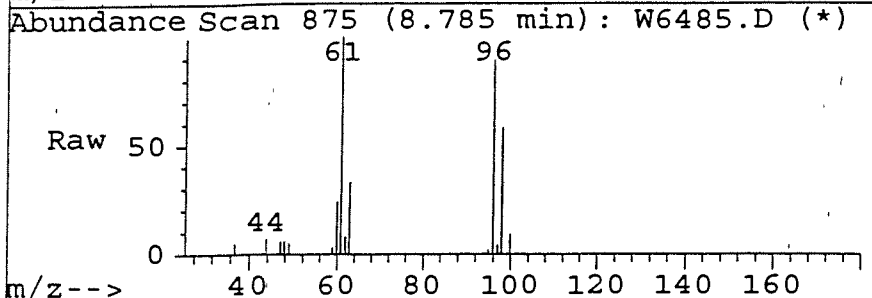
Tgt Ion:63	Resp:	15191
Ion	Ratio	Lower Upper
63	100	
65	30.7	0.0 81.6
0	0.0	0.0 0.0
0	0.0	0.0 0.0



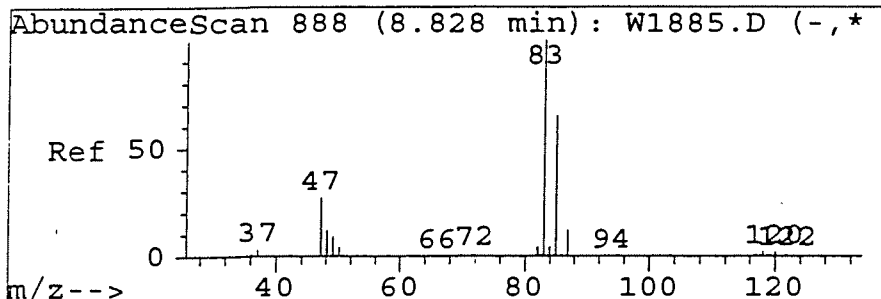
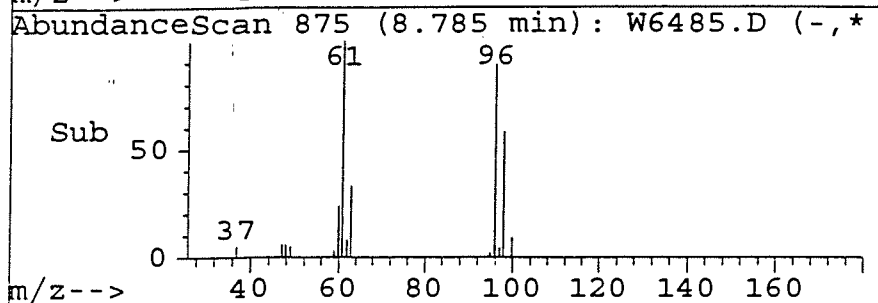
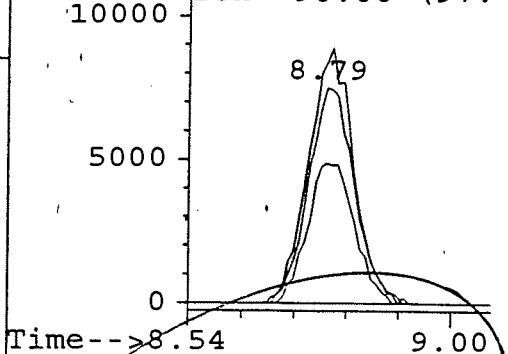


#17
1,2-Dichloroethene (cis-)
Concen: 93.02 ug/l
RT: 8.79 min Scan# 875
Delta R.T. -0.16 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

Tgt Ion:	96	Resp:	42304
Ion	Ratio	Lower	Upper
96	100		
61	116.0	84.0	184.0
98	65.8	14.7	114.7
0	0.0	0.0	0.0

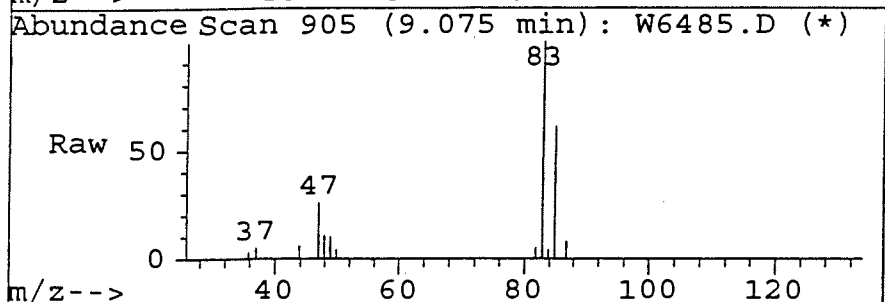


Abundance	Ion	96.00 (95.
	Ion	61.00 (60.
	Ion	98.00 (97.

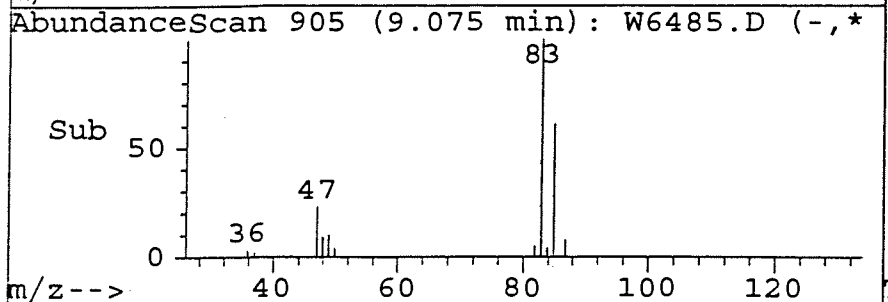
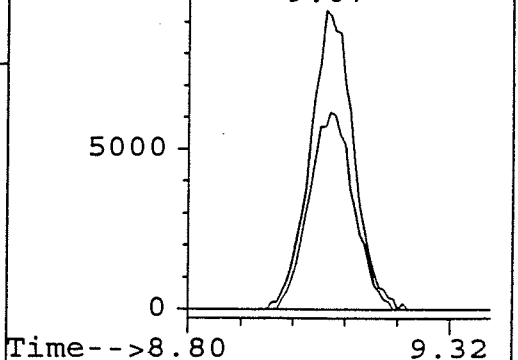


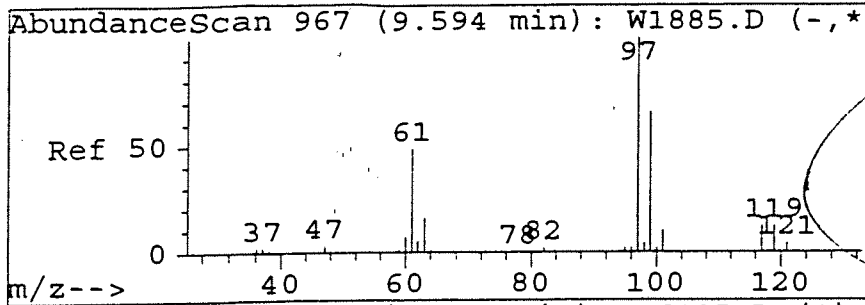
#19
Chloroform
Concen: 59.87 ug/l
RT: 9.07 min Scan# 905
Delta R.T. -0.17 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

Tgt Ion:	83	Resp:	56320
Ion	Ratio	Lower	Upper
83	100		
85	67.9	17.3	117.3
0	0.0	0.0	0.0
0	0.0	0.0	0.0



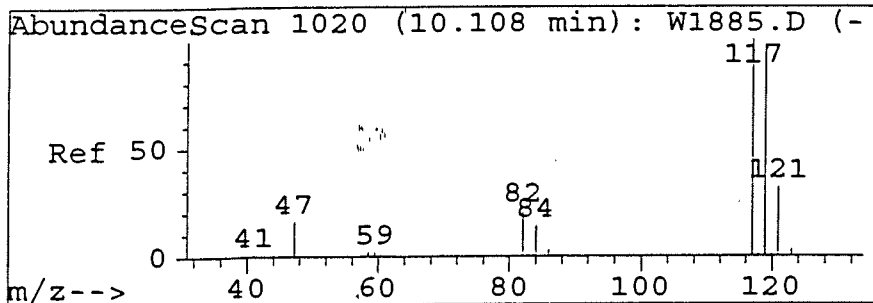
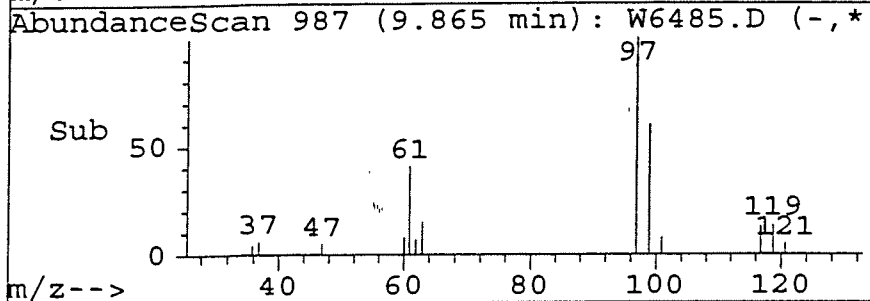
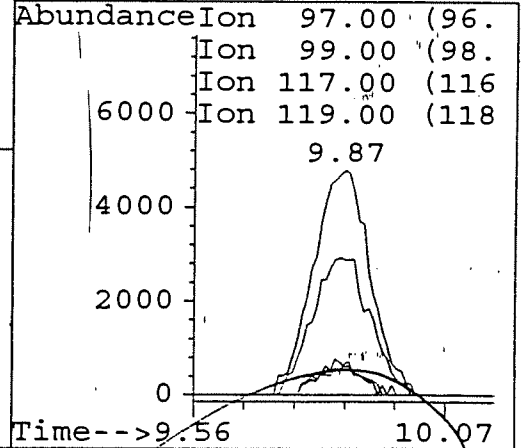
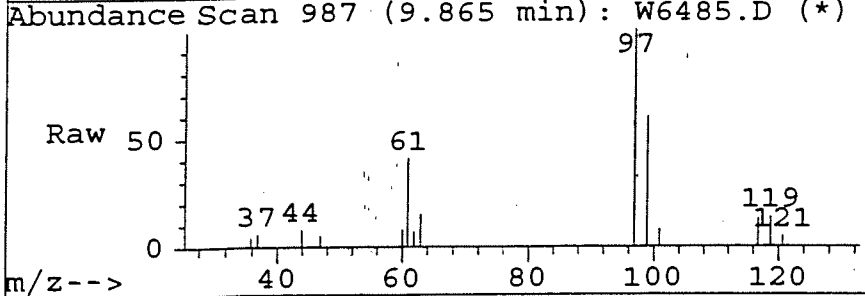
Abundance	Ion	83.00 (82.
	Ion	85.00 (84.





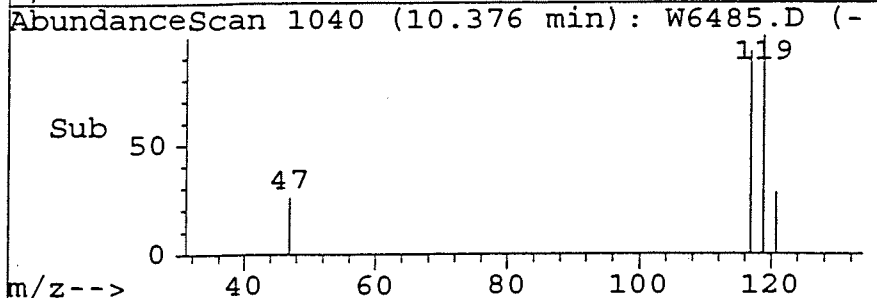
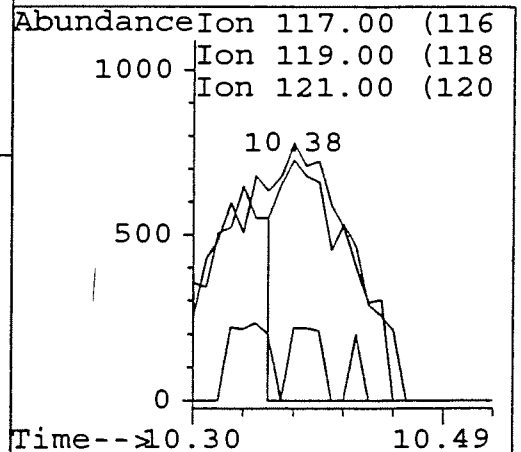
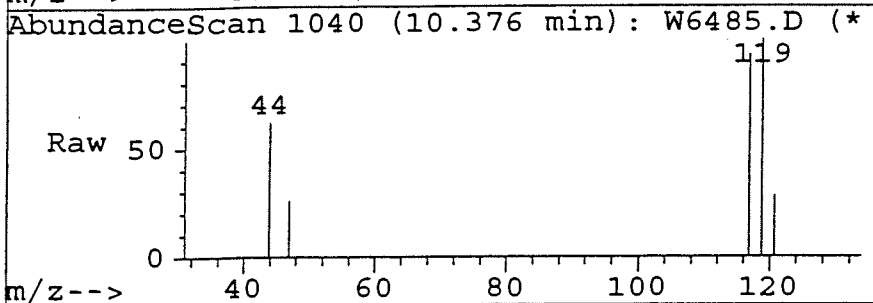
#22
1,1,1-Trichloroethane
Concen: 34.37 ug/l
RT: 9.87 min Scan# 987
Delta R.T. -0.16 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

Tgt Ion:	97	Resp:	38751
Ion	Ratio	Lower	Upper
97	100		
99	62.3	18.2	118.2
117	11.8	0.0	57.5
119	10.0	0.0	60.9

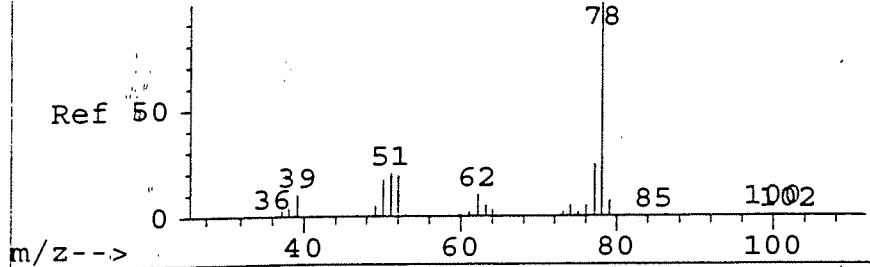


#23
Carbon Tetrachloride
Concen: 2.70 ug/l
RT: 10.38 min Scan# 1040
Delta R.T. -0.17 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

Tgt Ion:	117	Resp:	2846
Ion	Ratio	Lower	Upper
117	100		
119	174.3	47.3	147.3#
121	13.1	0.0	82.4
0	0.0	0.0	0.0



AbundanceScan 1054 (10.438 min): W1885.D (-



#24

Benzene

Concen: 2.87 ug/l

RT: 10.70 min Scan# 1074

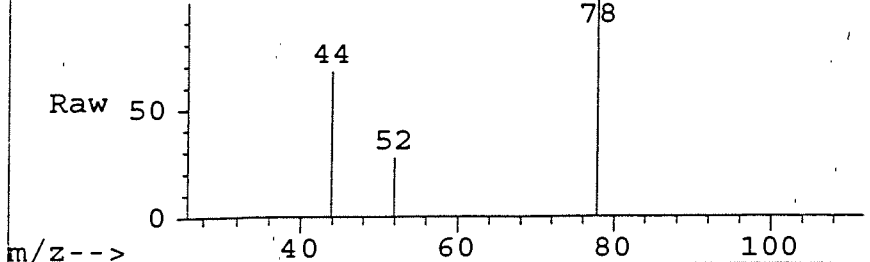
Delta R.T. -0.03 min

Lab File: W6485.D

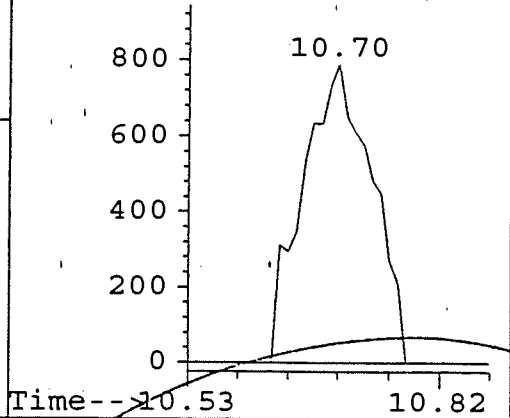
Acq: 17 Jul 96 3:34 pm

Tgt Ion: 78		Resp: 4343	
Ion	Ratio	Lower	Upper
78	100		
0	0.0	0.0	0.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0

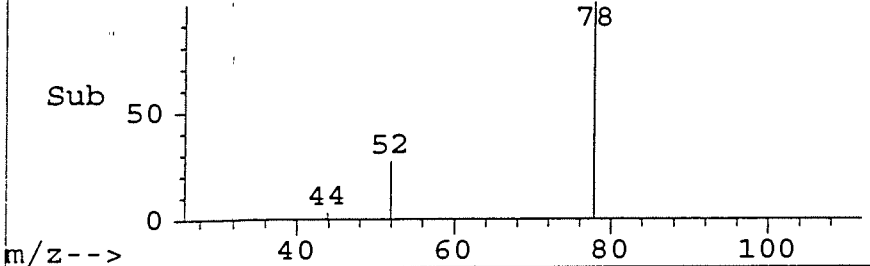
AbundanceScan 1074 (10.704 min): W6485.D (*)



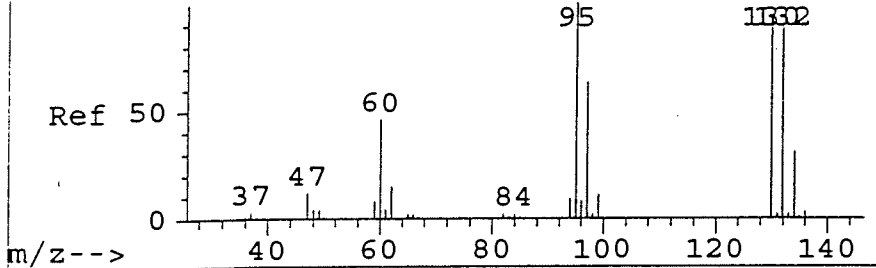
AbundanceIon 78.00 (77.



AbundanceScan 1074 (10.704 min): W6485.D (-



AbundanceScan 1184 (11.697 min): W1885.D (-



#25

Trichloroethene

Concen: 13115.17 ug/l

RT: 11.97 min Scan# 1205

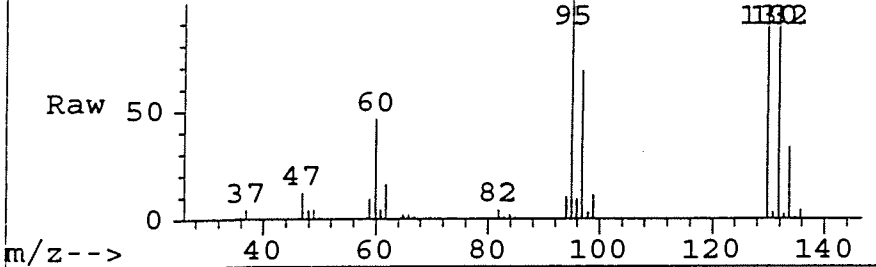
Delta R.T. -0.18 min

Lab File: W6485.D

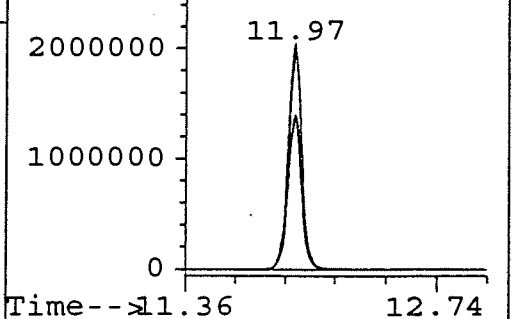
Acq: 17 Jul 96 3:34 pm

Tgt Ion:130		Resp:10597785	
Ion	Ratio	Lower	Upper
130	100		
132	98.3	46.4	146.4
95	101.1	54.1	154.1
97	68.5	16.2	116.2

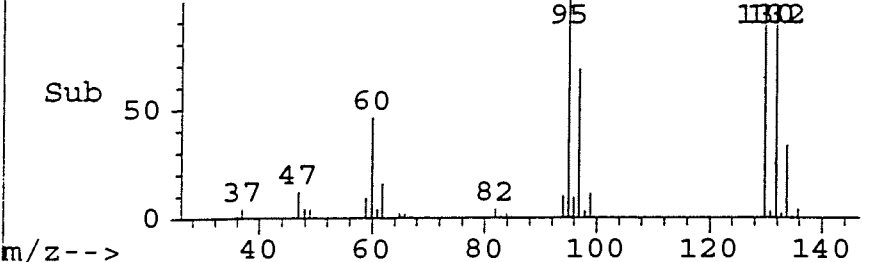
AbundanceScan 1205 (11.968 min): W6485.D (*)



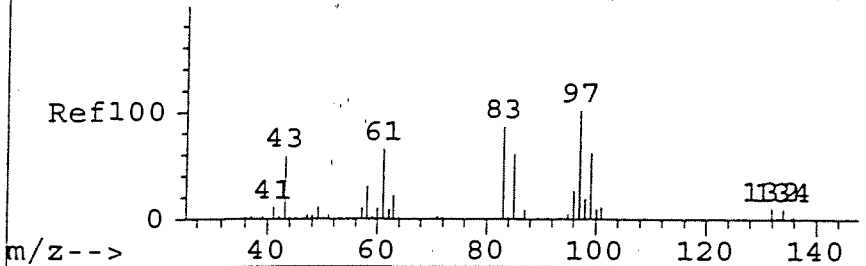
AbundanceIon 130.00 (129
Ion 132.00 (131
Ion 95.00 (94.
Ion 97.00 (96.



AbundanceScan 1205 (11.968 min): W6485.D (-

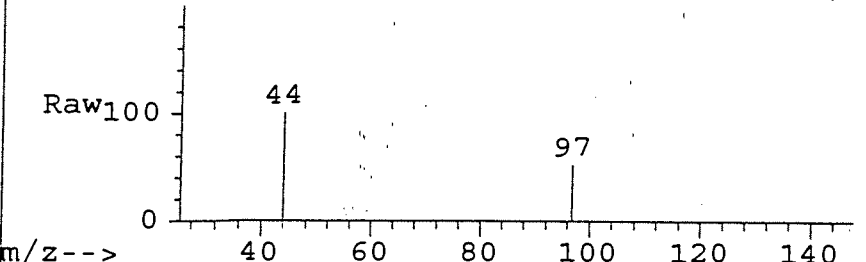


AbundanceScan 1569 (15.429 min): W1885.D (-



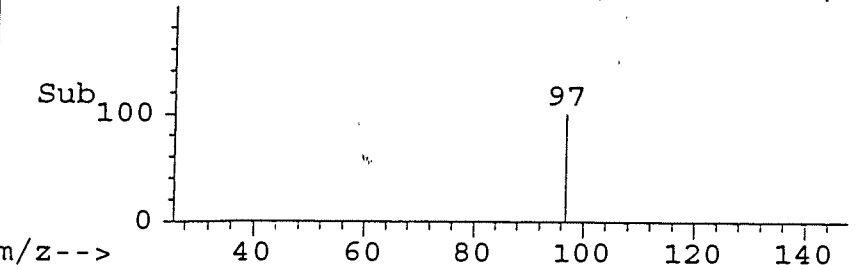
m/z-->

AbundanceScan 1594 (15.720 min): W6485.D (*)



m/z-->

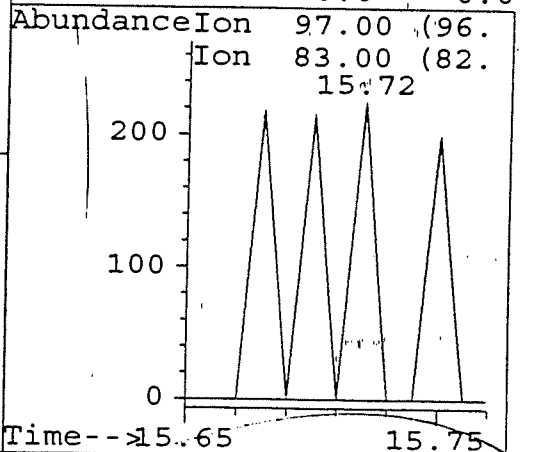
AbundanceScan 1594 (15.720 min): W6485.D (-



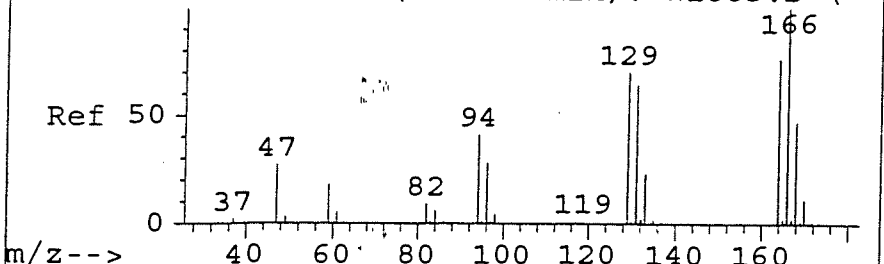
m/z-->

#36
1,1,2-Trichloroethane
Concen: 0.74 ug/l
RT: 15.72 min Scan# 1594
Delta R.T. -0.23 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

Tgt Ion: 97	Resp: 255
Ion Ratio	Lower Upper
97 100	
83 0.0	31.0 131.0#
0 0.0	0.0 0.0
0 0.0	0.0 0.0

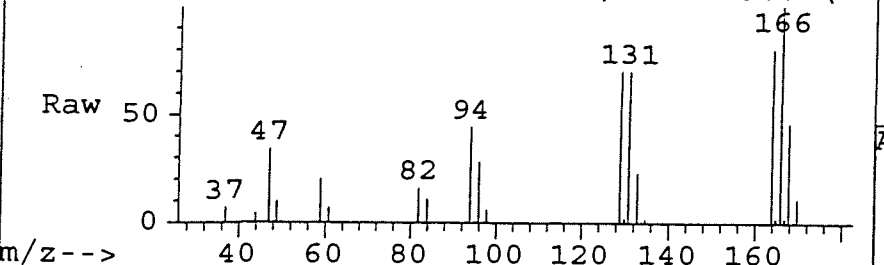


AbundanceScan 1656 (16.273 min): W1885.D (-



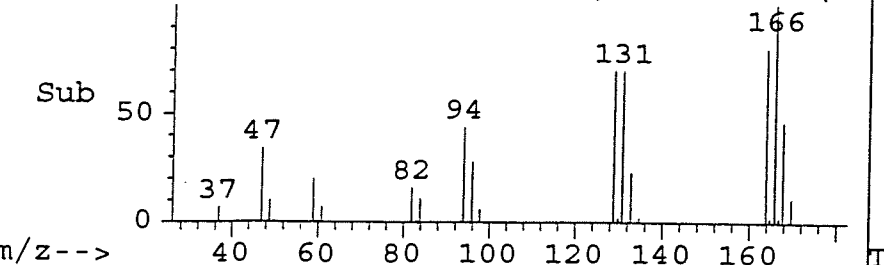
m/z-->

AbundanceScan 1678 (16.530 min): W6485.D (*)



m/z-->

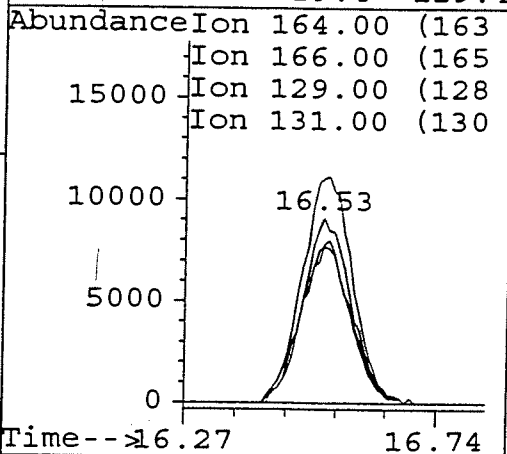
AbundanceScan 1678 (16.530 min): W6485.D (-

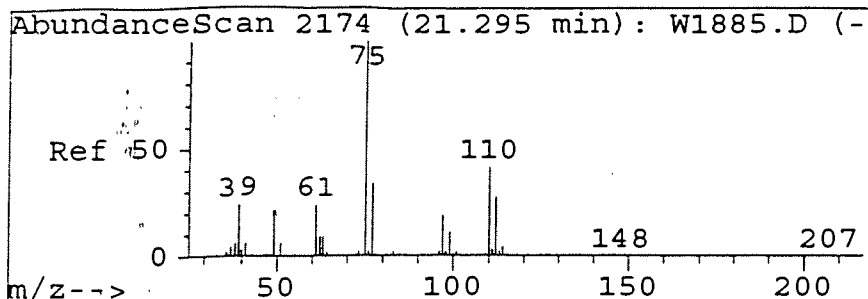


m/z-->

#37
Tetrachloroethene
Concen: 69.63 ug/l
RT: 16.53 min Scan# 1678
Delta R.T. -0.25 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

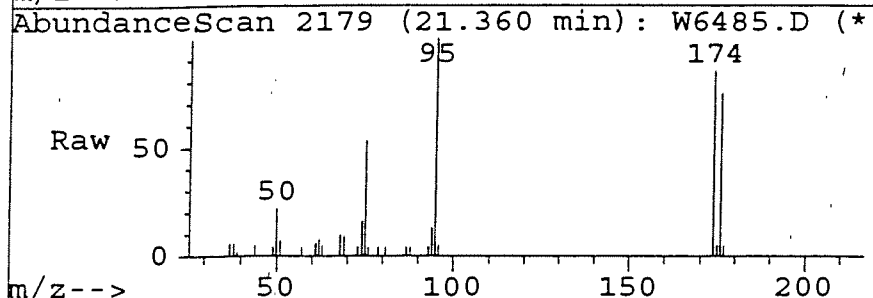
Tgt Ion: 164	Resp: 58027
Ion Ratio	Lower Upper
164 100	
166 128.4	81.6 181.6
129 87.0	33.6 133.6
131 86.5	29.4 129.4



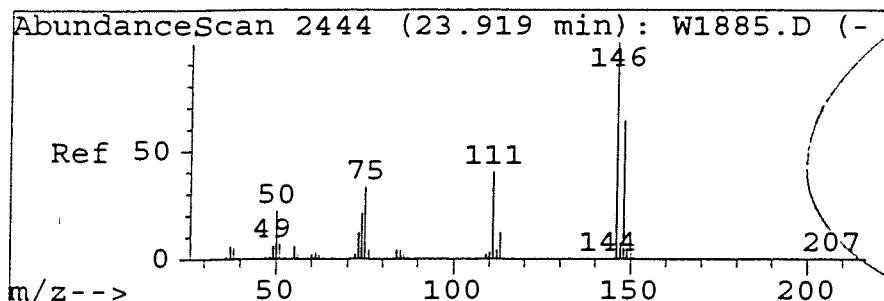
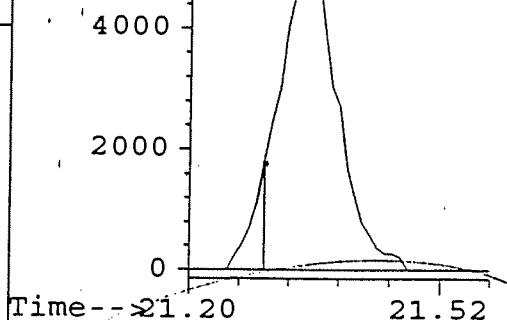
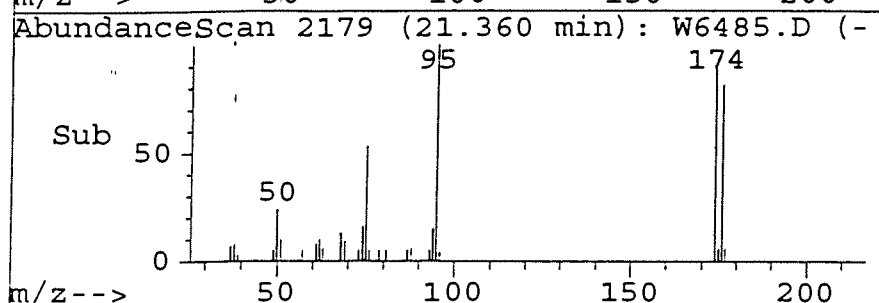


#50
1,2,3-Trichloropropane
Concen: 116.49 ug/l
RT: 21.36 min Scan# 2179
Delta R.T. -0.17 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

Tgt Ion:	75	Resp:	25225
Ion	Ratio	Lower	Upper
75	100		
110	0.0	0.0	86.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0

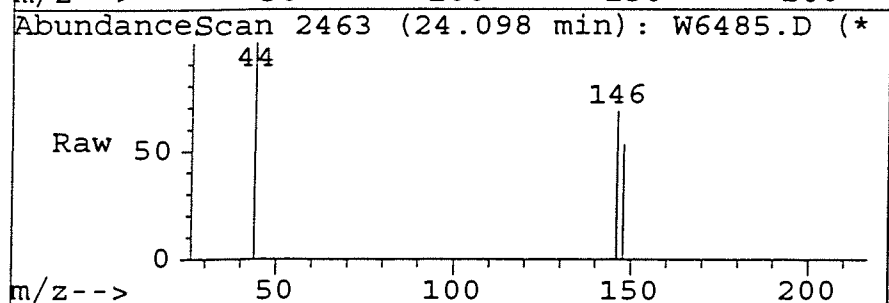


AbundanceIon 75.00 (74.
Ion 110.00 (109
21.36

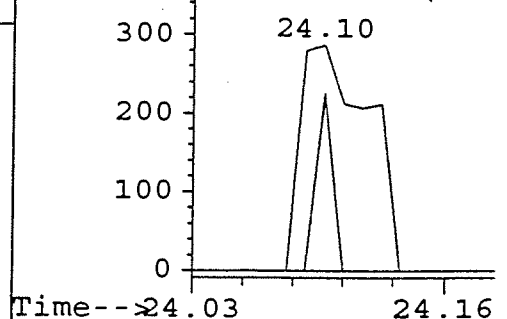
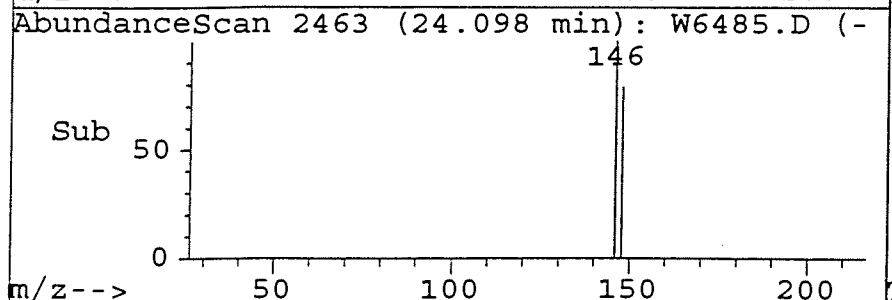


#59
1,4-Dichlorobenzene
Concen: 0.53 ug/l
RT: 24.10 min Scan# 2463
Delta R.T. -0.00 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

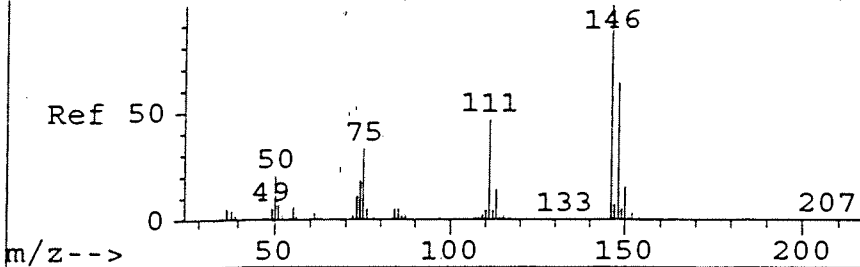
Tgt Ion:	146	Resp:	693
Ion	Ratio	Lower	Upper
146	100		
148	0.0	14.9	114.9#
111	0.0	0.0	88.1
113	0.0	0.0	60.4



AbundanceIon 146.00 (145
Ion 148.00 (147
Ion 111.00 (110
Ion 113.00 (112
24.10

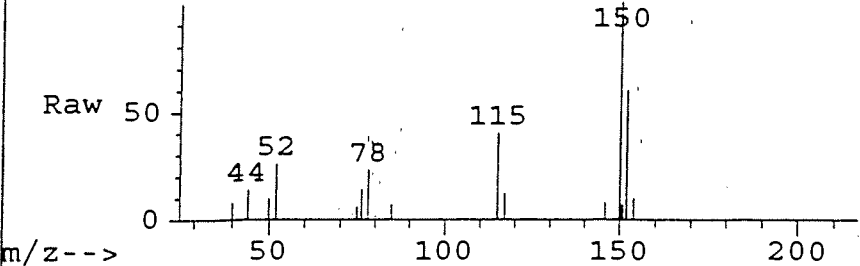


AbundanceScan 2522 (24.677 min): W1885.D (-



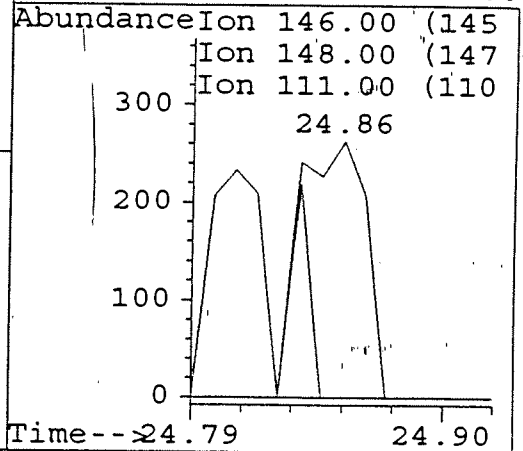
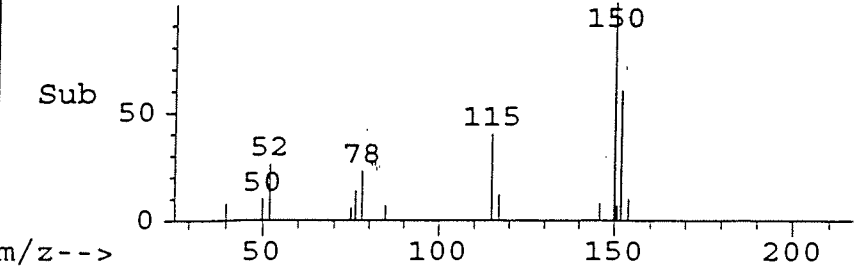
#61
1,2-Dichlorobenzene
Concen: 0.53 ug/l
RT: 24.86 min Scan# 2542
Delta R.T. -0.12 min
Lab File: W6485.D
Acq: 17 Jul 96 3:34 pm

AbundanceScan 2542 (24.860 min): W6485.D (*)



Tgt Ion	Ratio	Lower	Upper
146	100		
148	0.0	18.4	118.4#
111	92.8	0.0	94.9
0	0.0	0.0	0.0

AbundanceScan 2542 (24.860 min): W6485.D (-



Library Search Compound Report

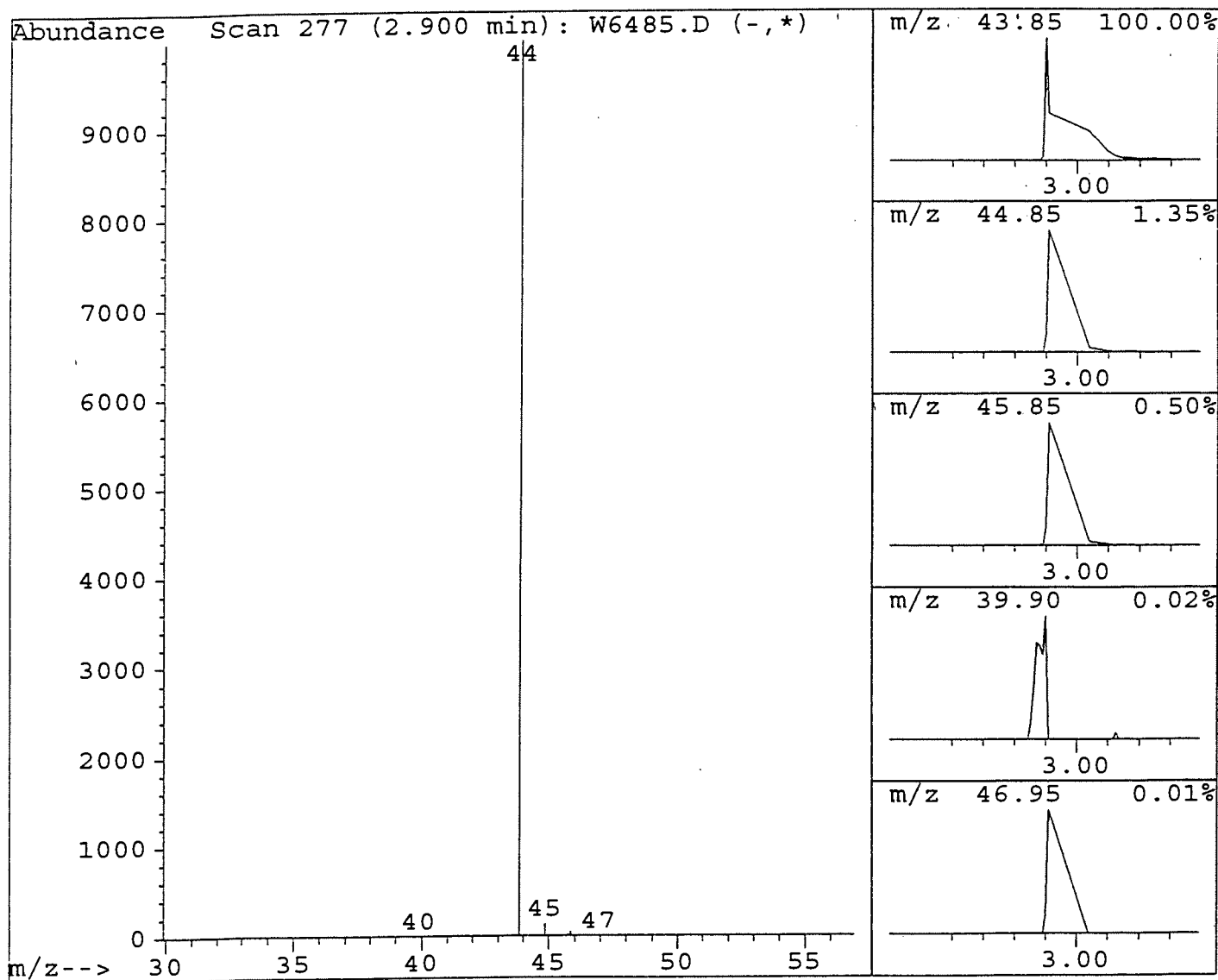
Data File : C:\HPCHEM\1\DATA\JUL17\W6485.D
Acq Time : 17 Jul 96 3:34 pm
Sample : G9607215-1(5B)/B#96421
Misc : 25ML/GW-7/ALLIED SIGNAL

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.90	1.71 ug/l	10366415	Fluorobenzene	11.12

Hit#	of	Tentative ID	Ref#	CAS#	Qual
1	No Hits	From C:\DATABASE\NBS75K.L	0	000000-00-0	0



002089

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6488.D
 Acq Time : 17 Jul 96 5:45 pm
 Sample : G9607215-3 (4B)/B#96421
 Misc : DF=250/100UL:25ML/GW-4/ALLIED SIGNAL
 Quant Time: Jul 17 18:17 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

*T = 1500
2500X*

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Mir
1) Fluorobenzene	11.10	96	277136	10.00	ug/l	-0.02
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.79	150	156096	9.79	ug/l	97.87
47) Bromofluorobenzene	21.34	95	149948	9.97	ug/l	99.72
Target Compounds						
9) Acetone	5.58	43	821	3.48	ug/l	100
10) 1,1-Dichloroethene	5.77	96	1480	0.27	ug/l	64
11) Freon 113	5.47	101	3607	0.30	ug/l	89
12) Methylene Chloride	6.51	84	618	0.16	ug/l	67
17) 1,2-Dichloroethene (cis-)	8.78	96	5863	0.92	ug/l	80
19) Chloroform	9.07	83	7749	0.59	ug/l	95
21) 1,2-Dichloroethane	11.09	62	3644	0.61	ug/l	48
22) 1,1,1-Trichloroethane	9.84	97	6289	0.40	ug/l	86
25) Trichloroethene	11.95	130	544447	47.95	ug/l	95
37) Tetrachloroethene	16.51	164	5300	0.45	ug/l	93
50) 1,2,3-Trichloropropane	21.34	75	72297	23.76	ug/l	39

Remun 500 x for TCE

See 7/23 W 6694 for TCE

REVIEWED & APPROVED
 BY _____ DATE _____

BATCH # 96421
 DATE 07/27/96
 ANALYST _____

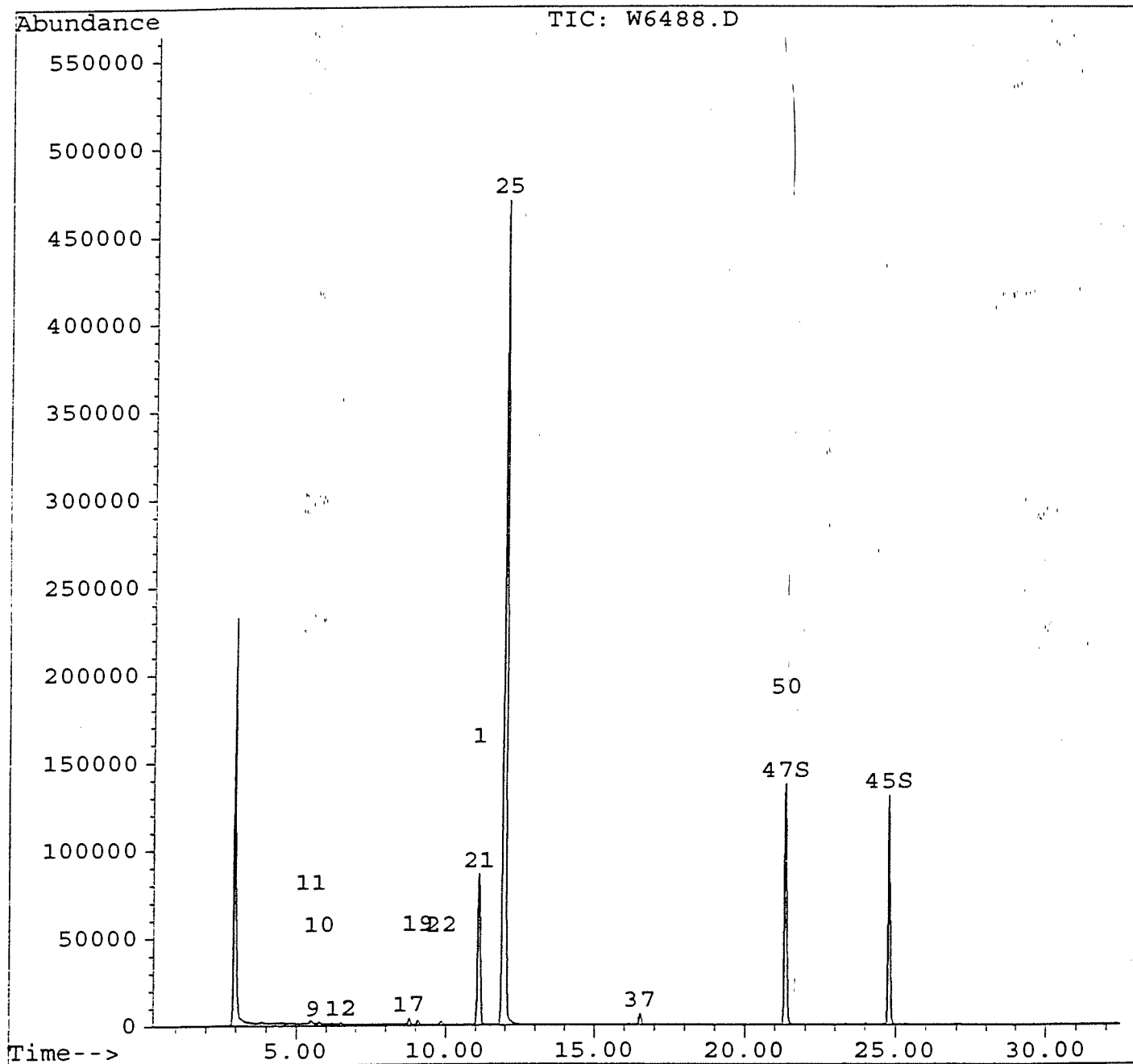
002090

Quantitation Report

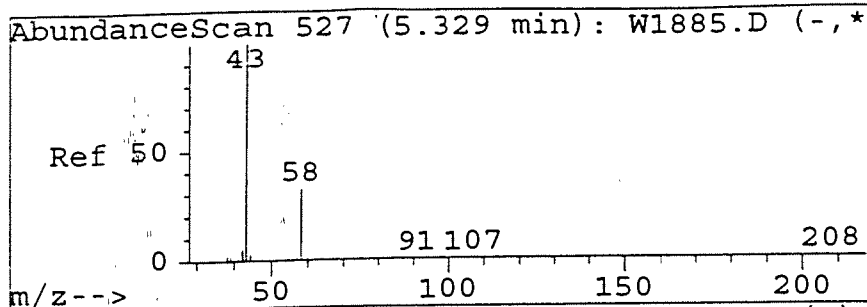
Data File : C:\HPCHEM\1\DATA\JUL17\W6488.D
Acq Time : 17 Jul 96 5:45 pm
Sample : G9607215-3(4B)/B#96421
Misc : DF=250/100UL:25ML/GW-4/ALLIED SIGNAL
Quant Time: Jul 17 18:17 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

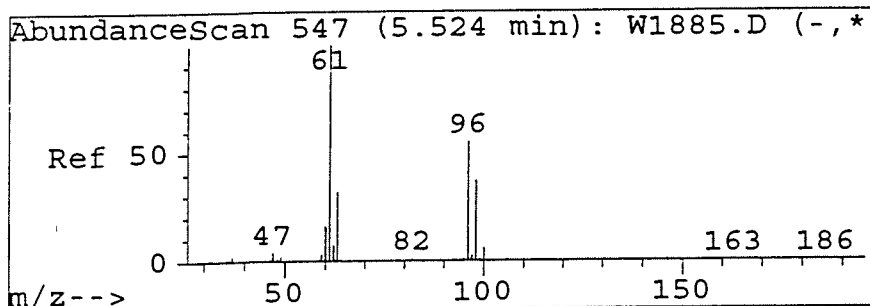
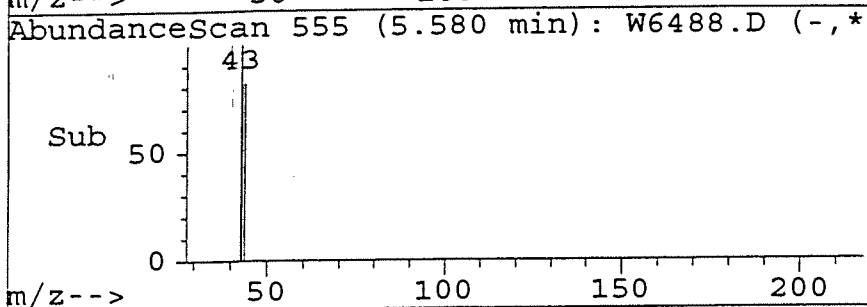
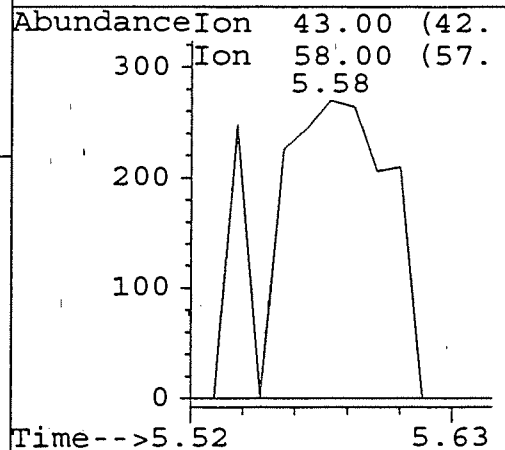
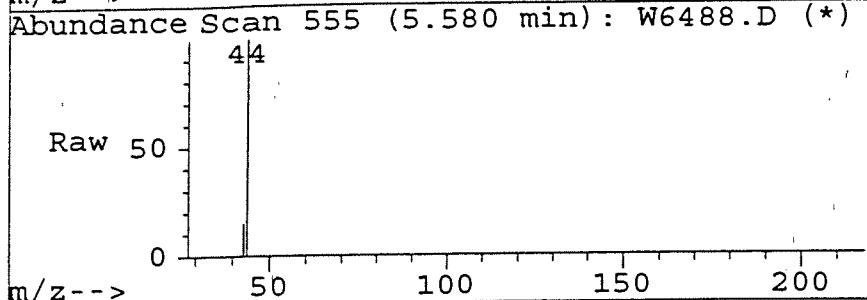


002091



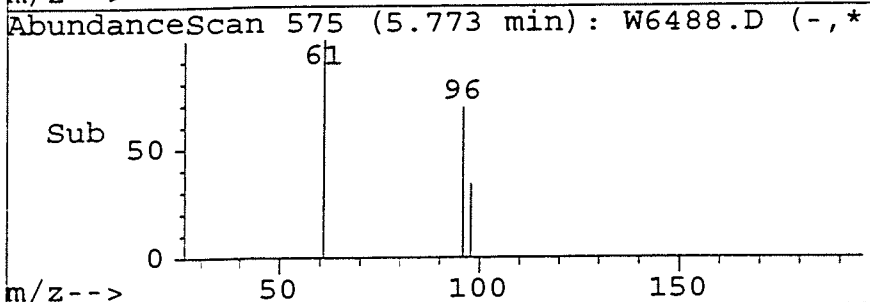
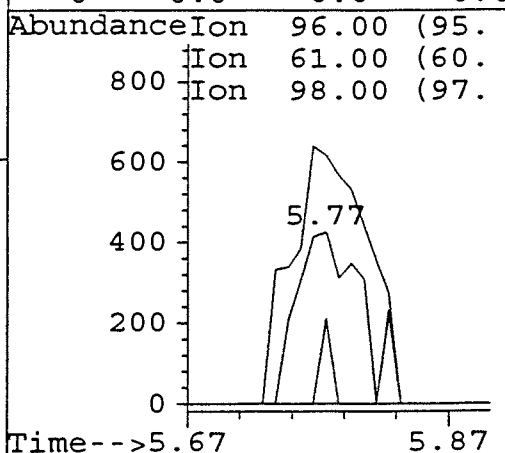
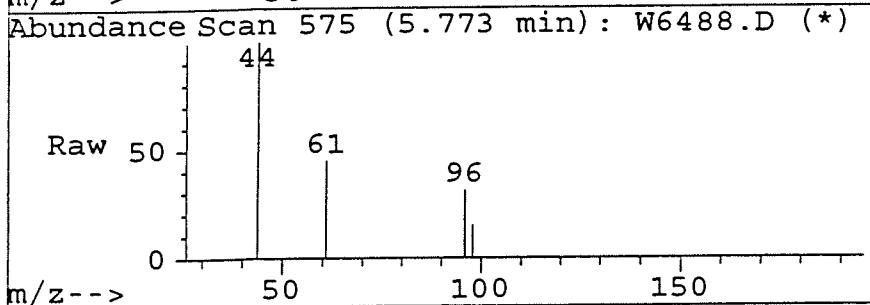
#9
Acetone
Concen: 3.48 ug/l
RT: 5.58 min Scan# 555
Delta R.T. -0.05 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

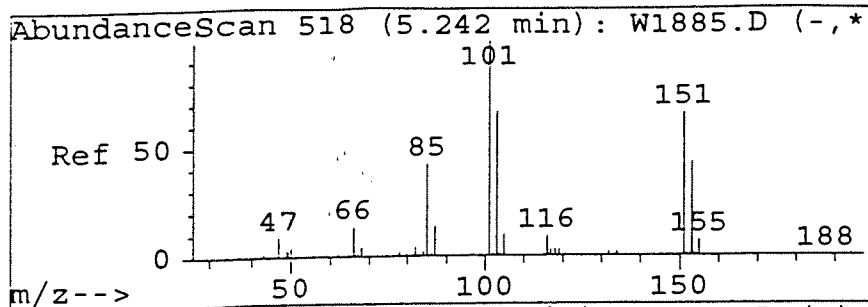
Tgt Ion:	43	Resp:	821
Ion Ratio	Lower	Upper	
43	100		
58	0.0	0.0	50.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#10
1,1-Dichloroethene
Concen: 0.27 ug/l
RT: 5.77 min Scan# 575
Delta R.T. -0.06 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

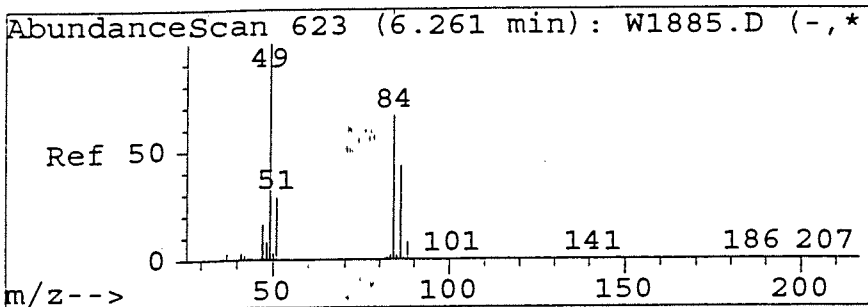
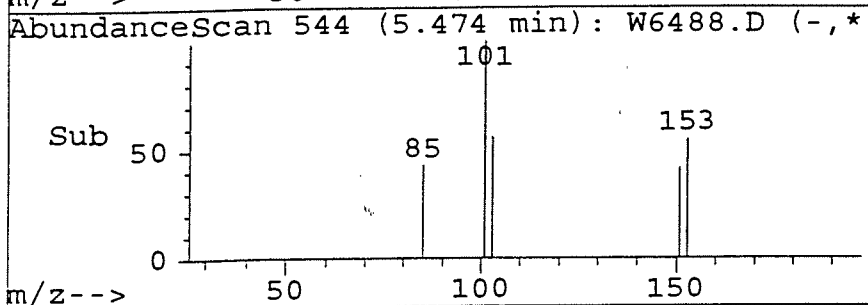
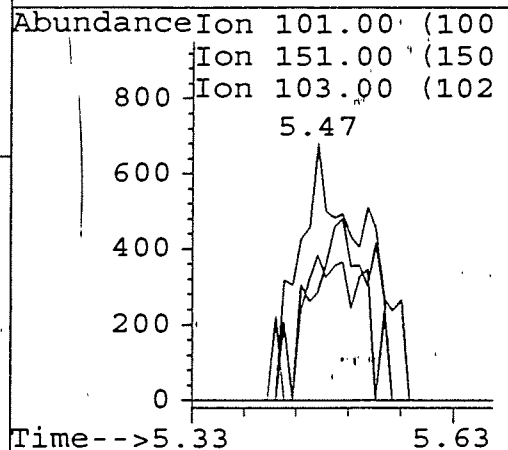
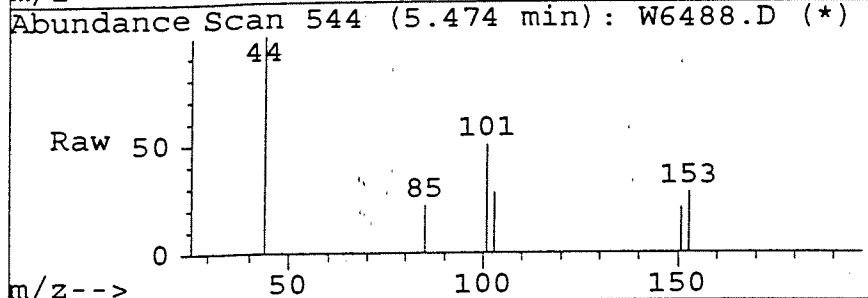
Tgt Ion:	96	Resp:	1480
Ion Ratio	Lower	Upper	
96	100		
61	175.2	102.5	202.5
98	0.0	12.4	112.4#
0	0.0	0.0	0.0





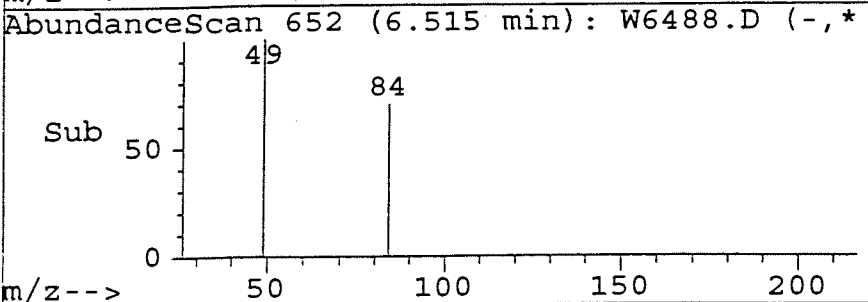
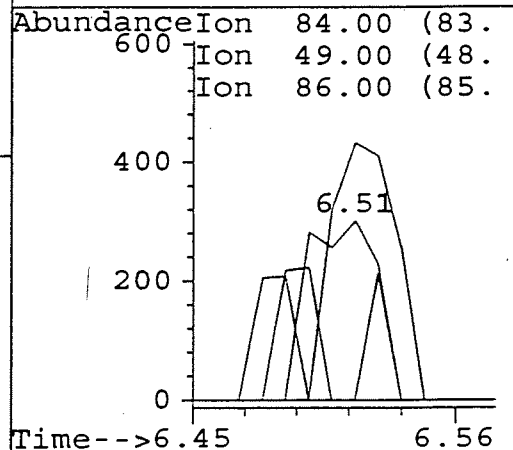
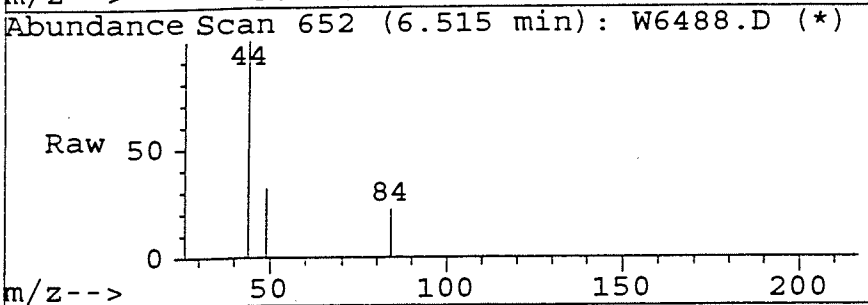
#11
Freon 113
Concen: 0.30 ug/l
RT: 5.47 min Scan# 544
Delta R.T. -0.07 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

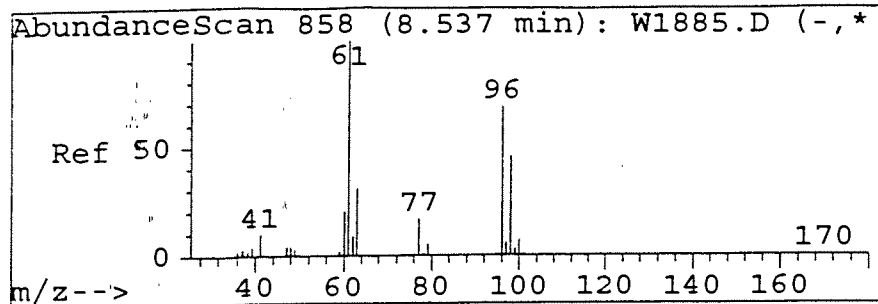
Tgt Ion	Ratio	Lower	Upper
101	100		
151	61.7	45.9	85.9
103	53.8	46.7	86.7
0	0.0	0.0	0.0



#12
Methylene Chloride
Concen: 0.16 ug/l
RT: 6.51 min Scan# 652
Delta R.T. -0.09 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

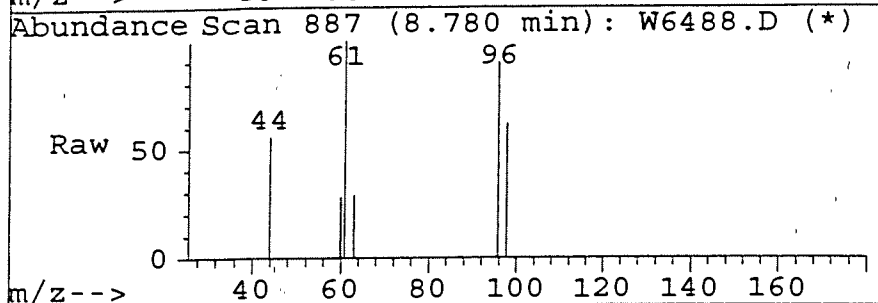
Tgt Ion	Ratio	Lower	Upper
84	100		
49	171.4	41.6	221.6
86	41.3	0.0	157.2
0	0.0	0.0	0.0



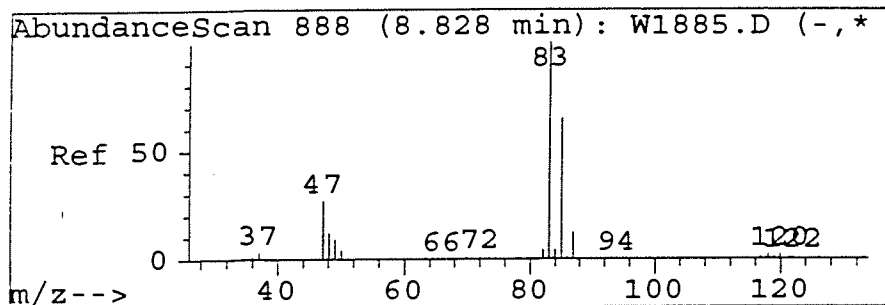
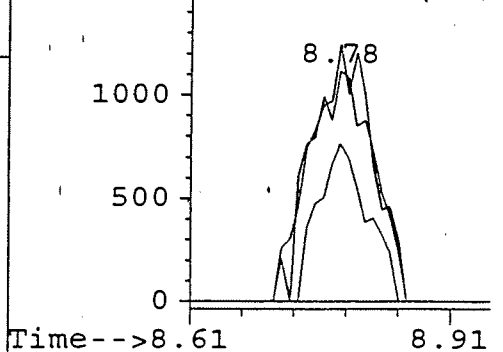
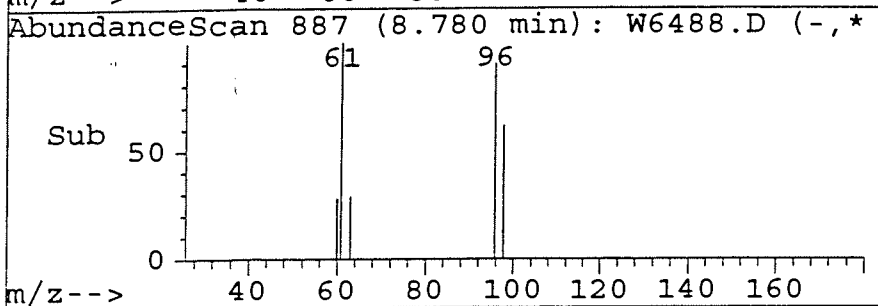


#17
1,2-Dichloroethene (cis-)
Concen: 0.92 ug/l
RT: 8.78 min Scan# 887
Delta R.T. -0.17 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

Tgt Ion:	96	Resp:	5863
Ion	Ratio	Lower	Upper
96	100		
61	107.2	84.0	184.0
98	53.3	14.7	114.7
0	0.0	0.0	0.0

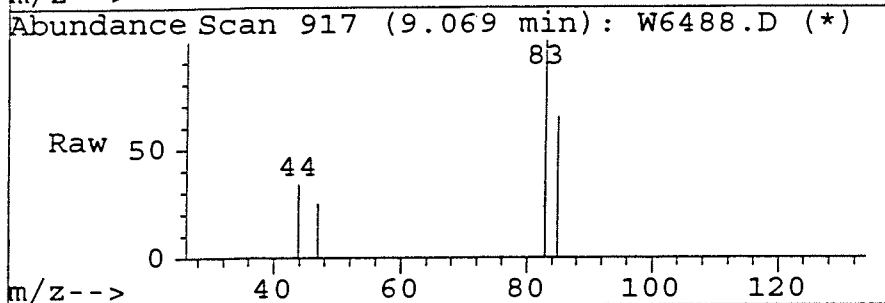


Abundance	Ion	96.00 (95.
	Ion	61.00 (60.
	Ion	98.00 (97.

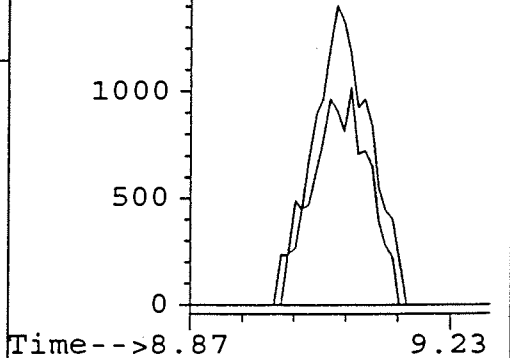
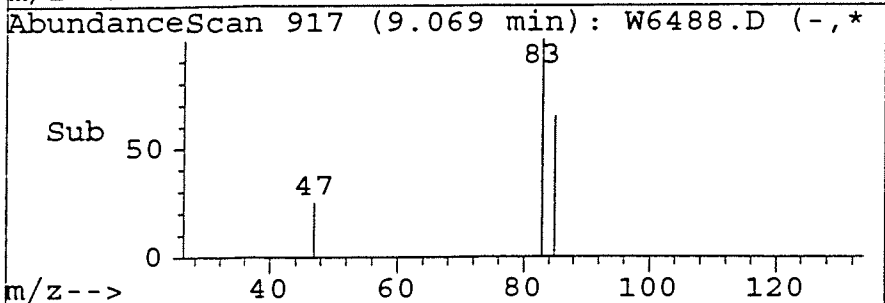


#19
Chloroform
Concen: 0.59 ug/l
RT: 9.07 min Scan# 917
Delta R.T. -0.17 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

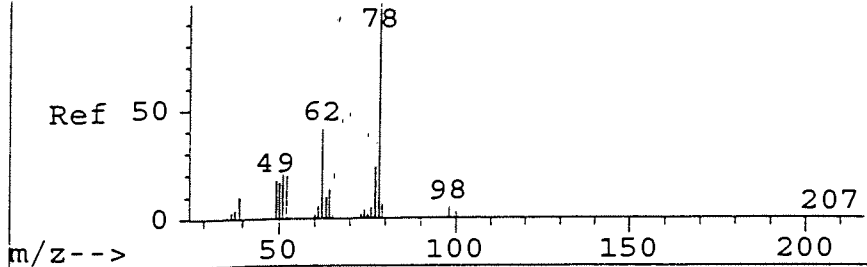
Tgt Ion:	83	Resp:	7749
Ion	Ratio	Lower	Upper
83	100		
85	71.0	17.3	117.3
0	0.0	0.0	0.0
0	0.0	0.0	0.0



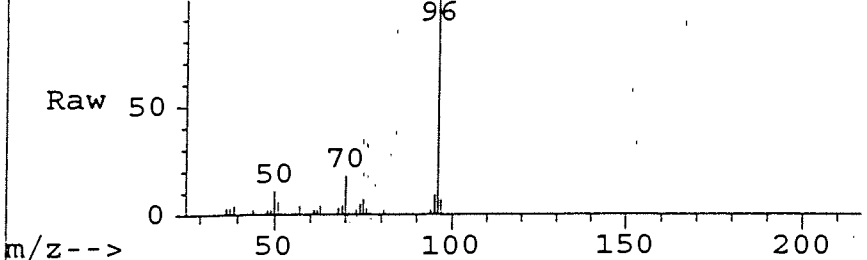
Abundance	Ion	83.00 (82.
	Ion	85.00 (84.
		9.07



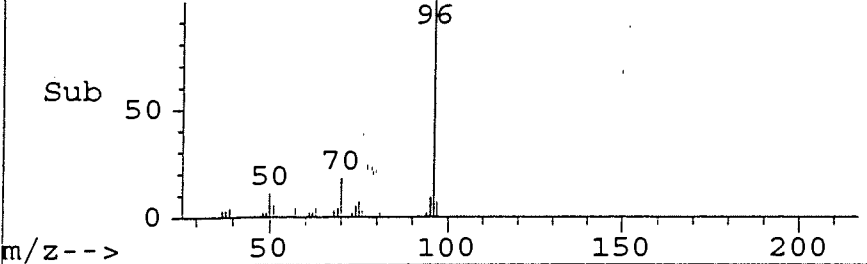
AbundanceScan 1049 (10.390 min): W1885.D (-



AbundanceScan 1127 (11.094 min): W6488.D (*)

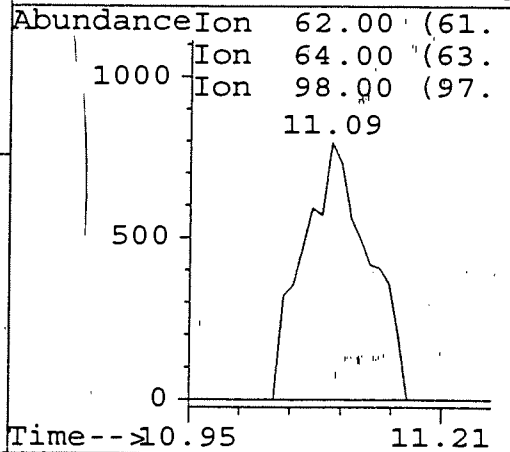


AbundanceScan 1127 (11.094 min): W6488.D (-

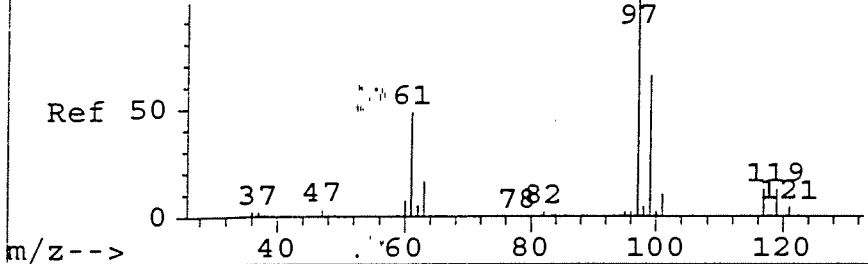


#21
1,2-Dichloroethane
Concen: 0.61 ug/l
RT: 11.09 min Scan# 1127
Delta R.T. - 0.25 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

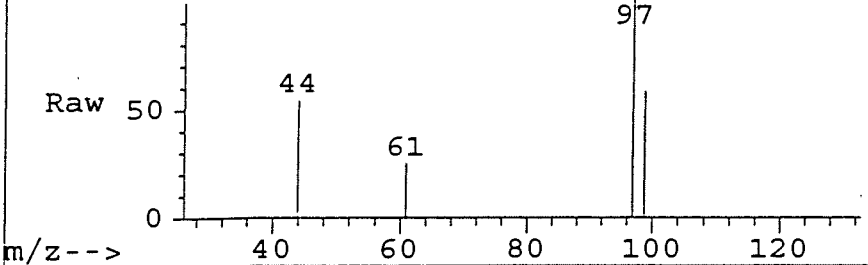
Tgt Ion:	62	Resp:	3644
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0



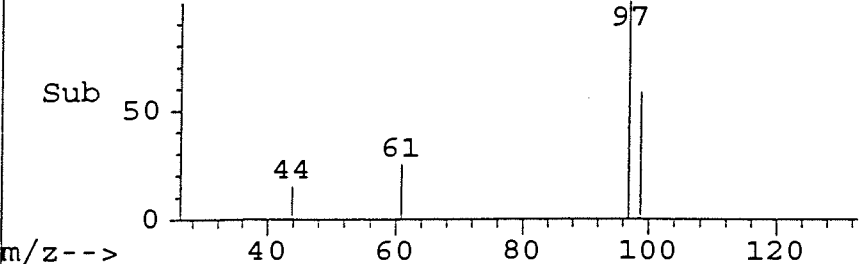
AbundanceScan 967 (9.594 min): W1885.D (-,*



AbundanceScan 997 (9.841 min): W6488.D (*)

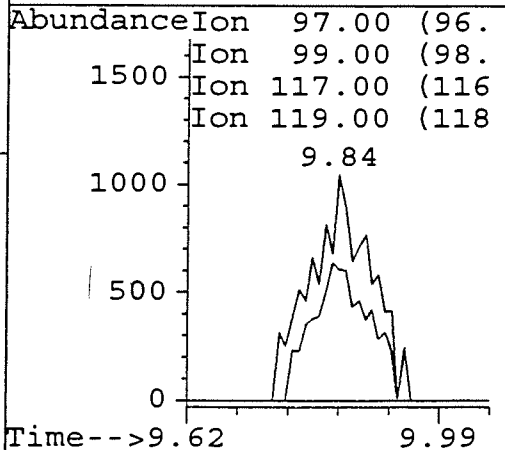


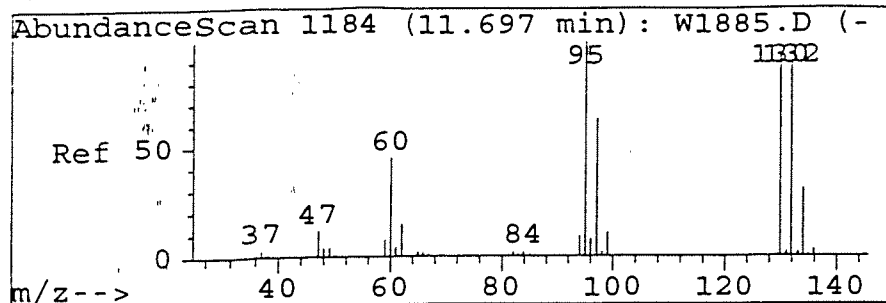
AbundanceScan 997 (9.841 min): W6488.D (-,*



#22
1,1,1-Trichloroethane
Concen: 0.40 ug/l
RT: 9.84 min Scan# 997
Delta R.T. -0.19 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

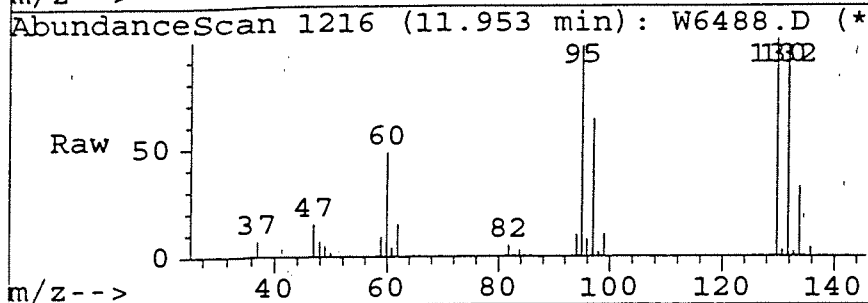
Tgt Ion:	97	Resp:	6289
Ion	Ratio	Lower	Upper
97	100		
99	59.1	18.2	118.2
117	0.0	0.0	57.5
119	0.0	0.0	60.9



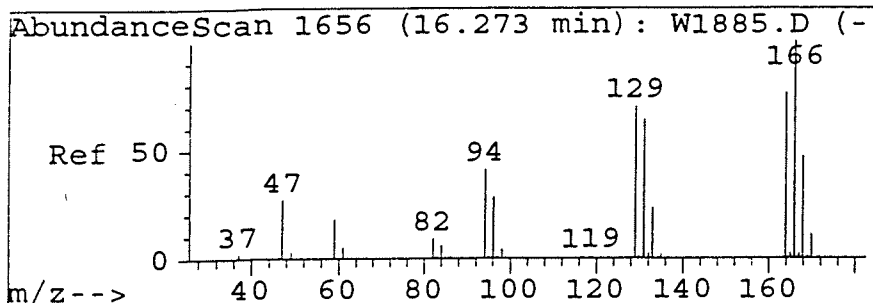
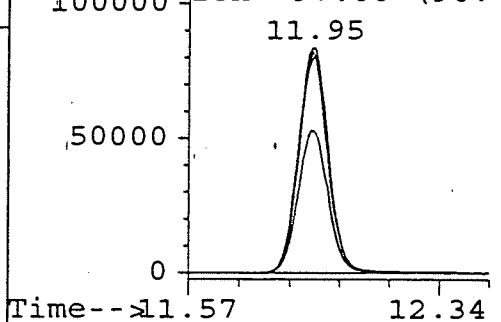
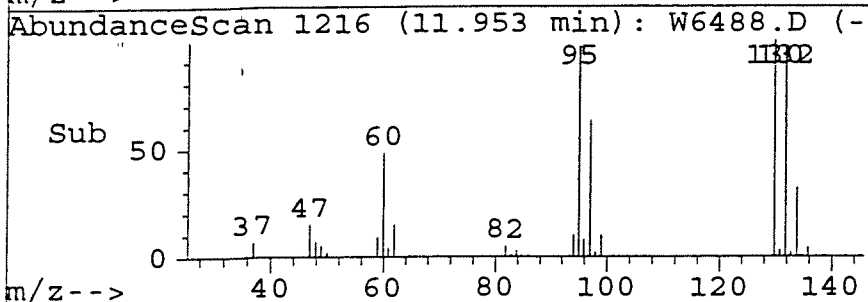


#25
Trichloroethene
Concen: 47.95 ug/l
RT: 11.95 min Scan# 1216
Delta R.T. -0.20 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

Tgt Ion	Ratio	Lower	Upper
130	100		
132	97.8	46.4	146.4
95	94.3	54.1	154.1
97	63.2	16.2	116.2

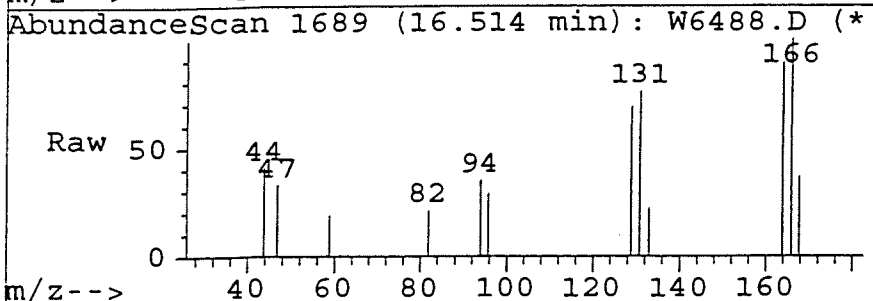


Abundance	Ion	Ratio
100000	130.00	(129
	132.00	(131
	95.00	(94.
	97.00	(96.

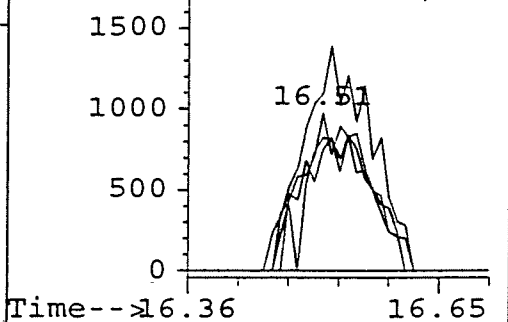
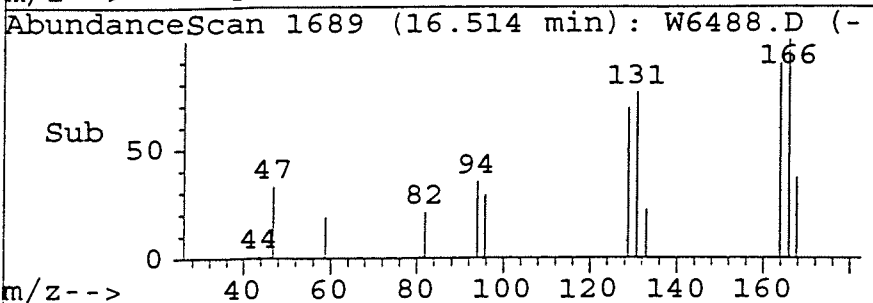


#37
Tetrachloroethene
Concen: 0.45 ug/l
RT: 16.51 min Scan# 1689
Delta R.T. -0.27 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

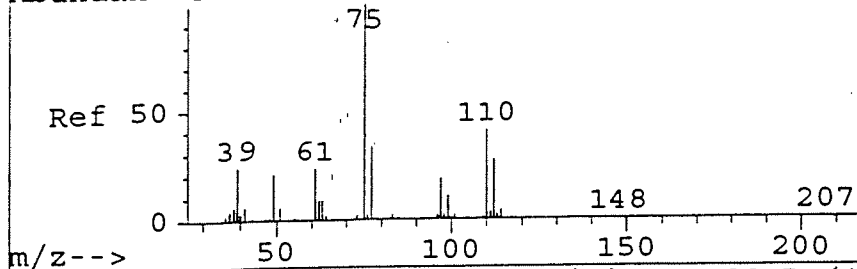
Tgt Ion	Ratio	Lower	Upper
164	100		
166	142.5	81.6	181.6
129	85.6	33.6	133.6
131	87.4	29.4	129.4



Abundance	Ion	Ratio
2000	164.00	(163
	166.00	(165
	129.00	(128
	131.00	(130



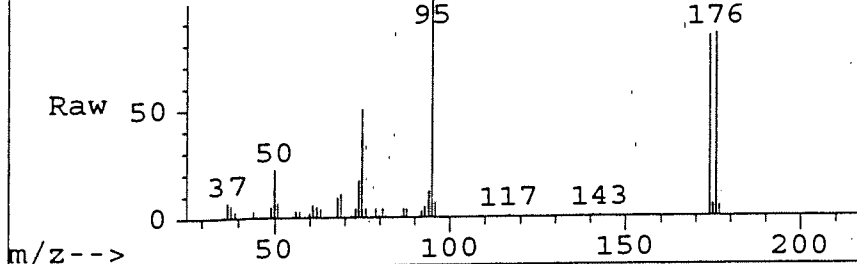
AbundanceScan 2174 (21.295 min): W1885.D (-



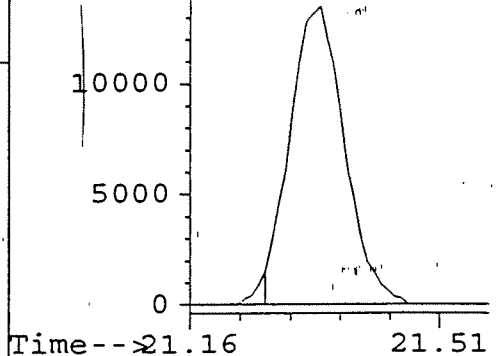
#50
1,2,3-Trichloropropane
Concen: 23.76 ug/l
RT: 21.34 min Scan# 2190
Delta R.T. -0.19 min
Lab File: W6488.D
Acq: 17 Jul 96 5:45 pm

Tgt Ion	Ratio	Lower	Upper
75	100		
110	0.0	0.0	86.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0

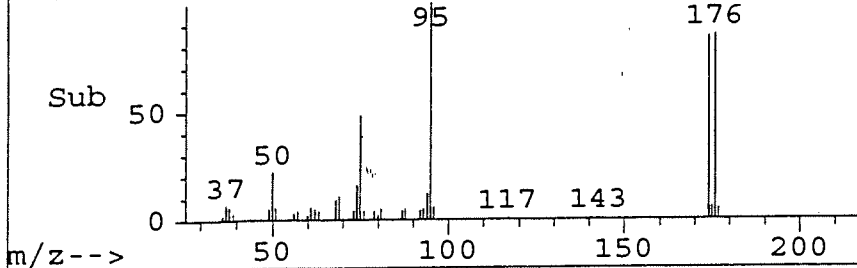
AbundanceScan 2190 (21.344 min): W6488.D (*)



AbundanceIon 75.00 (74.
Ion 110.00 (109
21.34



AbundanceScan 2190 (21.344 min): W6488.D (-



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6488.D

Acq Time : 17 Jul 96 5:45 pm

Sample : G9607215-3(4B)/B#96421

Misc : DF=250/100UL:25ML/GW-4/ALLIED SIGNAL

Operator: DEBBIE

Inst : VOA3

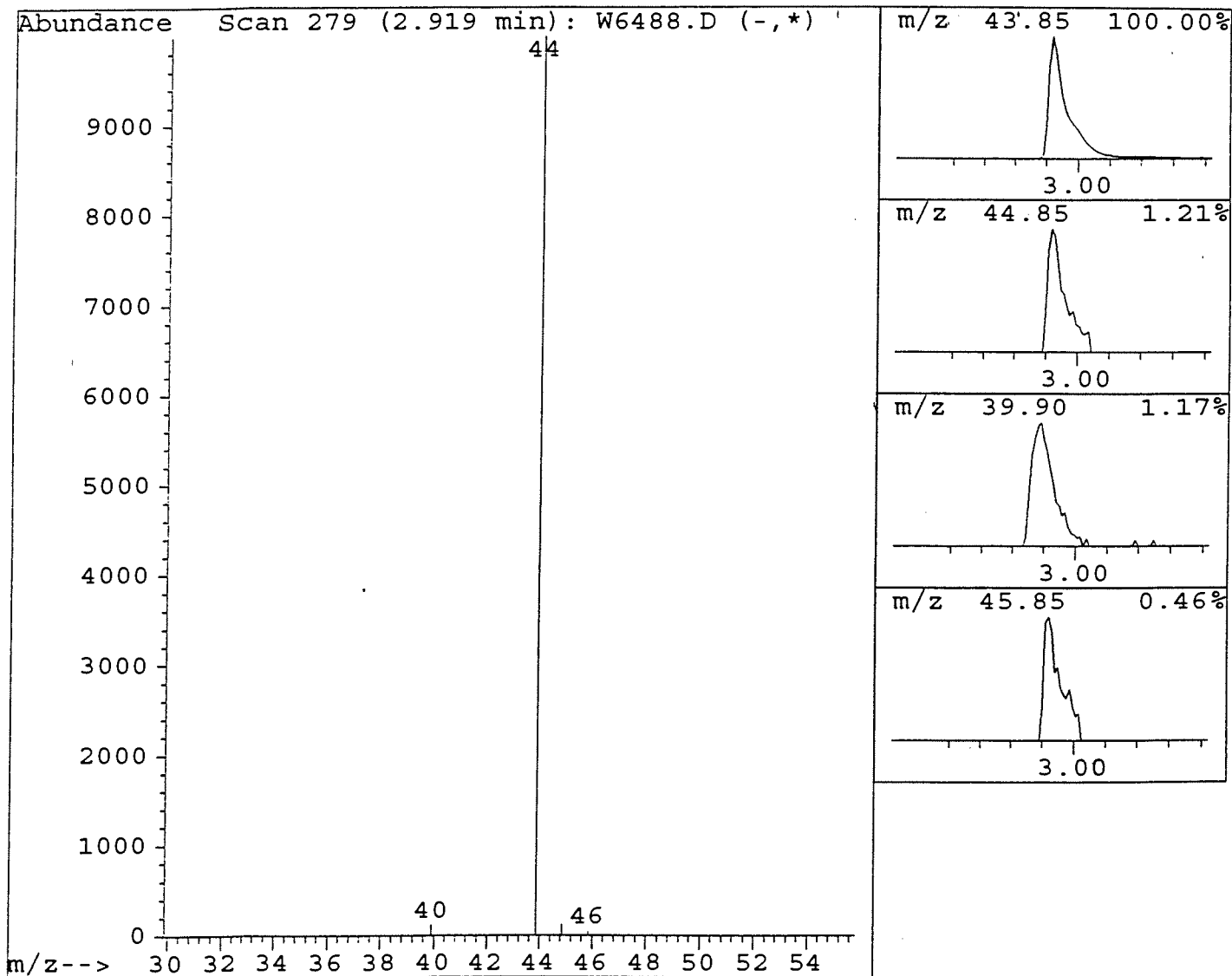
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.92	16.67 ug/l	922121	Fluorobenzene	11.10	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 No Hits From C:\DATABASE\NBS75K.L			0	000000-00-0	0



002098

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6489.D
 Acq Time : 17 Jul 96 6:24 pm
 Sample : G9607215-2(4B)/B#96422
 Misc : DF=25/1.0ML:25ML/GW-4/ALLIED SIGNAL
 Quant Time: Jul 17 18:56 1996 -8

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.10	96	226565	10.00	ug/l	-0.00
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.79	150	138435	10.62	ug/l	106.1%
47) Bromofluorobenzene	21.33	95	128148	10.42	ug/l	104.2%
Target Compounds						
9) Acetone	5.61	43	287	1.49	ug/l	# 100
11) Freon 113	5.52	101	1012	0.10	ug/l	# 72
12) Methylene Chloride	6.50	84	885	0.28	ug/l	# 46
17) 1,2-Dichloroethene (cis-)	8.81	96	646	0.12	ug/l	# 61
19) Chloroform	9.08	83	1593	0.15	ug/l	# 64
21) 1,2-Dichloroethane	11.09	62	2635	0.54	ug/l	# 48
22) 1,1,1-Trichloroethane	9.83	97	2241	0.17	ug/l	# 79
25) Trichloroethene	11.94	130	250620	27.00	ug/l	# 95
37) Tetrachloroethene	16.50	164	1544	0.16	ug/l	# 1
50) 1,2,3-Trichloropropane	21.33	75	61947	24.90	ug/l	# 39

Report TCE ONLY = 680

BATCH # 96422
 DATE 07/17/96
 ANALYST Vmm

REVIEWED & APPROVED
 BY _____ DATE _____

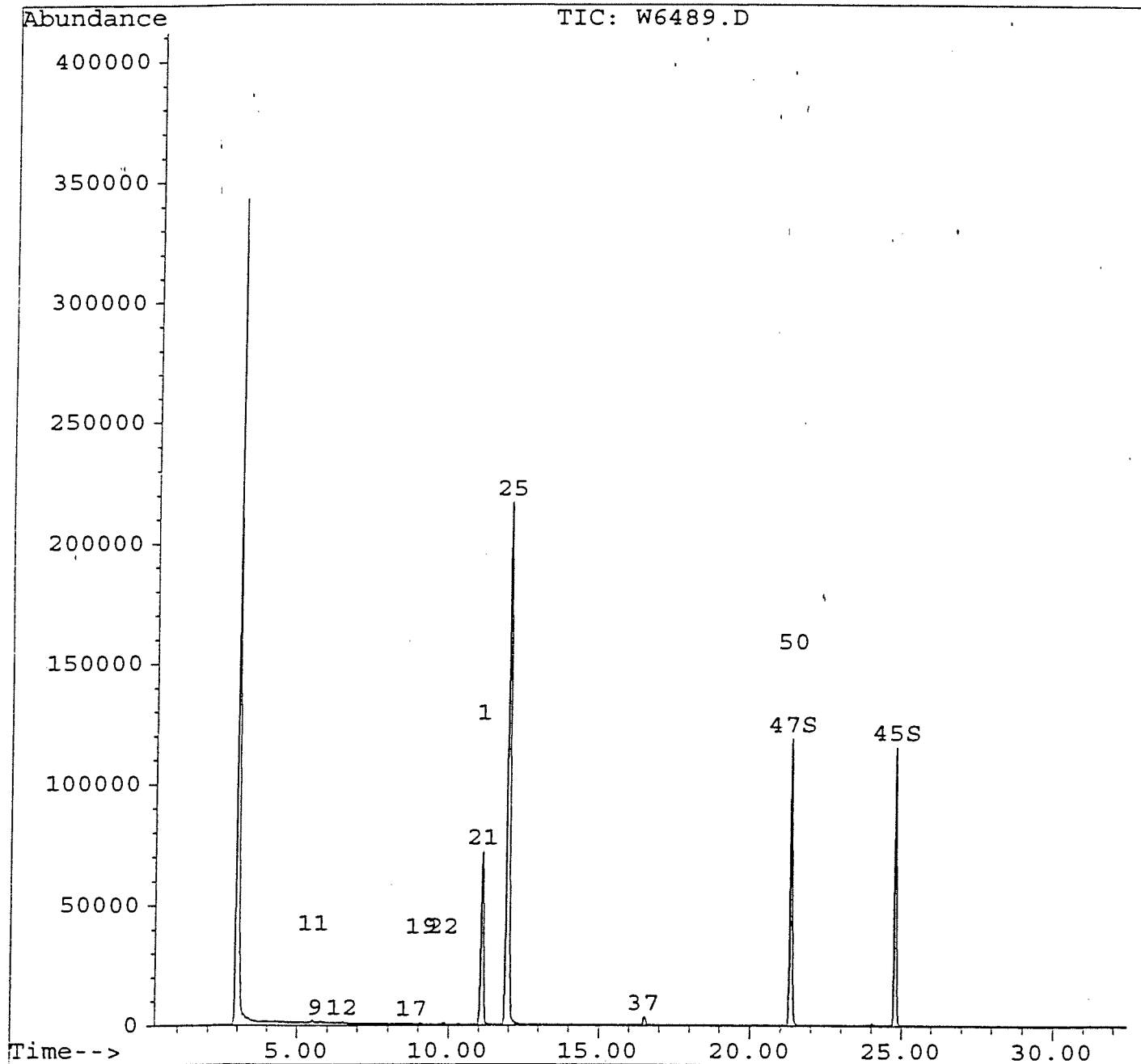
002099

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6489.D
Acq Time : 17 Jul 96 6:24 pm
Sample : G9607215-2(4B)/B#96421
Misc : DF=25/1.0ML:25ML/GW-4/ALLIED SIGNAL
Quant Time: Jul 17 18:56 1996

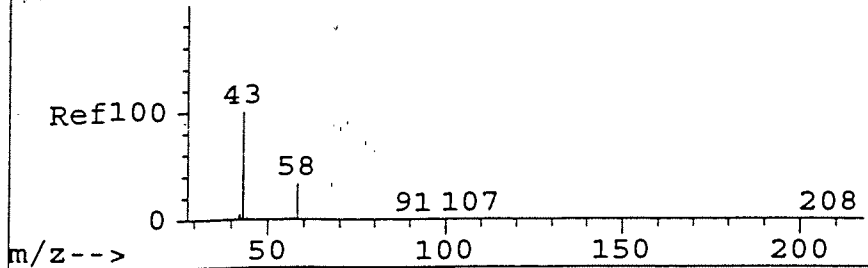
Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration



002100

AbundanceScan 527 (5.329 min): W1885.D (-,*



#9

Acetone

Concen: 1.49 ug/l

RT: 5.61 min Scan# 558

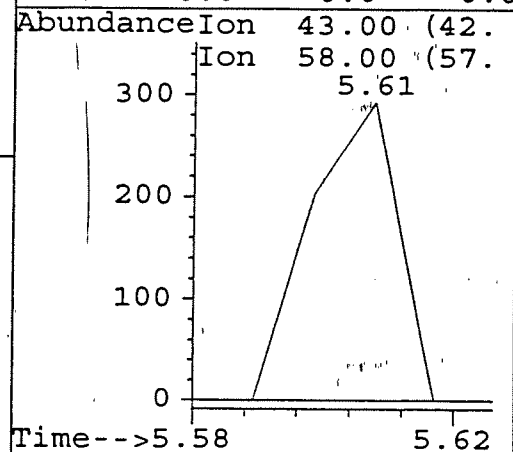
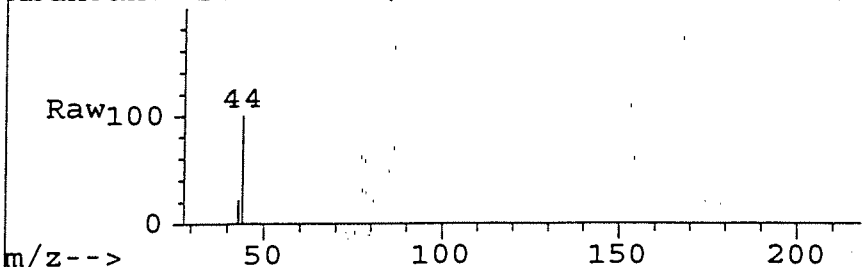
Delta R.T. - -0.02 min

Lab File: W6489.D

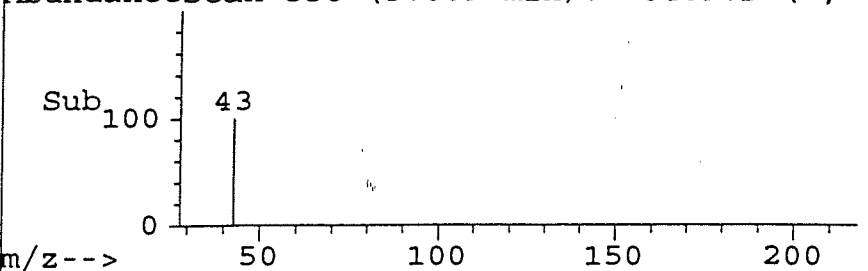
Acq: 17 Jul 96 6:24 pm

Tgt Ion:43	Resp:	287
Ion Ratio	Lower	Upper
43	100	
58	0.0	50.0
0	0.0	0.0
0	0.0	0.0

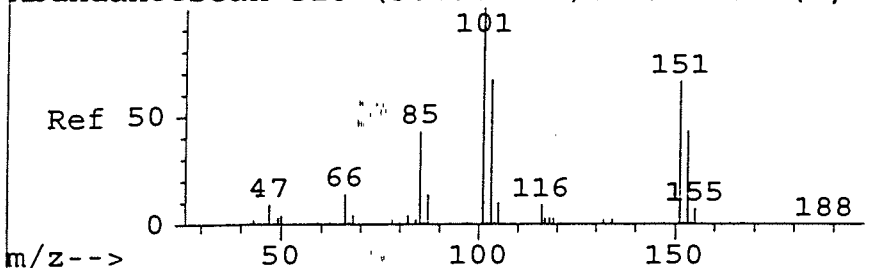
Abundance Scan 558 (5.609 min): W6489.D (*)



AbundanceScan 558 (5.609 min): W6489.D (-,*



AbundanceScan 518 (5.242 min): W1885.D (-,*



#11

Freon 113

Concen: 0.10 ug/l

RT: 5.52 min Scan# 549

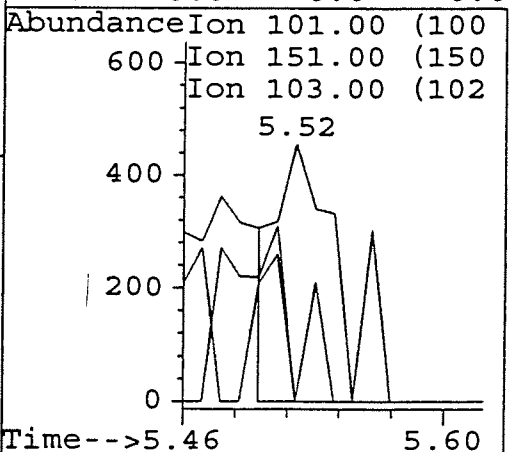
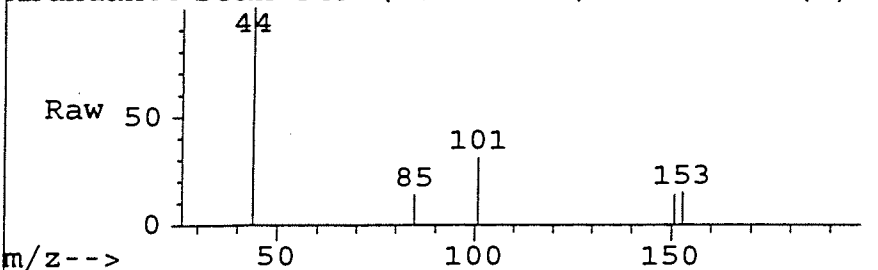
Delta R.T. - -0.02 min

Lab File: W6489.D

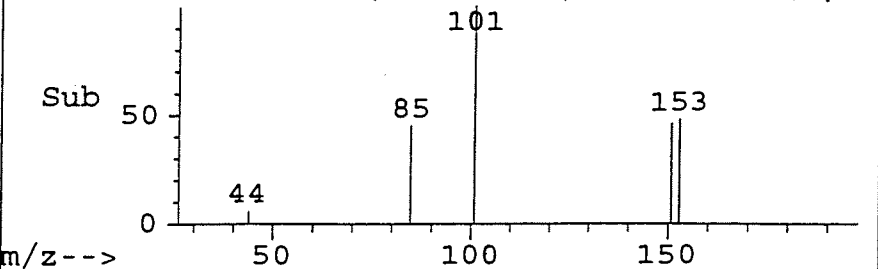
Acq: 17 Jul 96 6:24 pm

Tgt Ion:101	Resp:	1012
Ion Ratio	Lower	Upper
101	100	
151	26.7	85.9#
103	70.4	86.7
0	0.0	0.0

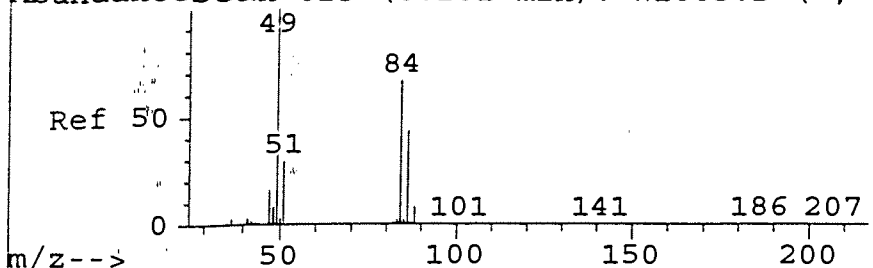
Abundance Scan 549 (5.522 min): W6489.D (*)



AbundanceScan 549 (5.522 min): W6489.D (-,*



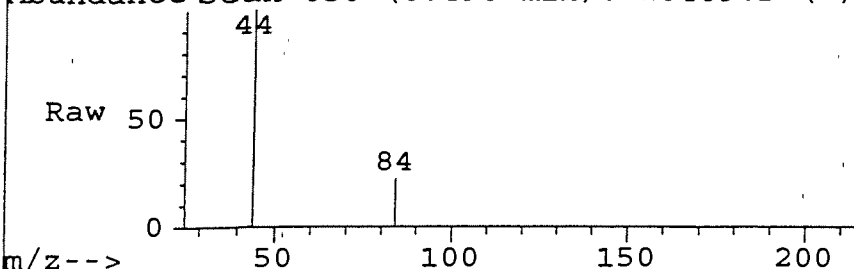
AbundanceScan 623 (6.261 min): W1885.D (-,*



#12
Methylene Chloride
Concen: 0.28 ug/l
RT: 6.50 min Scan# 650
Delta R.T. -0.10 min
Lab File: W6489.D
Acq: 17 Jul 96 6:24 pm

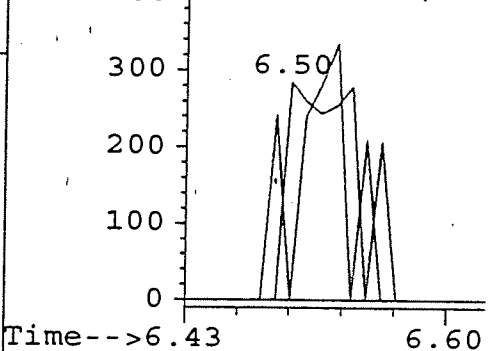
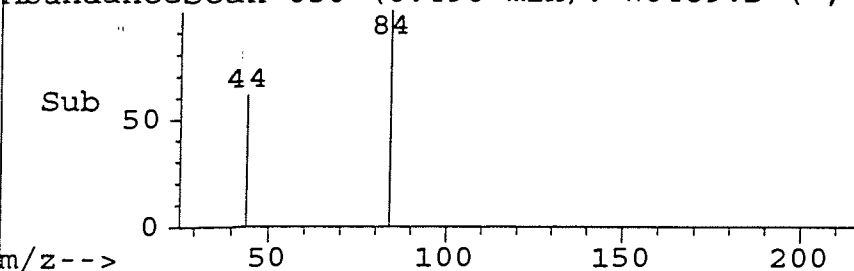
Tgt Ion:84	Resp:	885
Ion Ratio	Lower	Upper
84 100		
49 85.5	41.6	221.6
86 0.0	0.0	157.2
0 0.0	0.0	0.0

Abundance Scan 650 (6.496 min): W6489.D (*)

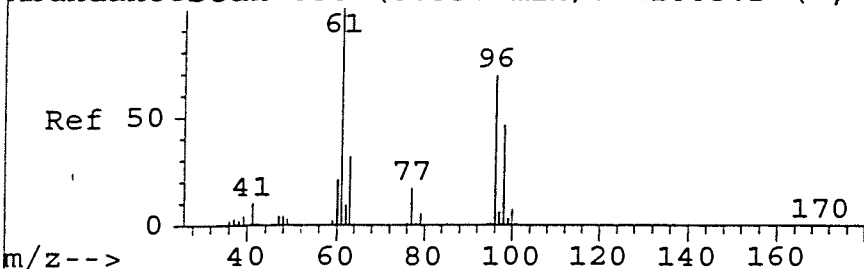


AbundanceIon	84:00 (83.
Ion	49:00 (48.
Ion	86:00 (85.

AbundanceScan 650 (6.496 min): W6489.D (-,*



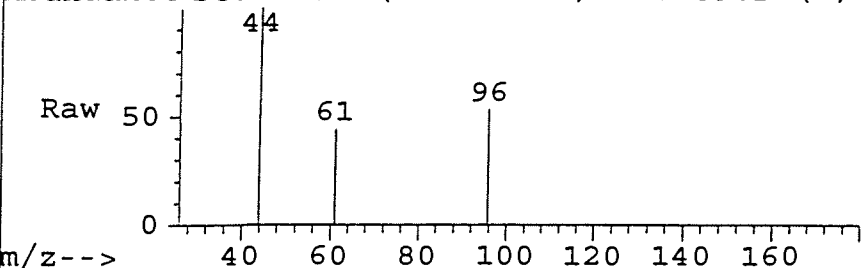
AbundanceScan 858 (8.537 min): W1885.D (-,*



#17
1,2-Dichloroethene (cis-)
Concen: 0.12 ug/l
RT: 8.81 min Scan# 890
Delta R.T. -0.14 min
Lab File: W6489.D
Acq: 17 Jul 96 6:24 pm

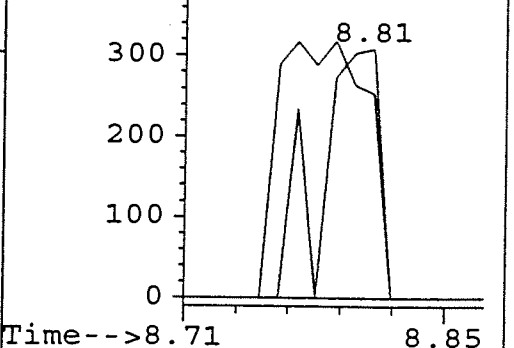
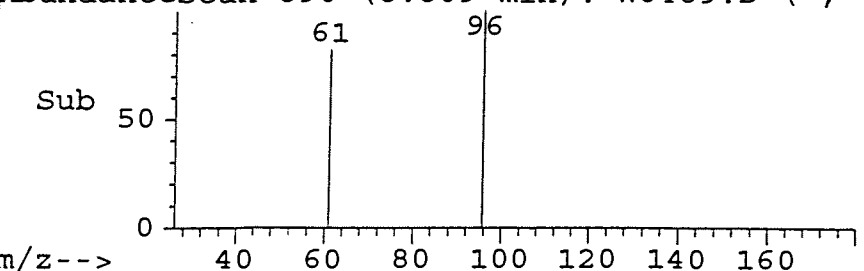
Tgt Ion:96	Resp:	646
Ion Ratio	Lower	Upper
96 100		
61 154.8	84.0	184.0
98 0.0	14.7	114.7#
0 0.0	0.0	0.0

Abundance Scan 890 (8.809 min): W6489.D (*)

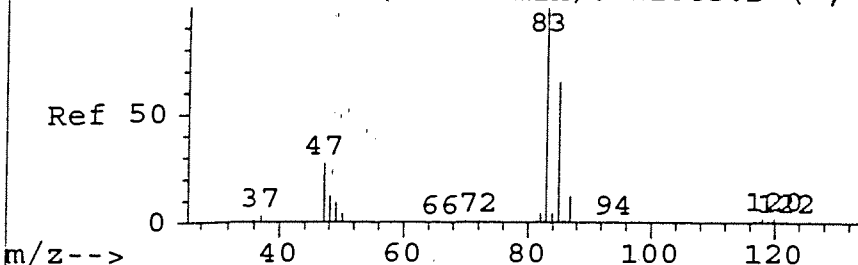


AbundanceIon	96:00 (95.
Ion	61:00 (60.
Ion	98:00 (97.

AbundanceScan 890 (8.809 min): W6489.D (-,*



AbundanceScan 888 (8.828 min): W1885.D (-, *



#19

Chloroform

Concen: 0.15 ug/l

RT: 9.08 min Scan# 918

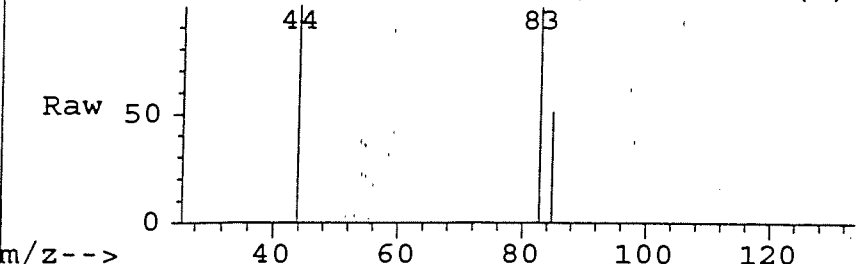
Delta R.T. -0.16 min

Lab File: W6489.D

Acq: 17 Jul 96 6:24 pm

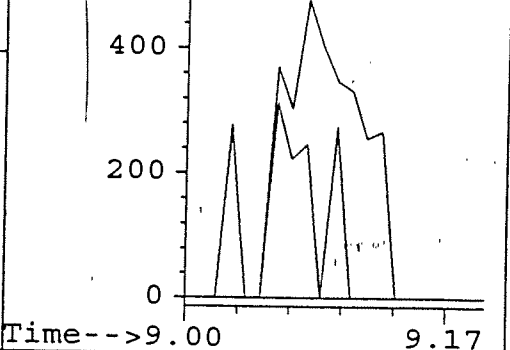
Tgt Ion:83	Resp:	1593
Ion Ratio	Lower	Upper
83	100	
85	38.3	17.3 117.3
0	0.0	0.0 0.0
0	0.0	0.0 0.0

AbundanceScan 918 (9.079 min): W6489.D (*)

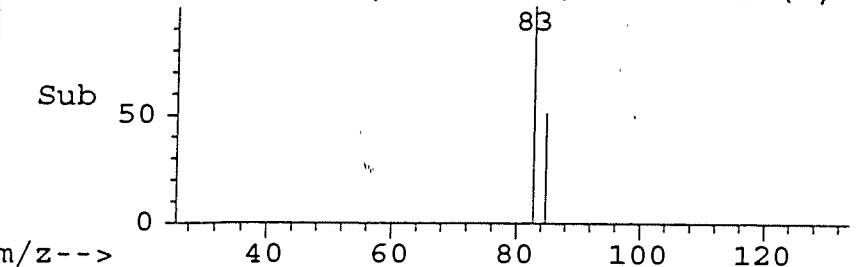


AbundanceIon 83.00 (82.00)

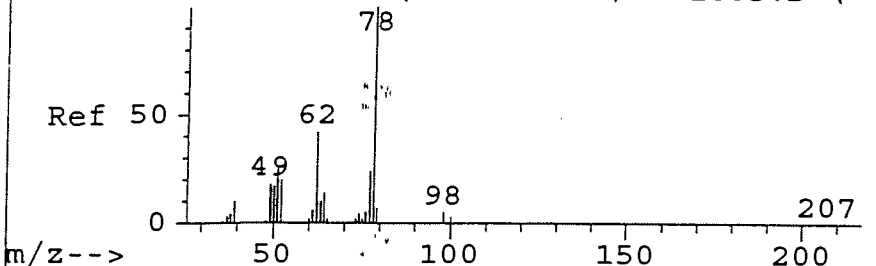
Ion 85.00 (84.00)



AbundanceScan 918 (9.079 min): W6489.D (-, *



AbundanceScan 1049 (10.390 min): W1885.D (-



#21

1,2-Dichloroethane

Concen: 0.54 ug/l

RT: 11.09 min Scan# 1127

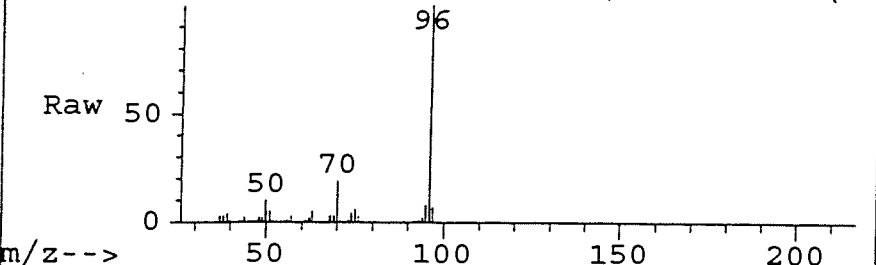
Delta R.T. 0.25 min

Lab File: W6489.D

Acq: 17 Jul 96 6:24 pm

Tgt Ion:62	Resp:	2635
Ion Ratio	Lower	Upper
62	100	
64	0.0	0.0 81.7
98	0.0	0.0 53.9
0	0.0	0.0 0.0

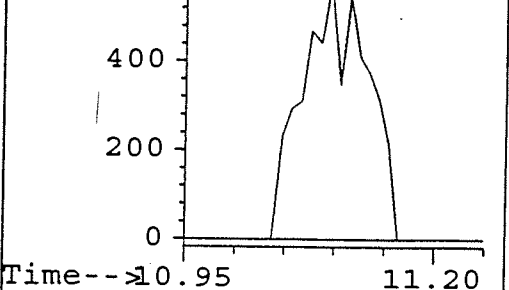
AbundanceScan 1127 (11.094 min): W6489.D (*)



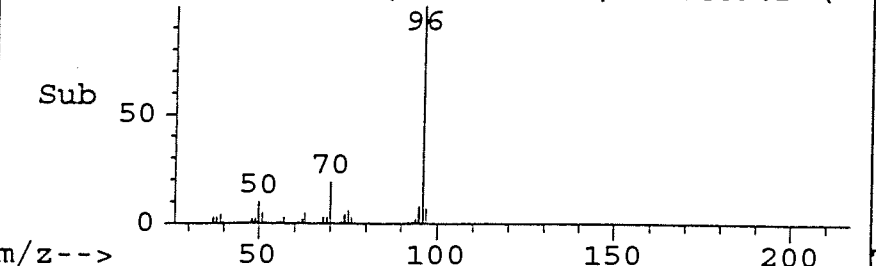
AbundanceIon 62.00 (61.00)

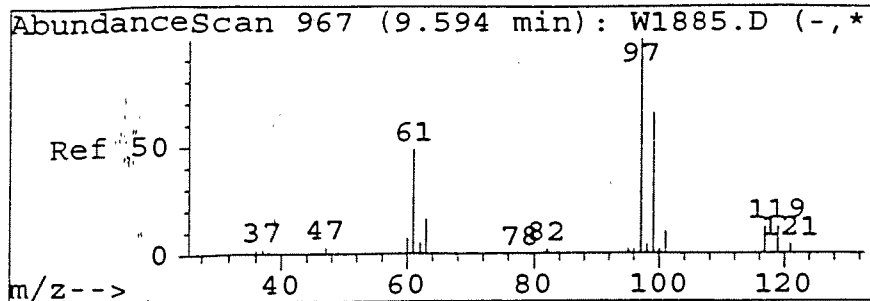
Ion 64.00 (63.00)

Ion 98.00 (97.00)



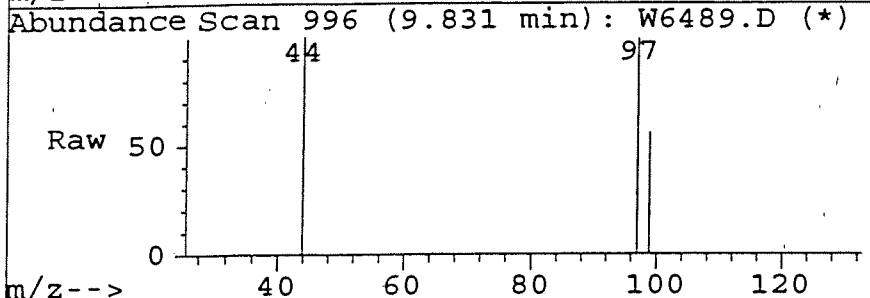
AbundanceScan 1127 (11.094 min): W6489.D (-



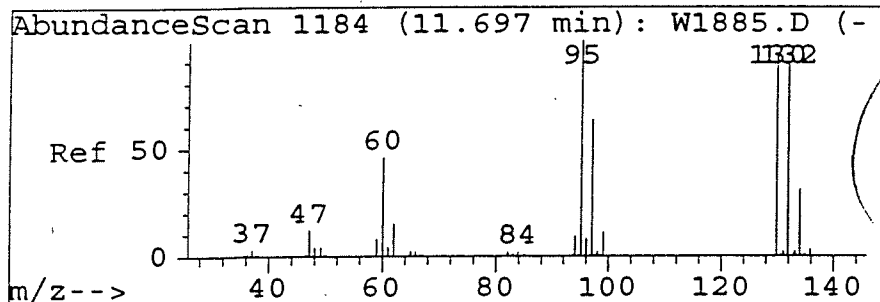
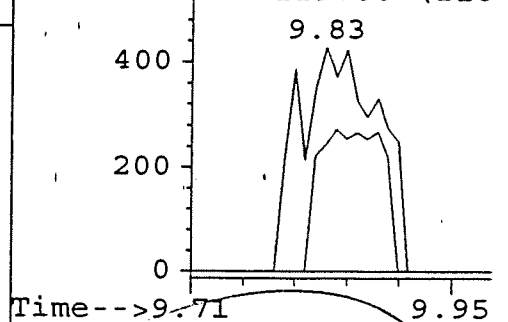
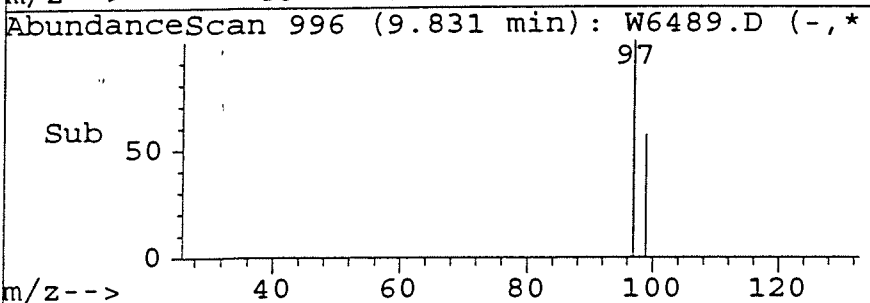


#22
1,1,1-Trichloroethane
Concen: 0.17 ug/l
RT: 9.83 min Scan# 996
Delta R.T. -0.20 min
Lab File: W6489.D
Acq: 17 Jul 96 6:24 pm

Tgt Ion:97	Resp:	2241
Ion Ratio	Lower	Upper
97	100	
99	51.9	18.2 118.2
117	0.0	0.0 57.5
119	0.0	0.0 60.9

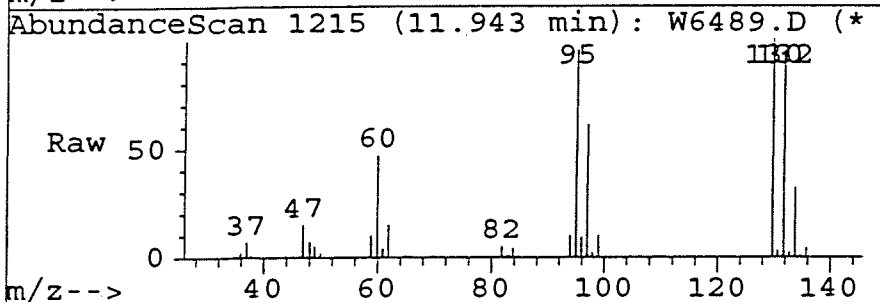


AbundanceIon	97.00 (96.
Ion	99.00 (98.
600	Ion 117.00 (116
Ion	119.00 (118

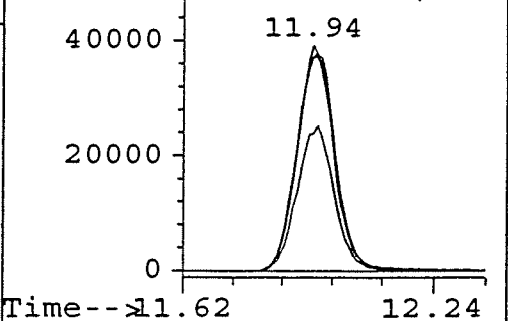
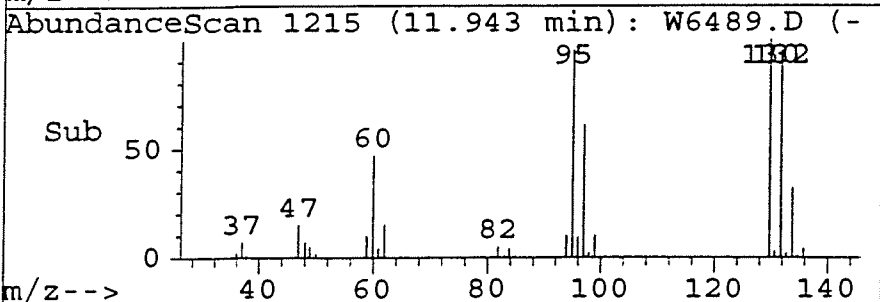


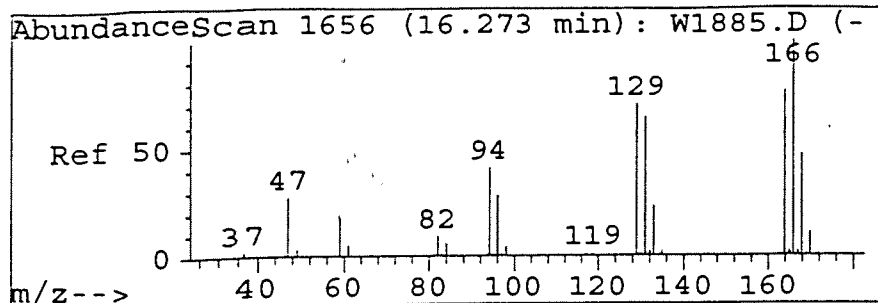
#25
Trichloroethene
Concen: 27.00 ug/l
RT: 11.94 min Scan# 1215
Delta R.T. -0.21 min
Lab File: W6489.D
Acq: 17 Jul 96 6:24 pm

Tgt Ion:130	Resp:	250620
Ion Ratio	Lower	Upper
130	100	
132	97.3	46.4 146.4
95	94.9	54.1 154.1
97	62.7	16.2 116.2



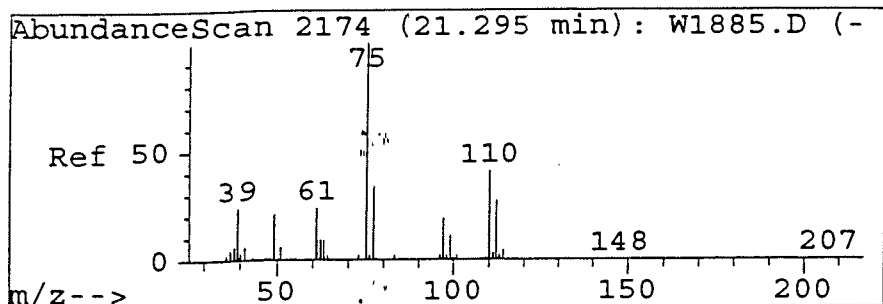
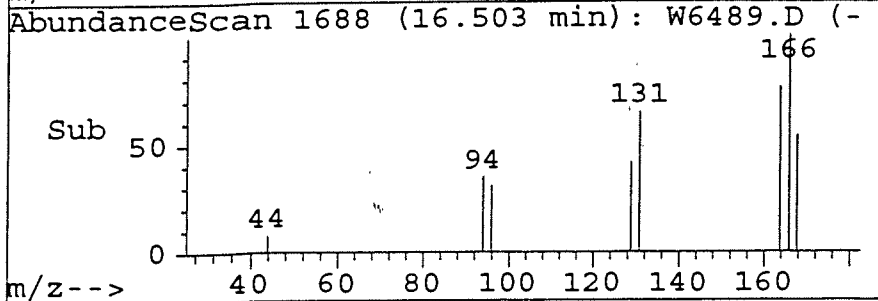
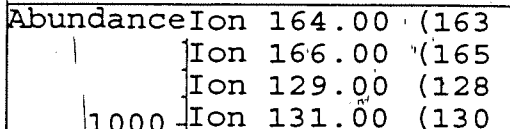
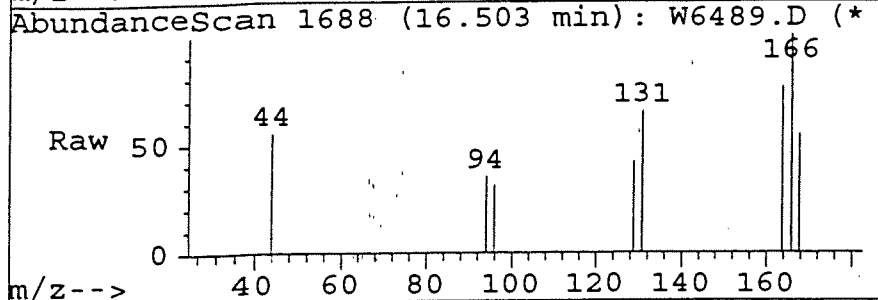
AbundanceIon	130.00 (129
60000	Ion 132.00 (131
Ion	95.00 (94.
Ion	97.00 (96.





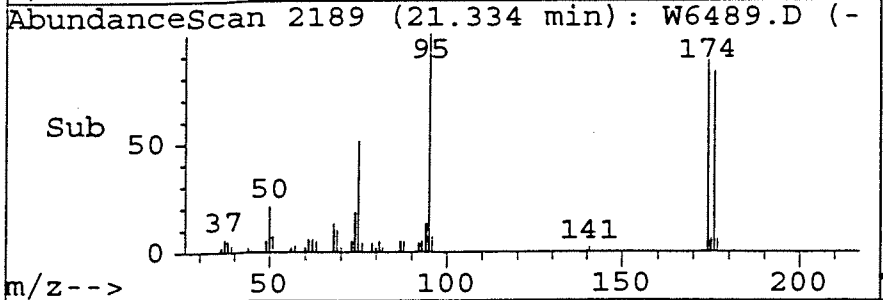
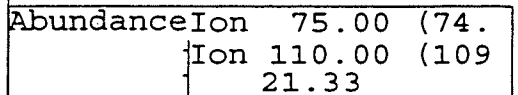
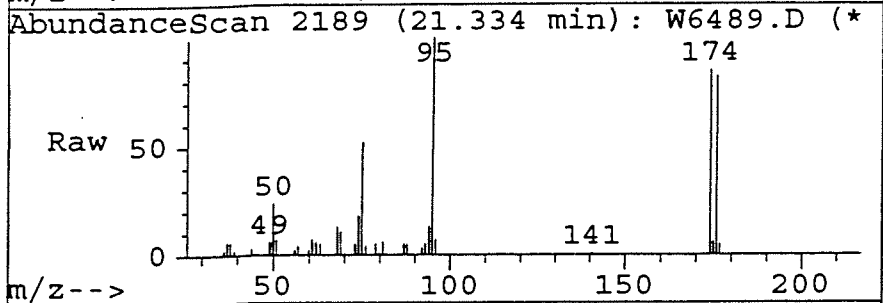
#37
Tetrachloroethene
Concen: 0.16 ug/l
RT: 16.50 min Scan# 1688
Delta R.T. - -0.28 min
Lab File: W6489.D
Acq: 17 Jul 96 6:24 pm

Tgt Ion:	164	Resp:	1544
Ion	Ratio	Lower	Upper
164	100		
166	280.0	81.6	181.6#
129	189.4	33.6	133.6#
131	158.7	29.4	129.4#



#50
1,2,3-Trichloropropane
Concen: 24.90 ug/l
RT: 21.33 min Scan# 2189
Delta R.T. -0.20 min
Lab File: W6489.D
Acq: 17 Jul 96 6:24 pm

Tgt Ion:	75	Resp:	61947
Ion	Ratio	Lower	Upper
75	100		
110	0.0	0.0	86.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6489.D

Acq Time : 17 Jul 96 6:24 pm

Sample : G9607215-2(4B)/B#96421

Misc : DF=25/1.0ML:25ML/GW-4/ALLIED SIGNAL

Operator: DEBBIE

Inst : VOA3

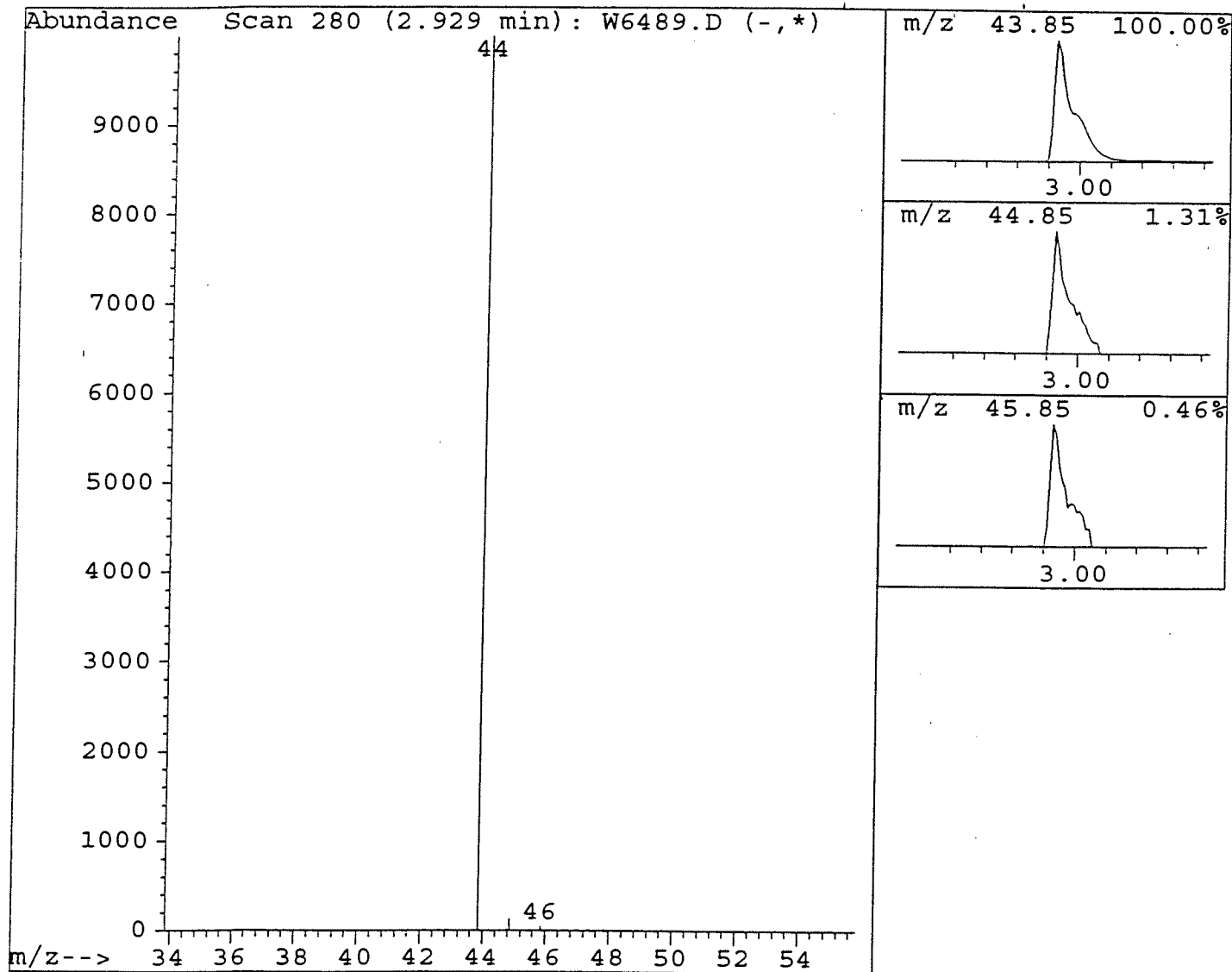
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.93	31.66 ug/l	1406150	Fluorobenzene	11.10
Hit# of	0	Tentative ID	Ref#	CAS#
1 No Hits From C:\DATABASE\NBS75K.L			0	000000-00-0



Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6490.D
 Acq Time : 17 Jul 96 7:03 pm
 Sample : G9607191-4 (4B)/B#96422
 Misc : DF=10/2.5ML:25ML/GW-4/ALLIED SIGNAL
 Quant Time: Jul 17 19:35 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Mi)
1) Fluorobenzene	11.11	96	260537	10.00	ug/l	0.0
System Monitoring Compounds						%Recover
45) 1,2-Dichlorobenzene-d4	24.79	150	145793	9.72	ug/l	97.2
47) Bromofluorobenzene	21.32	95	135994	9.62	ug/l	96.2
Target Compounds						Qvalu
9) Acetone	5.59	43	330	1.49	ug/l #	10
10) 1,1-Dichloroethene	5.79	96	6015	1.18	ug/l	9
11) Freon 113	5.52	101	6093	0.55	ug/l	9
12) Methylene Chloride	6.53	84	679	0.18	ug/l #	5
19) Chloroform	9.09	83	3229	0.26	ug/l	8
21) 1,2-Dichloroethane	11.11	62	3541	0.63	ug/l #	4
22) 1,1,1-Trichloroethane	9.85	97	21491	1.44	ug/l	9
23) Carbon Tetrachloride	10.38	117	2286	0.16	ug/l #	8
25) Trichloroethene	11.94	130	250755	23.49	ug/l	9
37) Tetrachloroethene	16.53	164	38299	3.48	ug/l	9
50) 1,2,3-Trichloropropane	21.33	75	60697	21.22	ug/l #	3

Report TCE ONLY = 230

BATCH # 96422
 DATE 7/17/96
 ANALYST imm

002107

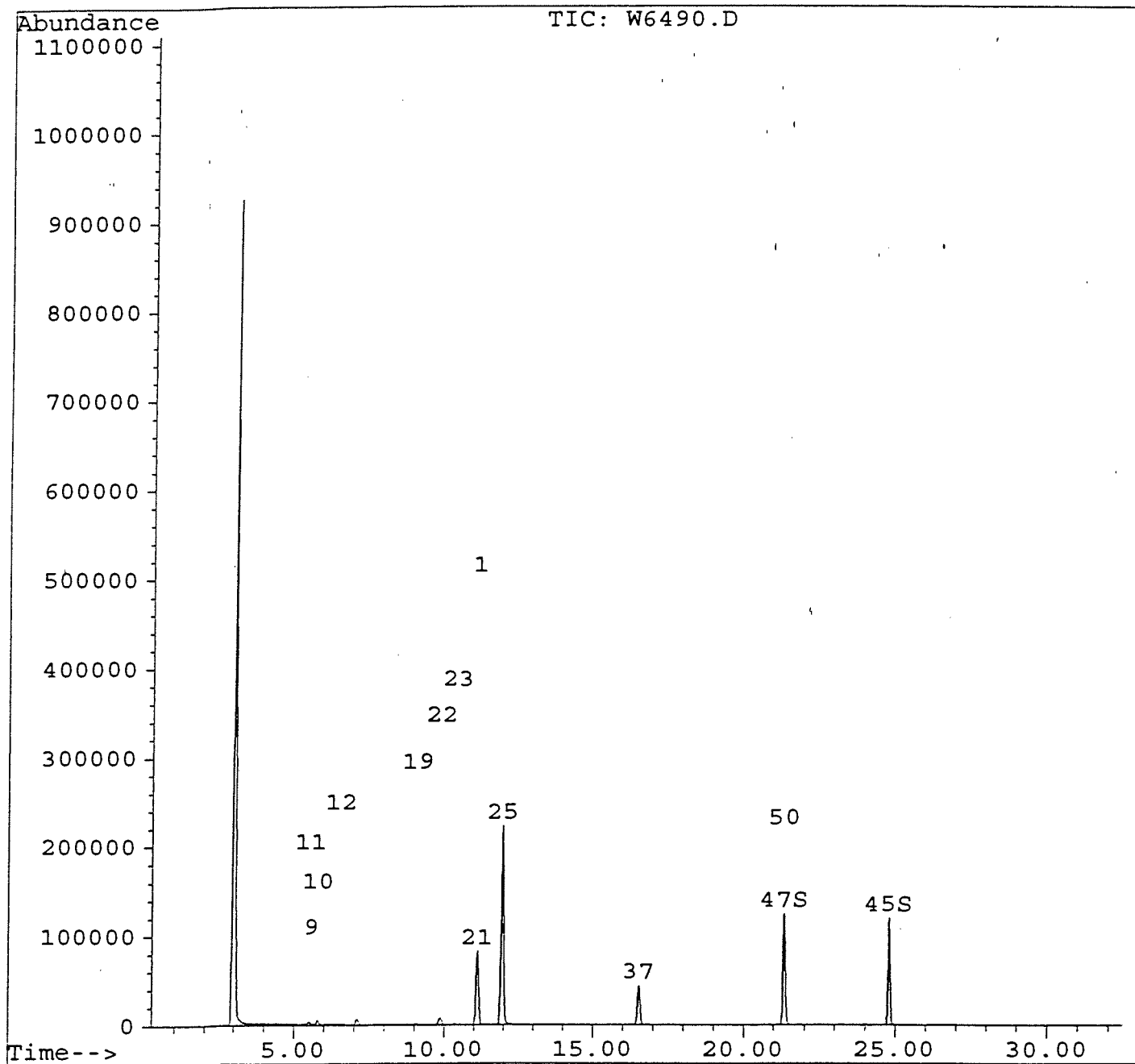
(#) = qualifier out of range (m) = manual integration

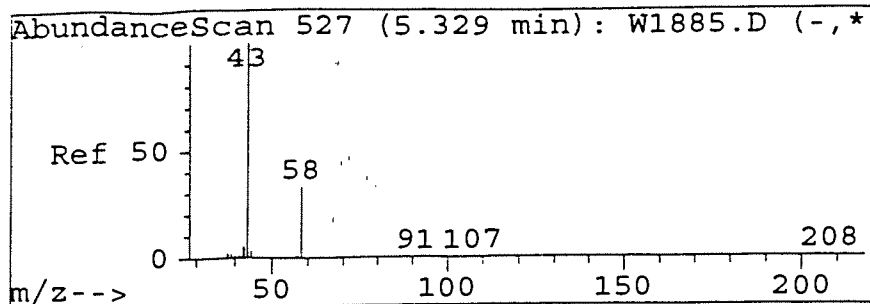
Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6490.D
Acq Time : 17 Jul 96 7:03 pm
Sample : G9607191-4 (4B)/B#96421
Misc : DF=10/2.5ML:25ML/GW-4/ALLIED SIGNAL
Quant Time: Jul 17 19:35 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

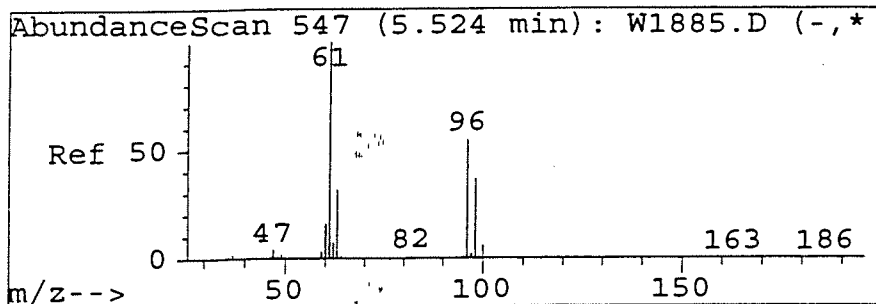
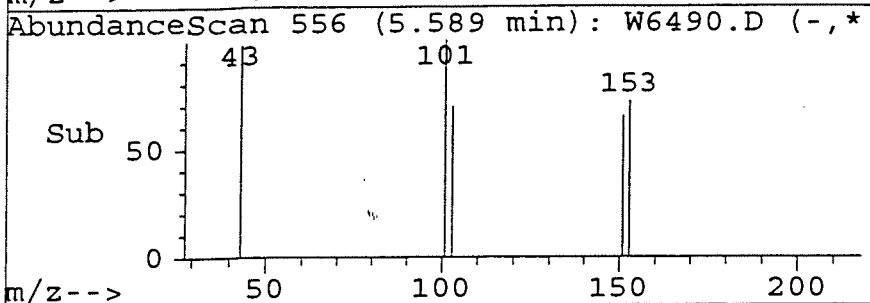
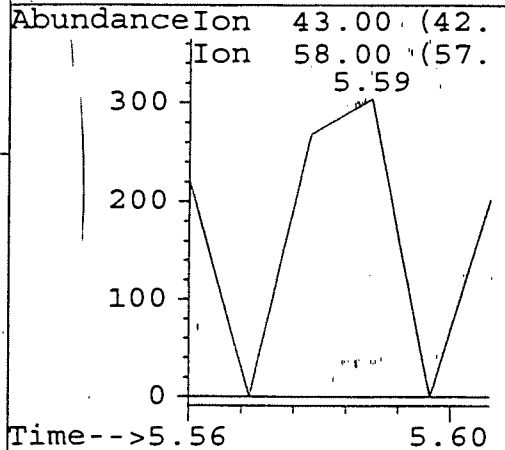
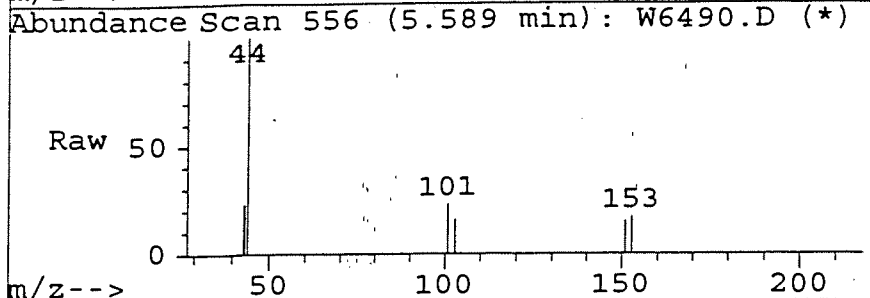
Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration





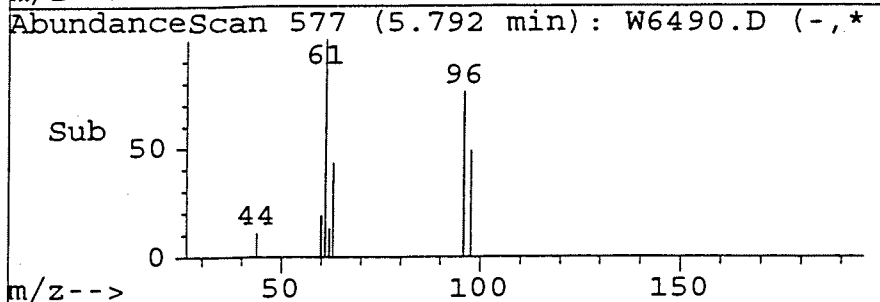
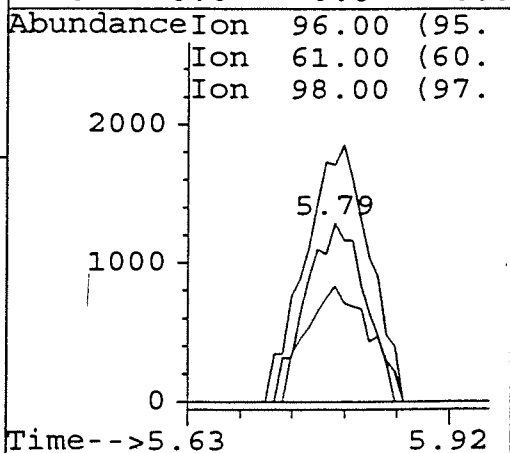
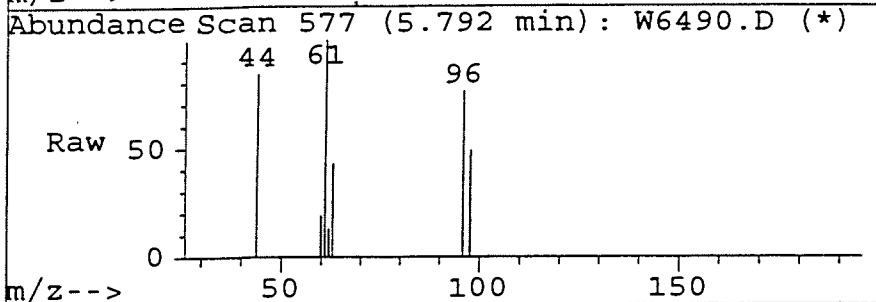
#9
Acetone
Concen: 1.49 ug/l
RT: 5.59 min Scan# 556
Delta R.T. -0.04 min
Lab File: W6490.D
Acq: 17 Jul 96 7:03 pm

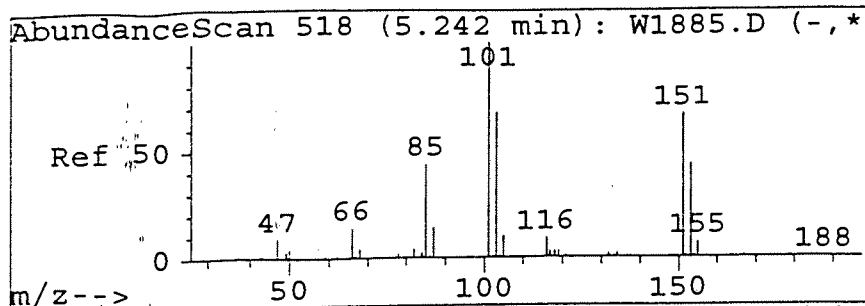
Tgt Ion:43	Resp:	330
Ion	Ratio	Lower Upper
43	100	
58	0.0	0.0 50.0
0	0.0	0.0 0.0
0	0.0	0.0 0.0



#10
1,1-Dichloroethene
Concen: 1.18 ug/l
RT: 5.79 min Scan# 577
Delta R.T. -0.04 min
Lab File: W6490.D
Acq: 17 Jul 96 7:03 pm

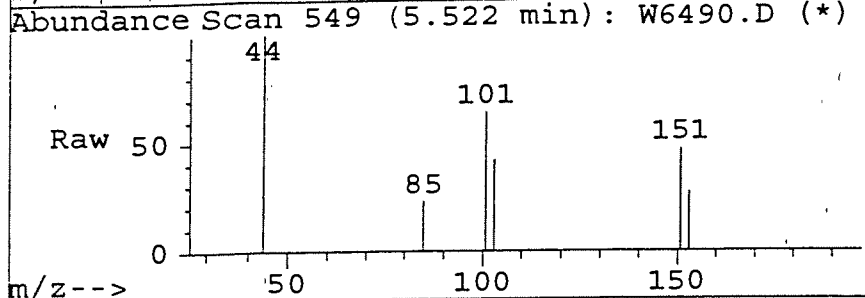
Tgt Ion:96	Resp:	6015
Ion	Ratio	Lower Upper
96	100	
61	153.0	102.5 202.5
98	65.2	12.4 112.4
0	0.0	0.0 0.0



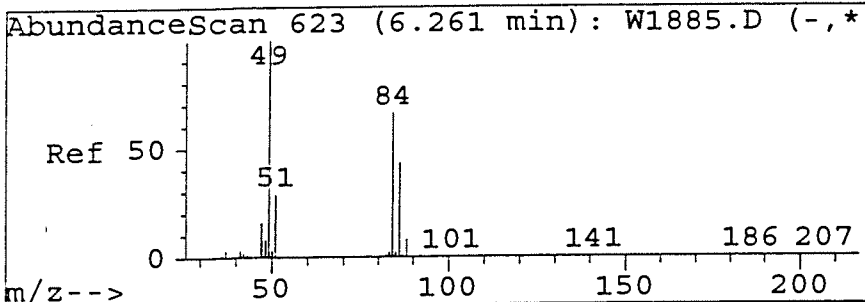
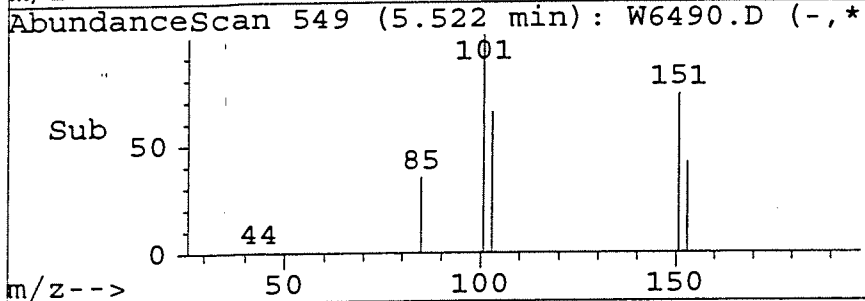
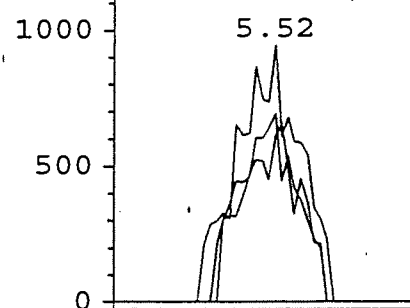


#11
Freon 113
Concen: 0.55 ug/l
RT: 5.52 min Scan# 549
Delta R.T. -0.02 min
Lab File: W6490.D
Acq: 17 Jul 96 7:03 pm

Tgt Ion:	101	Resp:	6093
Ion Ratio	Lower	Upper	
101	100		
151	67.4	45.9	85.9
103	65.1	46.7	86.7
0	0.0	0.0	0.0

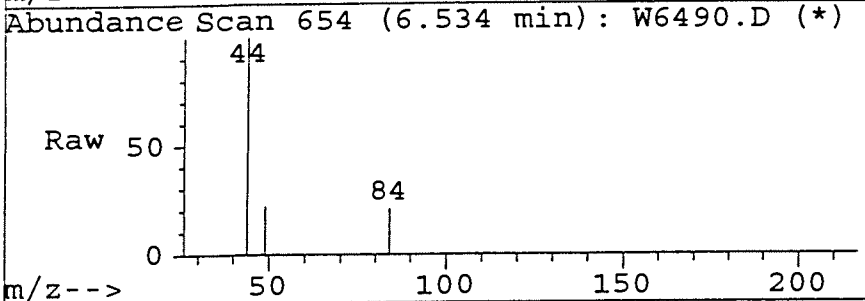


Abundance	Ion	101.00	(100
	Ion	151.00	(150
	Ion	103.00	(102

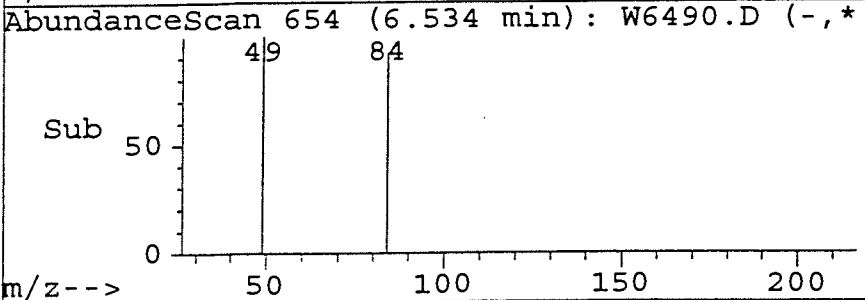
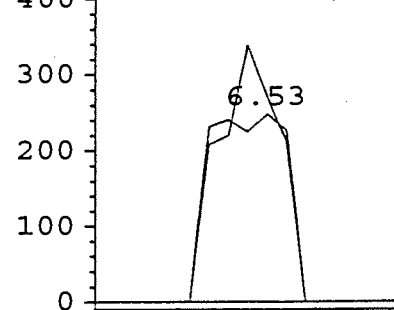


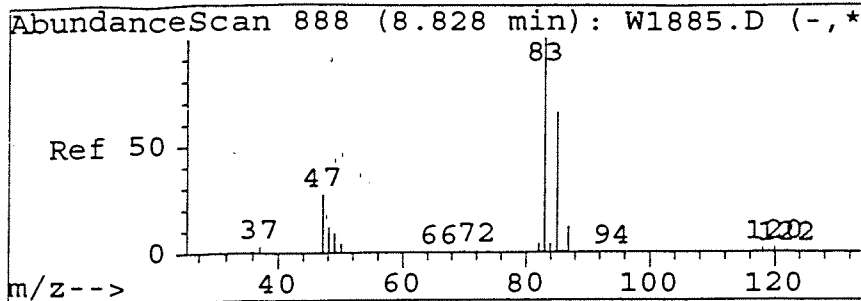
#12
Methylene Chloride
Concen: 0.18 ug/l
RT: 6.53 min Scan# 654
Delta R.T. -0.07 min
Lab File: W6490.D
Acq: 17 Jul 96 7:03 pm

Tgt Ion:	84	Resp:	679
Ion Ratio	Lower	Upper	
84	100		
49	106.5	41.6	221.6
86	0.0	0.0	157.2
0	0.0	0.0	0.0



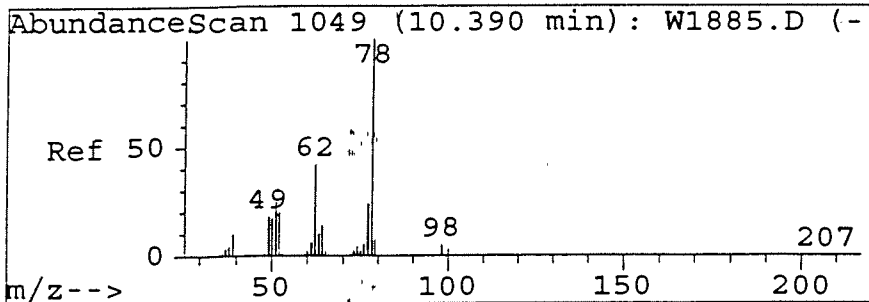
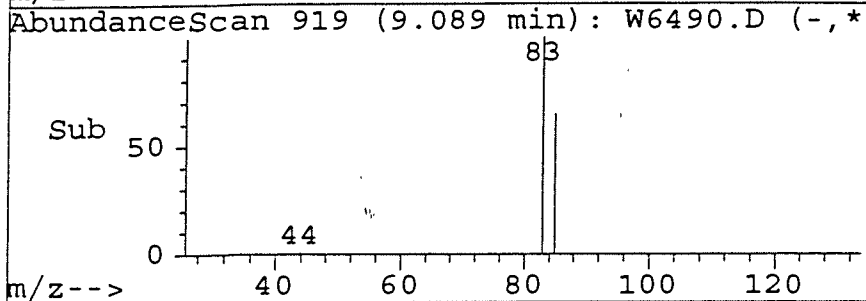
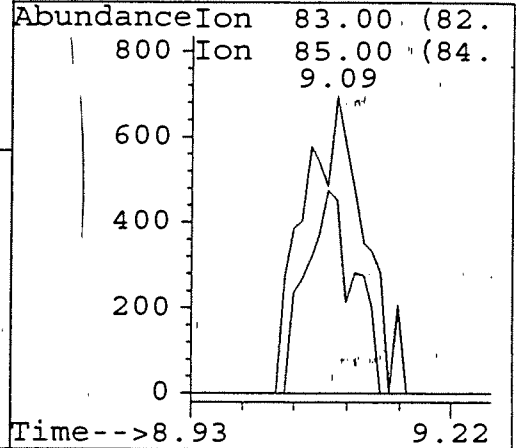
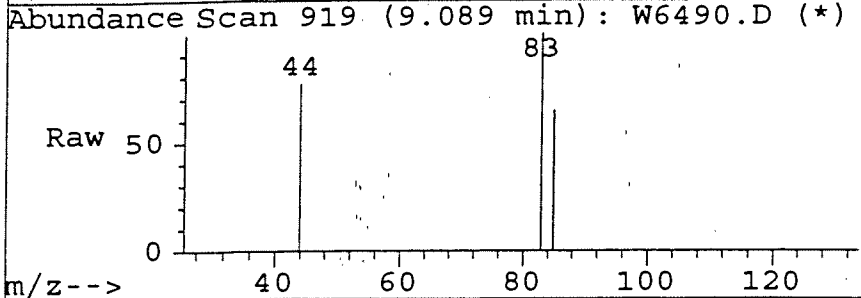
Abundance	Ion	84.00	(83.
	Ion	49.00	(48.
	Ion	86.00	(85.





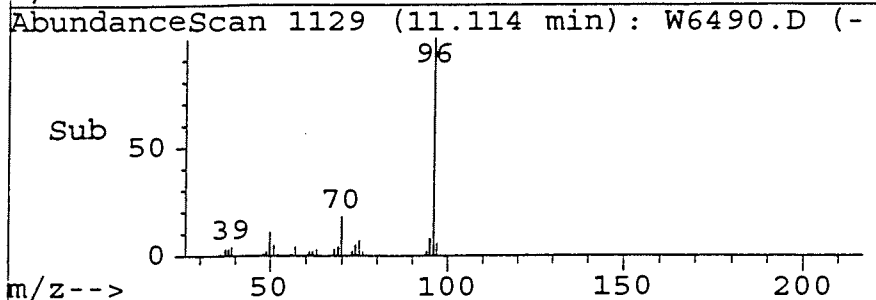
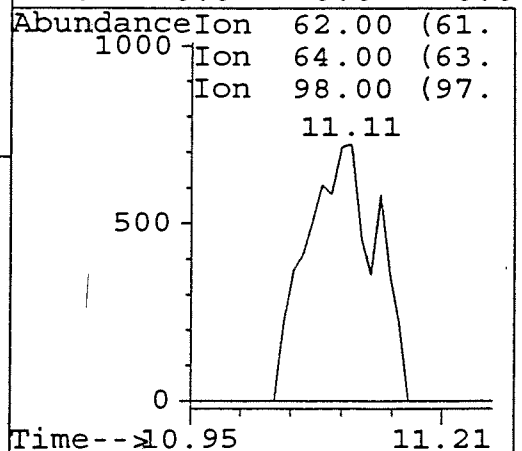
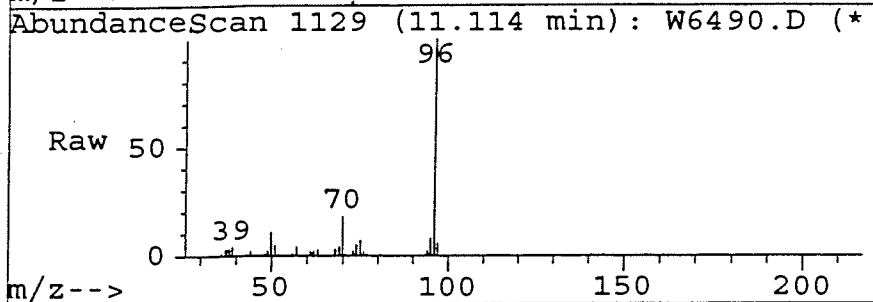
#19
Chloroform
Concen: 0.26 ug/l
RT: 9.09 min Scan# 919
Delta R.T. -0.15 min
Lab File: W6490.D
Acq: 17 Jul 96 7:03 pm

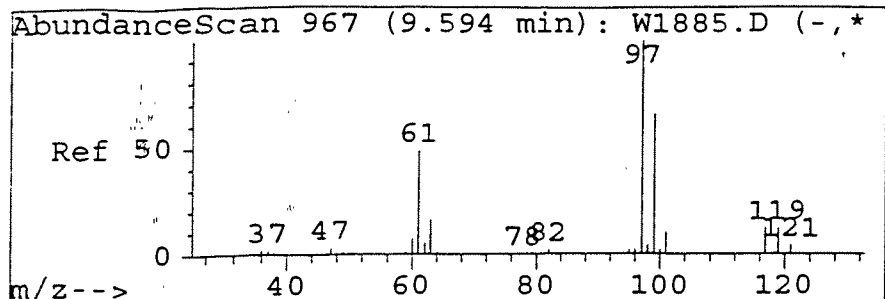
Tgt Ion:83	Resp:	3229
Ion Ratio	Lower	Upper
83 100		
85 55.2	17.3	117.3
0 0.0	0.0	0.0
0 0.0	0.0	0.0



#21
1,2-Dichloroethane
Concen: 0.63 ug/l
RT: 11.11 min Scan# 1129
Delta R.T. 0.27 min
Lab File: W6490.D
Acq: 17 Jul 96 7:03 pm

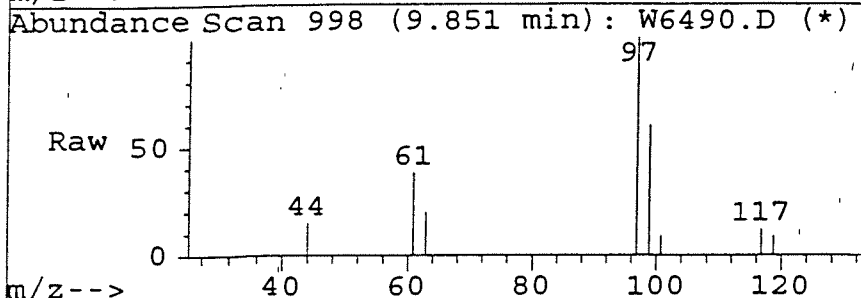
Tgt Ion:62	Resp:	3541
Ion Ratio	Lower	Upper
62 100		
64 0.0	0.0	81.7
98 0.0	0.0	53.9
0 0.0	0.0	0.0



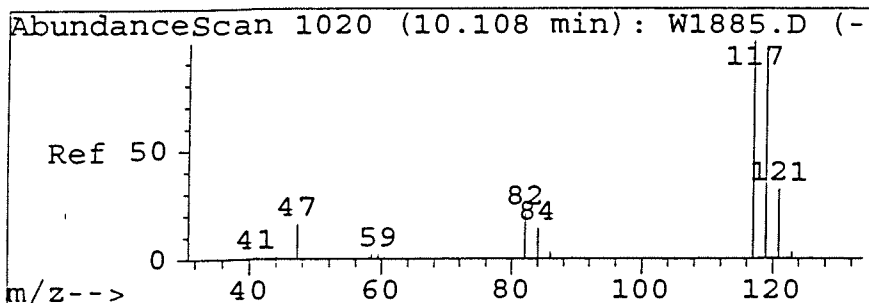
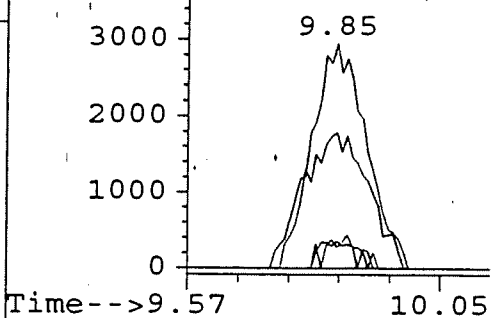
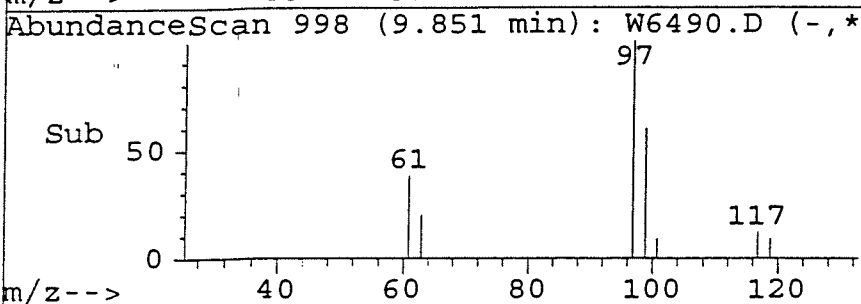


#22
1,1,1-Trichloroethane
Concen: 1.44 ug/l
RT: 9.85 min Scan# 998
Delta R.T. -0.18 min
Lab File: W6490.D
Acq: 17 Jul 96 7:03 pm

Tgt Ion:	97	Resp:	21491
Ion Ratio	Lower	Upper	
97	100		
99	65.9	18.2	118.2
117	6.5	0.0	57.5
119	3.4	0.0	60.9

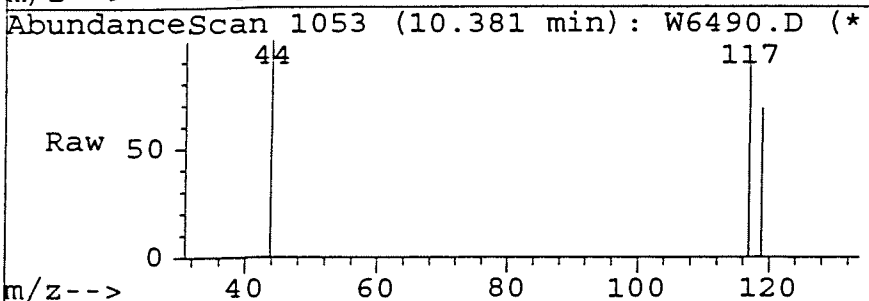


Abundance	Ion	97.00 (96.
	Ion	99.00 (98.
4000	Ion	117.00 (116
	Ion	119.00 (118

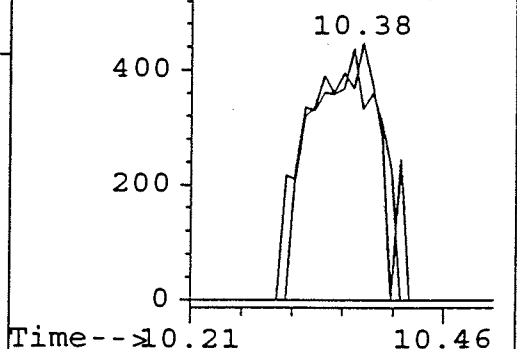
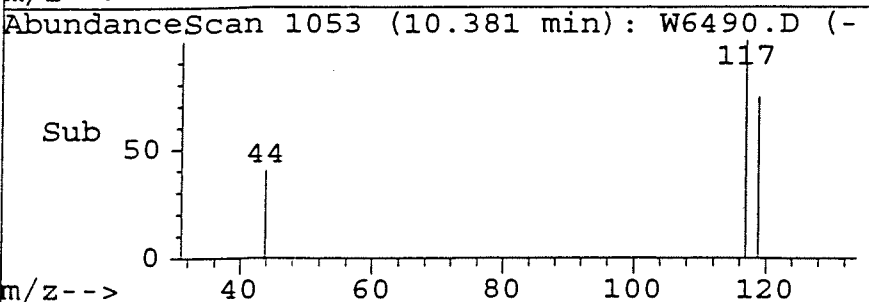


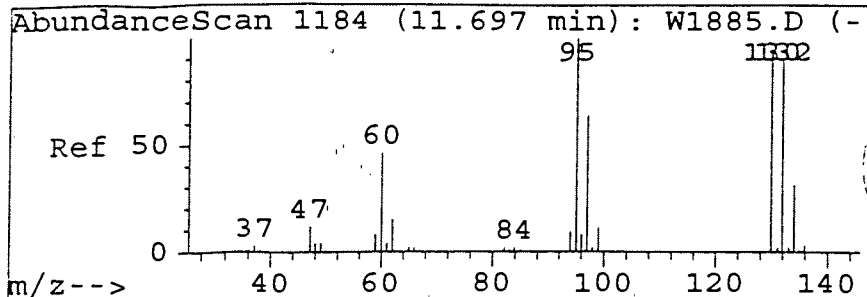
#23
Carbon Tetrachloride
Concen: 0.16 ug/l
RT: 10.38 min Scan# 1053
Delta R.T. -0.17 min
Lab File: W6490.D
Acq: 17 Jul 96 7:03 pm

Tgt Ion:	117	Resp:	2286
Ion Ratio	Lower	Upper	
117	100		
119	92.4	47.3	147.3
121	0.0	0.0	82.4
0	0.0	0.0	0.0



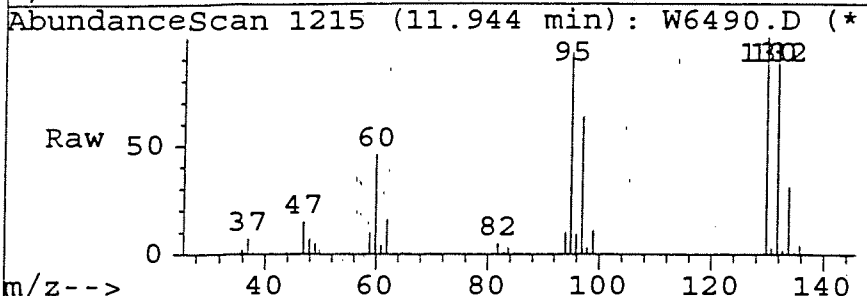
Abundance	Ion	117.00 (116
600	Ion	119.00 (118
	Ion	121.00 (120



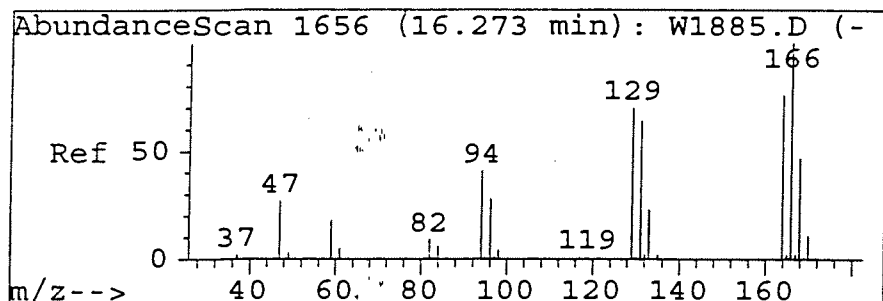
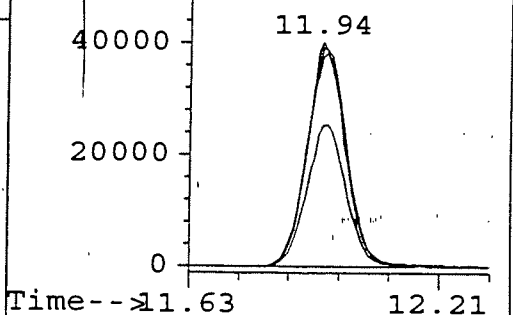
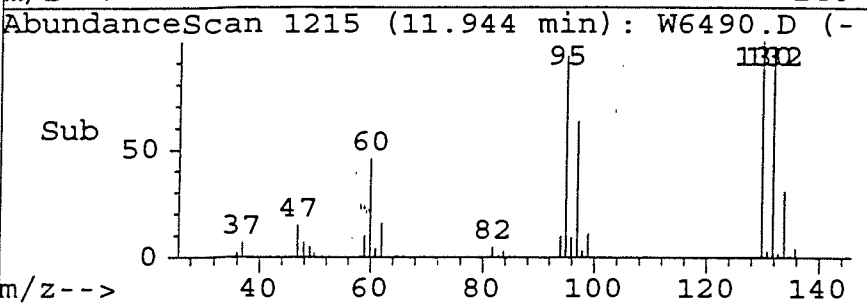


#25
 Trichloroethene
 Concen: 23.49 ug/l
 RT: 11.94 min Scan# 1215
 Delta R.T. -0.21 min
 Lab File: W6490.D
 Acq: 17 Jul 96 7:03 pm

Tgt Ion	Ratio	Lower	Upper
130	100		
132	98.3	46.4	146.4
95	95.7	54.1	154.1
97	63.5	16.2	116.2

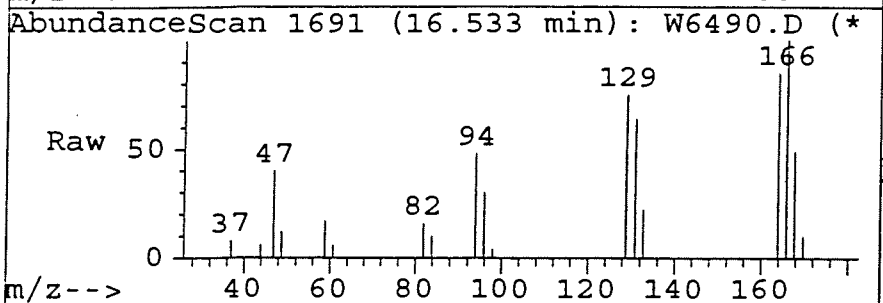


Abundance	Ion	Ratio
60000	130.00	(129
	132.00	(131
	95.00	(94.
	97.00	(96.

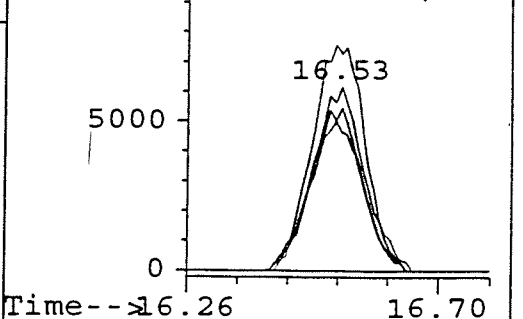
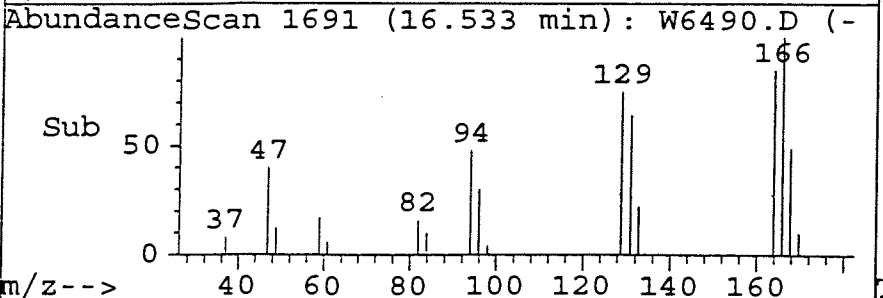


#37
 Tetrachloroethene
 Concen: 3.48 ug/l
 RT: 16.53 min Scan# 1691
 Delta R.T. -0.25 min
 Lab File: W6490.D
 Acq: 17 Jul 96 7:03 pm

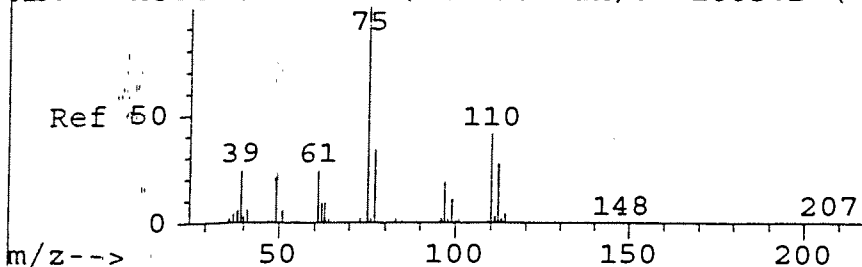
Tgt Ion	Ratio	Lower	Upper
164	100		
166	130.9	81.6	181.6
129	88.6	33.6	133.6
131	84.1	29.4	129.4



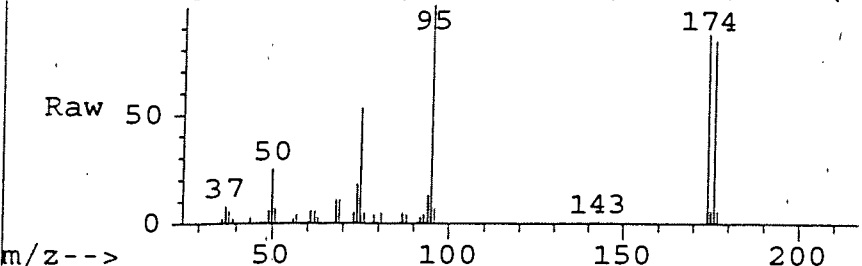
Abundance	Ion	Ratio
10000	164.00	(163
	166.00	(165
	129.00	(128
	131.00	(130



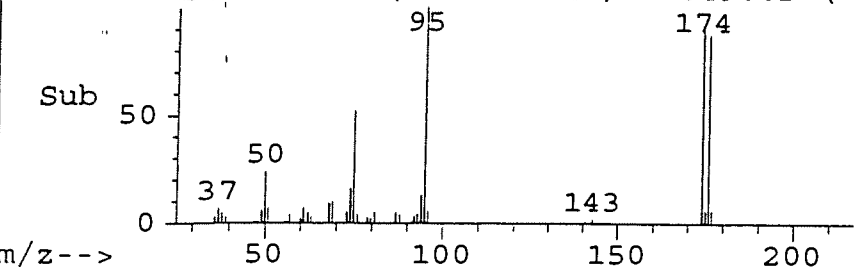
AbundanceScan 2174 (21.295 min): W1885.D (-



AbundanceScan 2189 (21.334 min): W6490.D (*)



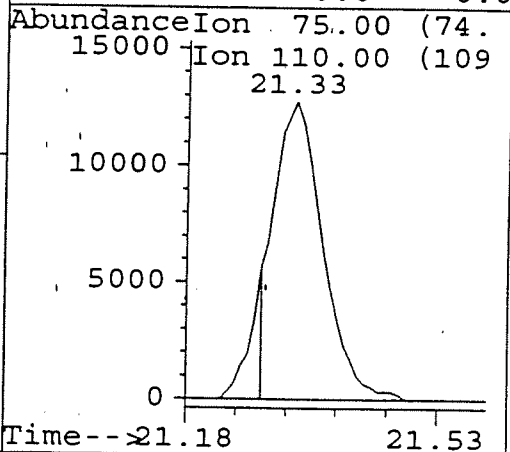
AbundanceScan 2189 (21.334 min): W6490.D (-



#50

1,2,3-Trichloropropane
Concen: 21.22 ug/l
RT: 21.33 min Scan# 2189
Delta R.T. - -0.20 min
Lab File: W6490.D
Acq: 17 Jul 96 7:03 pm

Tgt Ion:	75	Resp:	60697
Ion Ratio	Lower	Upper	
75	100		
110	0.0	0.0	86.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



Library Search Compound Report

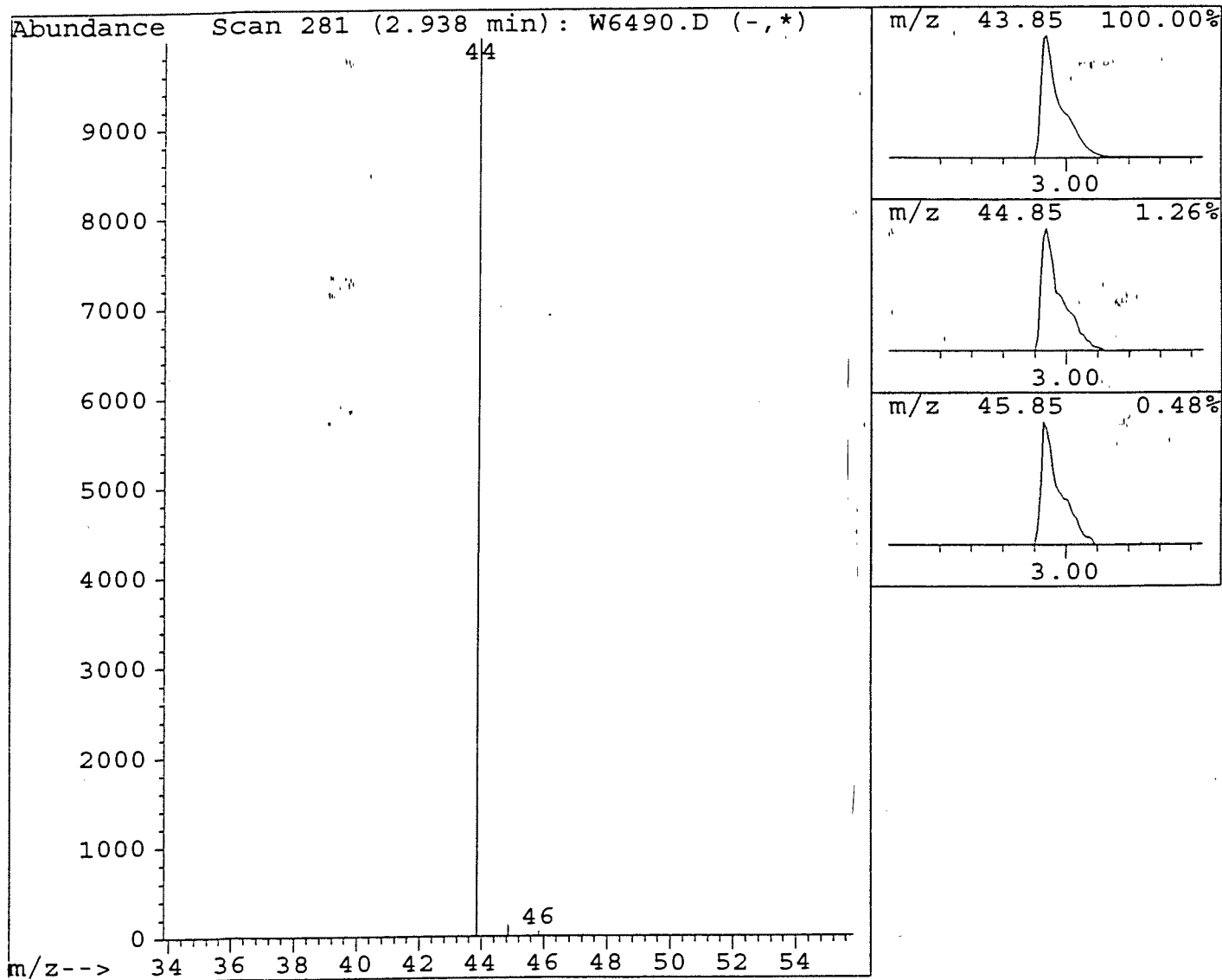
Data File : C:\HPCHEM\1\DATA\JUL17\W6490.D
Acq Time : 17 Jul 96 7:03 pm
Sample : G9607191-4(4B)/B#96421
Misc : DF=10/2.5ML:25ML/GW-4/ALLIED SIGNAL

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.94	77.06 ug/l	4026178	Fluorobenzene	11.11

Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L		0	000000-00-0	0



002115

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6492.D
 Acq Time : 17 Jul 96 8:21 pm
 Sample : G9607191-1(4B)/B#96421 *96422*
 Misc : DF=5/5ML:25ML/GW-4/ALLIED SIGNAL/GW-1
 Quant Time: Jul 17 20:53 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.11	96	277264	10.00	ug/l	0.00
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.79	150	155516	9.75	ug/l	97.4
47) Bromofluorobenzene	21.33	95	146961	9.77	ug/l	97.6
Target Compounds						Qvalue
9) Acetone	5.60	43	922	3.90	ug/l #	100
10) 1,1-Dichloroethene	5.79	96	8199	1.51	ug/l	96
11) Freon 113	5.48	101	2485	0.21	ug/l #	41
12) Methylene Chloride	6.51	84	1992	0.51	ug/l	81
14) 1,1-Dichloroethane	7.74	63	1105	0.14	ug/l #	43
17) 1,2-Dichloroethene (cis-)	8.79	96	3719	0.58	ug/l ✓	89
19) Chloroform	9.08	83	2893	0.22	ug/l	91
21) 1,2-Dichloroethane	11.09	62	3821	0.64	ug/l #	48
22) 1,1,1-Trichloroethane	9.85	97	13242	0.84	ug/l ✓ #	30
23) Carbon Tetrachloride	10.35	117	4054	0.27	ug/l #	77
25) Trichloroethene	11.95	130	194391	17.11	ug/l <i>96</i>	95
35) Toluene	14.86	92	14001	0.88	ug/l ✓	95
37) Tetrachloroethene	16.51	164	7300	0.62	ug/l ✓	98
50) 1,2,3-Trichloropropane	21.32	75	64667	21.24	ug/l #	39

Report TCE ONLY = 17 x 5 = 86

BATCH # 96422
 DATE 07/17/96
 ANALYST

REVIEWED & APPROVED
 BY _____ DATE _____

002116

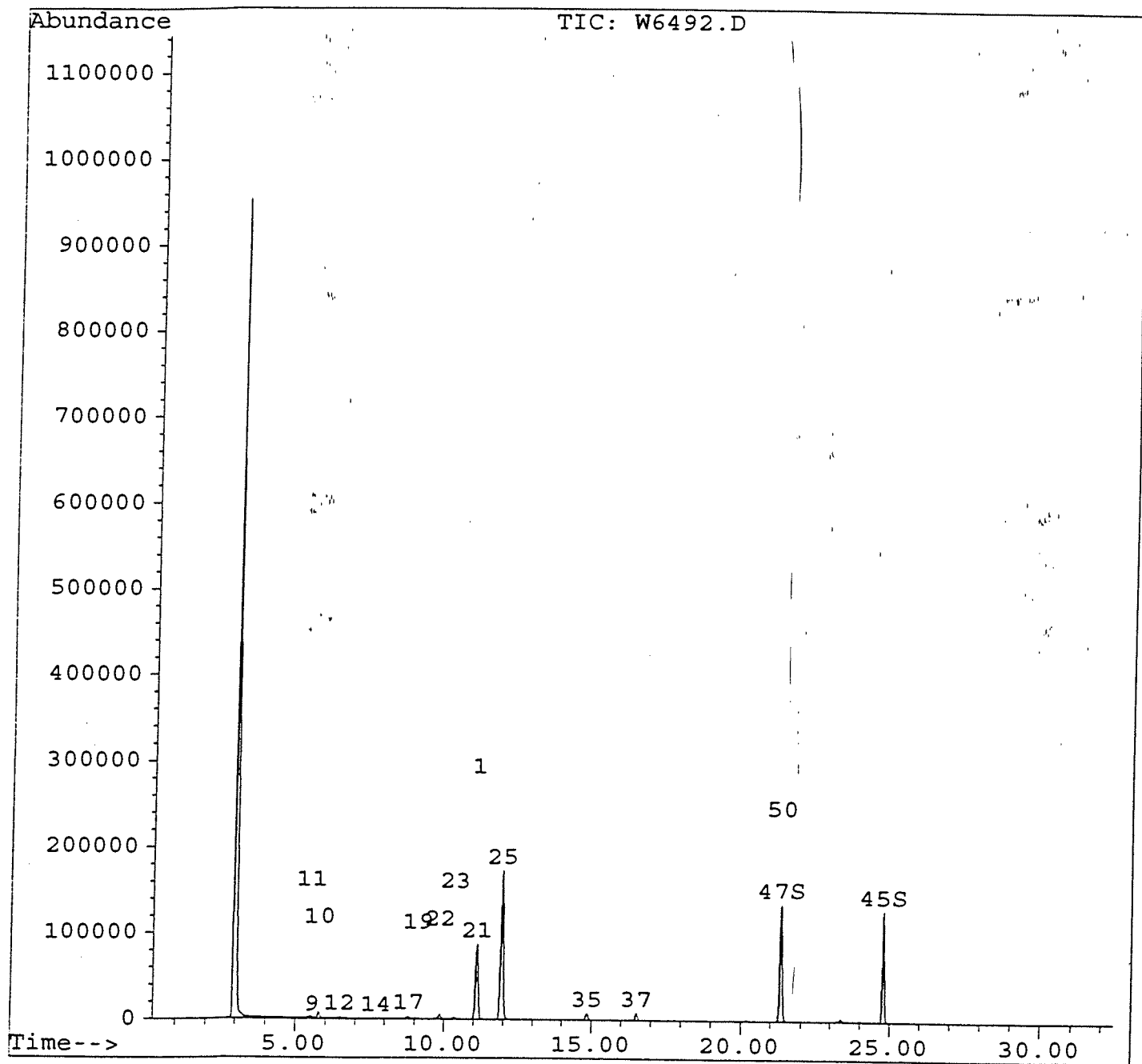
(#) = qualifier out of range (m) = manual integration

Quantitation Report

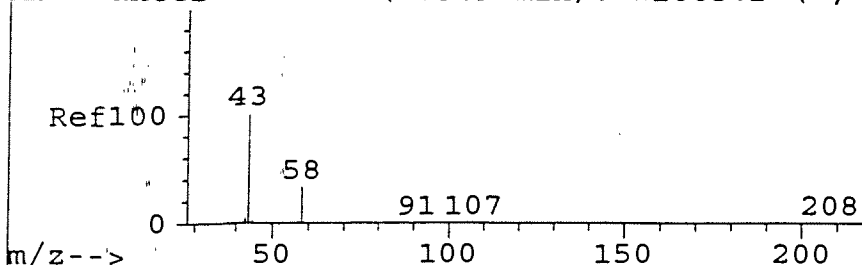
Data File : C:\HPCHEM\1\DATA\JUL17\W6492.D
 Acq Time : 17 Jul 96 8:21 pm
 Sample : G9607191-1(4B)/B#96421
 Misc : DF=5/5ML:25ML/GW-4/ALLIED SIGNAL
 Quant Time: Jul 17 20:53 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

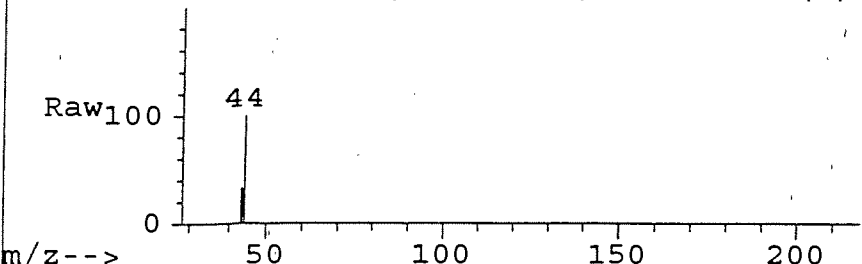
Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



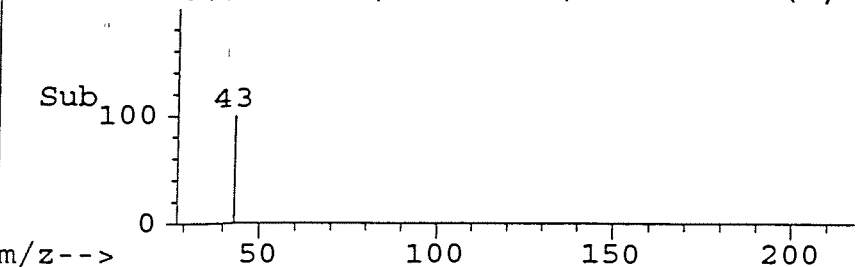
AbundanceScan 527 (5.329 min): W1885.D (-,*



Abundance Scan 557 (5.599 min): W6492.D (*)



AbundanceScan 557 (5.599 min): W6492.D (-,*



#9

Acetone

Concen: 3.90 ug/l

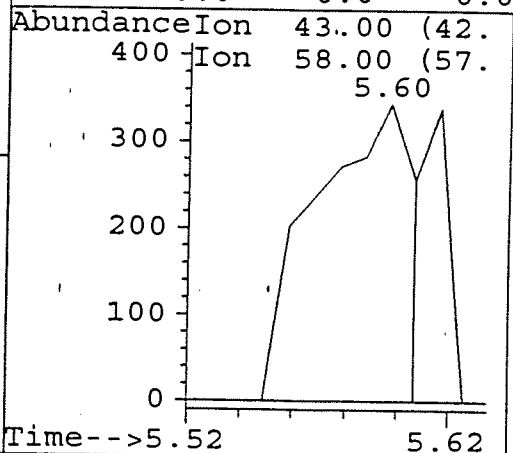
RT: 5.60 min Scan# 557

Delta R.T. -0.03 min

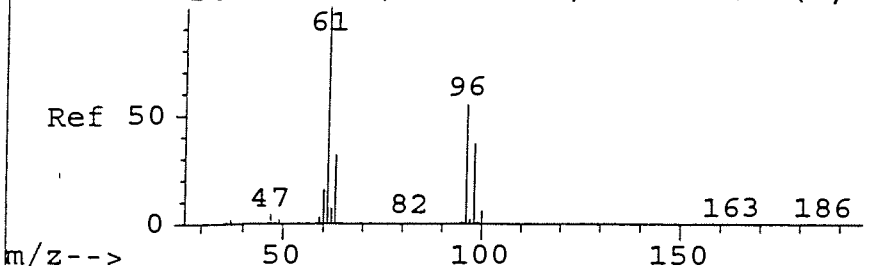
Lab File: W6492.D

Acq: 17 Jul 96 8:21 pm

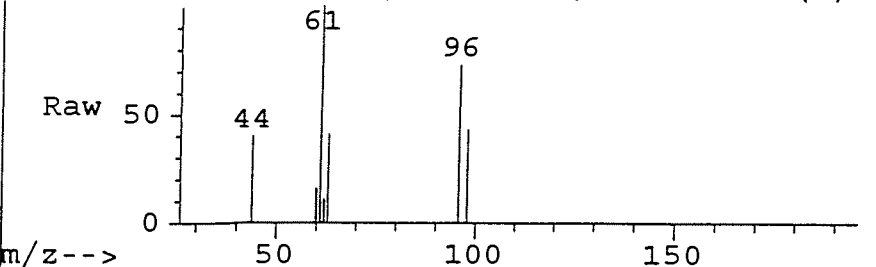
Tgt Ion:	43	Resp:	922
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	50.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



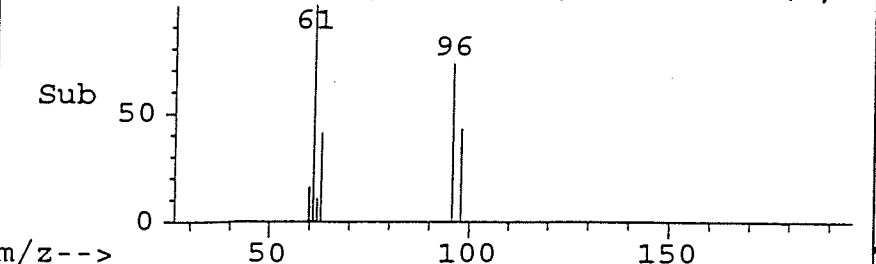
AbundanceScan 547 (5.524 min): W1885.D (-,*



Abundance Scan 577 (5.792 min): W6492.D (*)



AbundanceScan 577 (5.792 min): W6492.D (-,*



#10

1,1-Dichloroethene

Concen: 1.51 ug/l

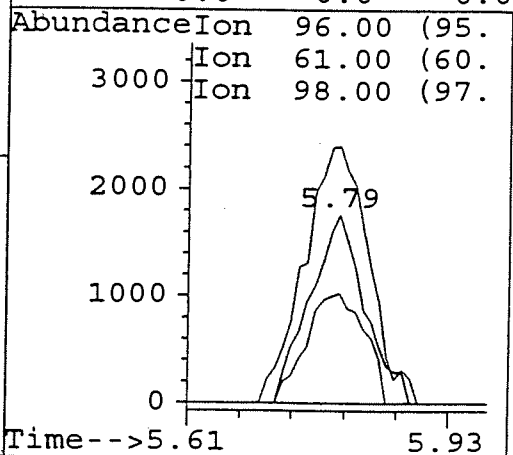
RT: 5.79 min Scan# 577

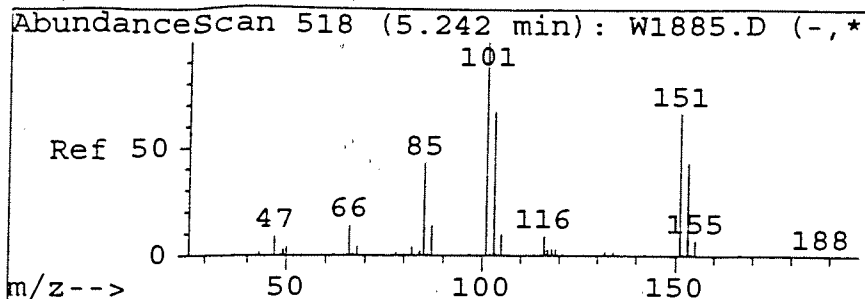
Delta R.T. -0.04 min

Lab File: W6492.D

Acq: 17 Jul 96 8:21 pm

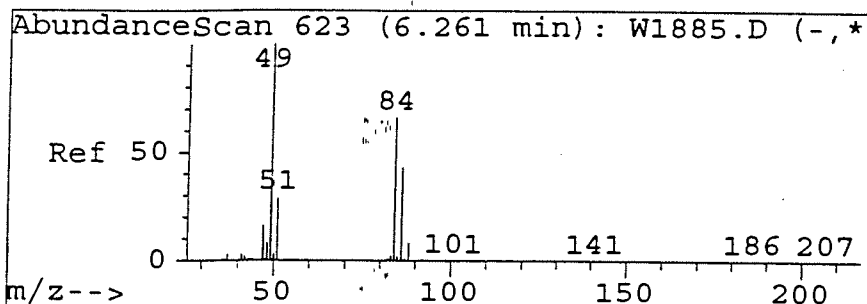
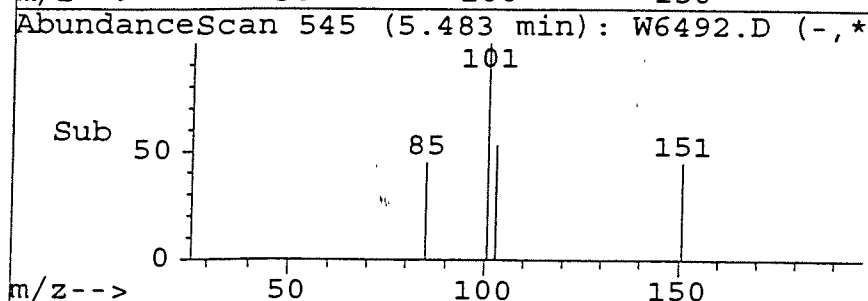
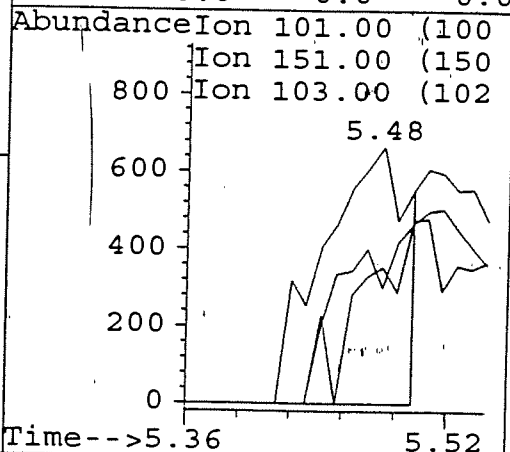
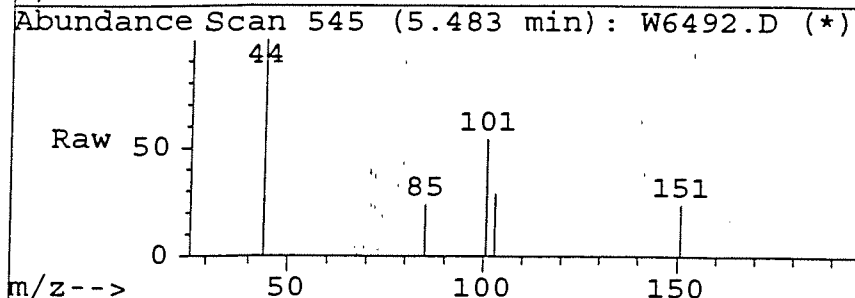
Tgt Ion:	96	Resp:	8199
Ion	Ratio	Lower	Upper
96	100		
61	159.3	102.5	202.5
98	61.7	12.4	112.4
0	0.0	0.0	0.0





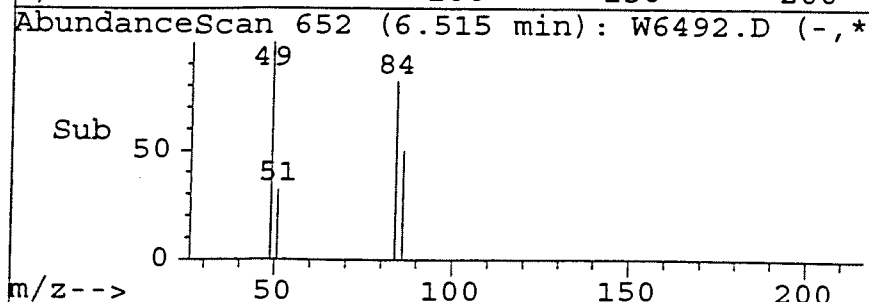
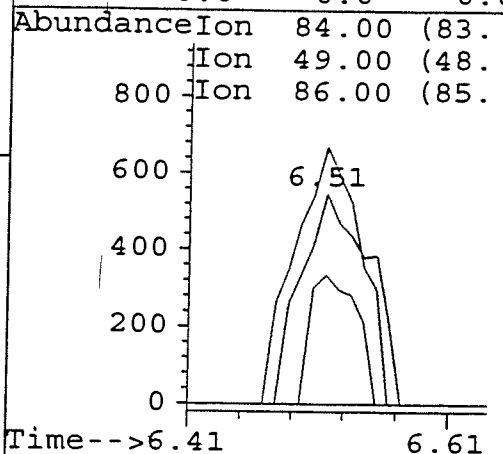
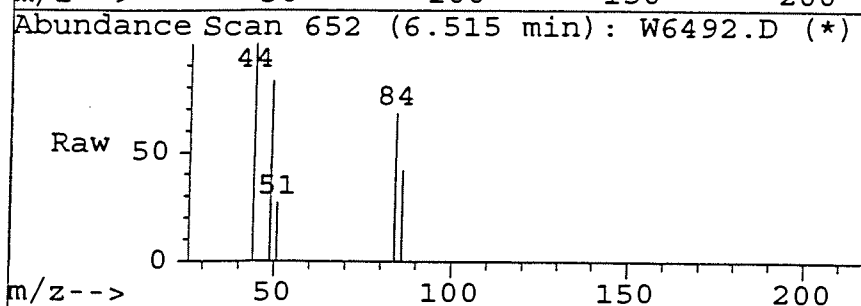
#11
Freon 113
Concen: 0.21 ug/l
RT: 5.48 min Scan# 545
Delta R.T. - -0.06 min
Lab File: W6492.D
Acq: 17 Jul 96 8:21 pm

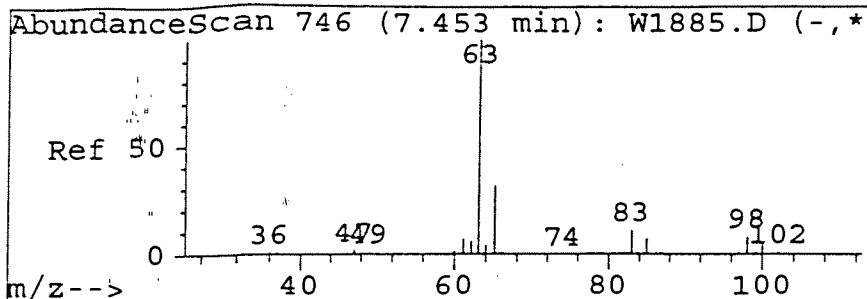
Tgt Ion:	101	Resp:	2485
Ion	Ratio	Lower	Upper
101	100		
151	121.0	45.9	85.9#
103	106.4	46.7	86.7#
0	0.0	0.0	0.0



#12
Methylene Chloride
Concen: 0.51 ug/l
RT: 6.51 min Scan# 652
Delta R.T. -0.09 min
Lab File: W6492.D
Acq: 17 Jul 96 8:21 pm

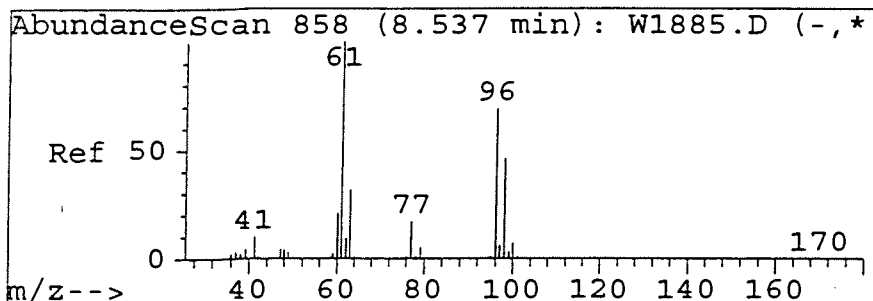
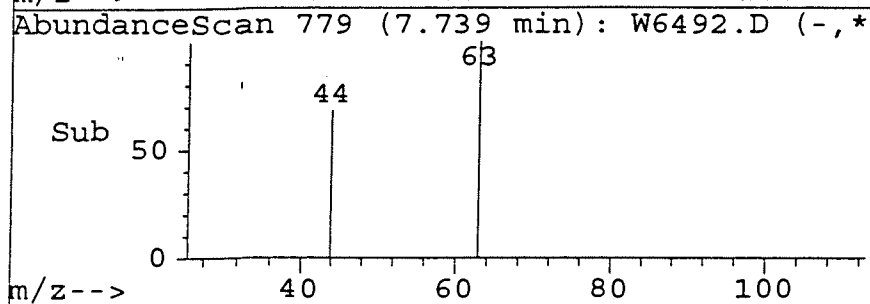
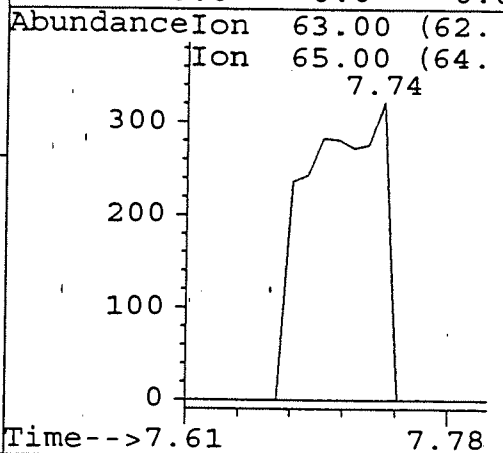
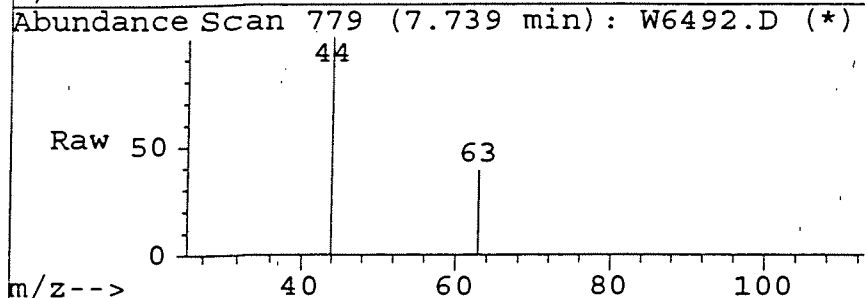
Tgt Ion:	84	Resp:	1992
Ion	Ratio	Lower	Upper
84	100		
49	118.0	41.6	221.6
86	41.5	0.0	157.2
0	0.0	0.0	0.0





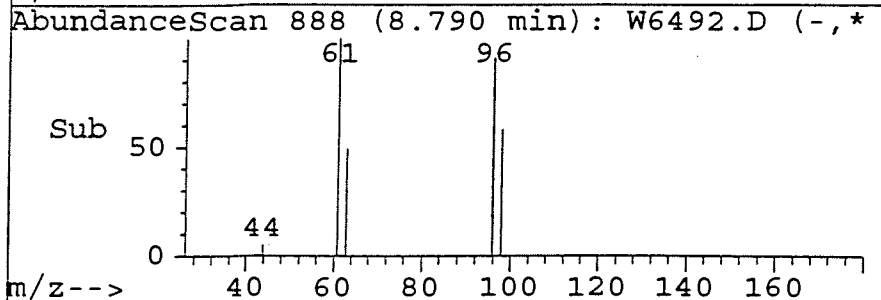
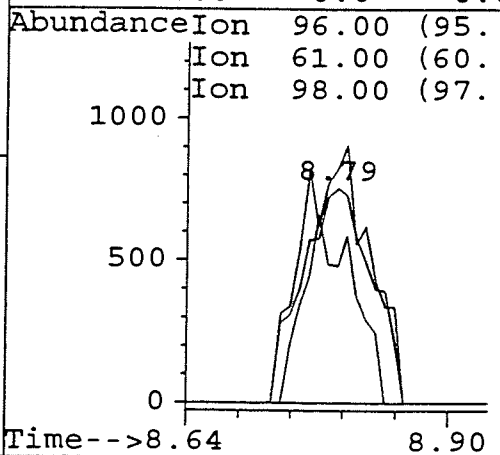
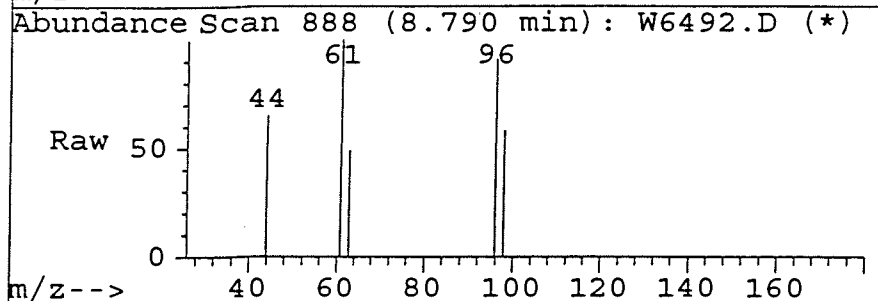
#14
1,1-Dichloroethane
Concen: 0.14 ug/l
RT: 7.74 min Scan# 779
Delta R.T. -0.11 min
Lab File: W6492.D
Acq: 17 Jul 96 8:21 pm

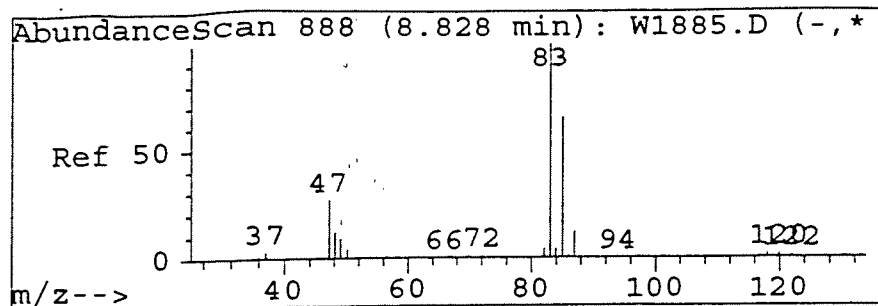
Tgt Ion:	63	Resp:	1105
Ion	Ratio	Lower	Upper
63	100		
65	0.0	0.0	81.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#17
1,2-Dichloroethene (cis-)
Concen: 0.58 ug/l
RT: 8.79 min Scan# 888
Delta R.T. -0.16 min
Lab File: W6492.D
Acq: 17 Jul 96 8:21 pm

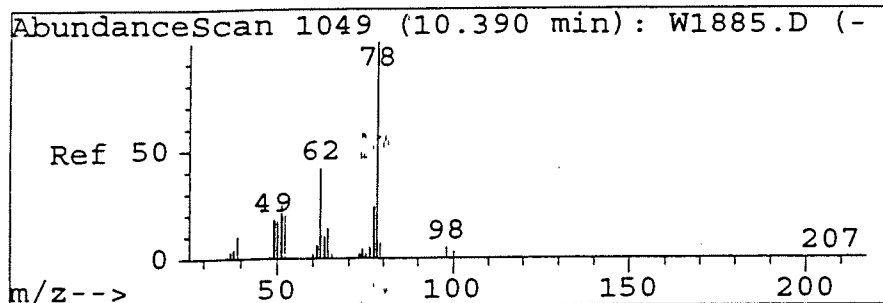
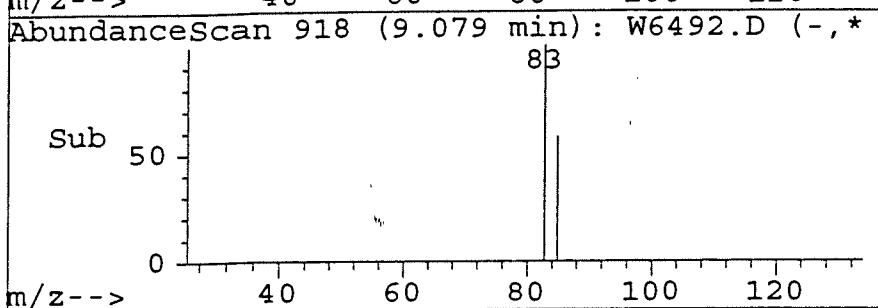
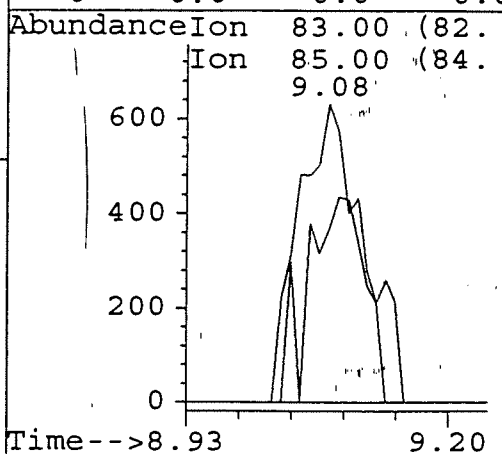
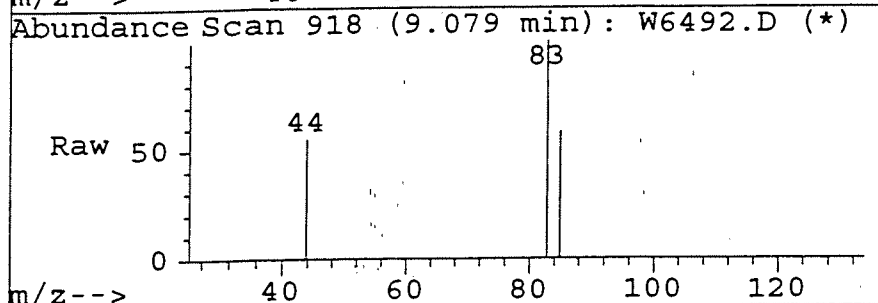
Tgt Ion:	96	Resp:	3719
Ion	Ratio	Lower	Upper
96	100		
61	115.3	84.0	184.0
98	64.0	14.7	114.7
0	0.0	0.0	0.0





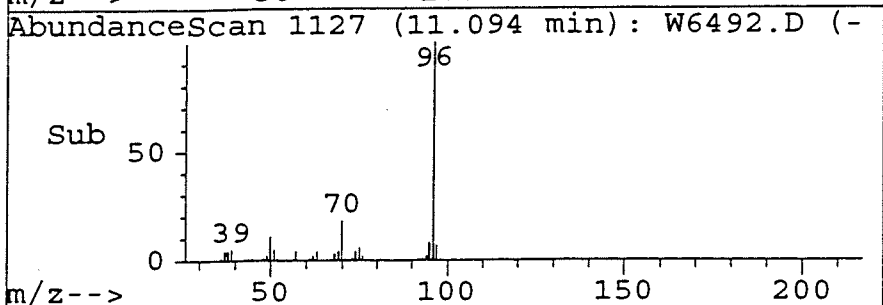
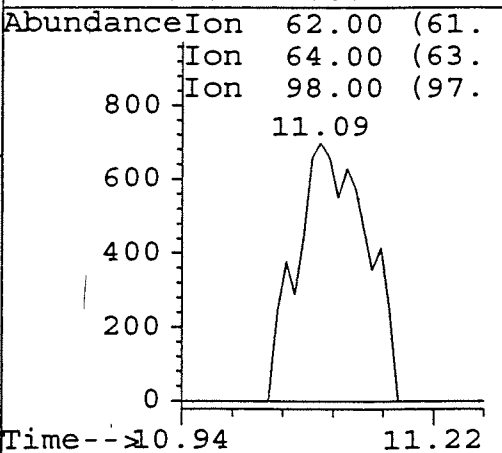
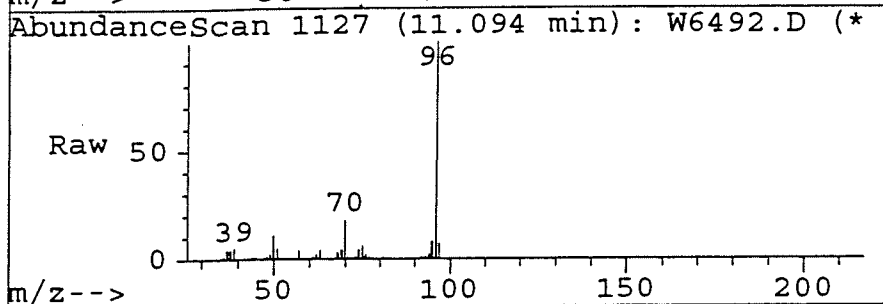
#19
Chloroform
Concen: 0.22 ug/l
RT: 9.08 min Scan# 918
Delta R.T. -0.16 min
Lab File: W6492.D
Acq: 17 Jul 96 8:21 pm

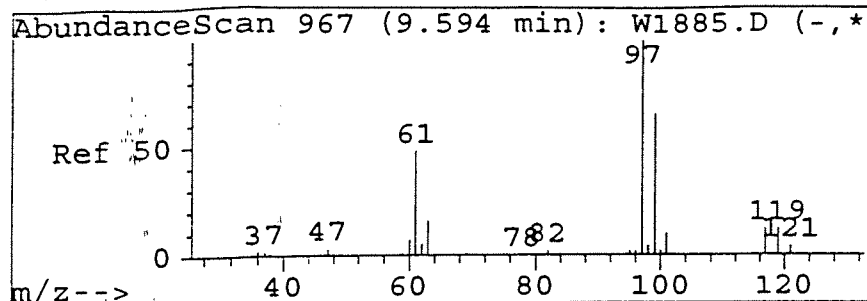
Tgt Ion:83	Resp:	2893
Ion Ratio	Lower	Upper
83 100		
85 60.3	17.3	117.3
0 0.0	0.0	0.0
0 0.0	0.0	0.0



#21
1,2-Dichloroethane
Concen: 0.64 ug/l
RT: 11.09 min Scan# 1127
Delta R.T. 0.25 min
Lab File: W6492.D
Acq: 17 Jul 96 8:21 pm

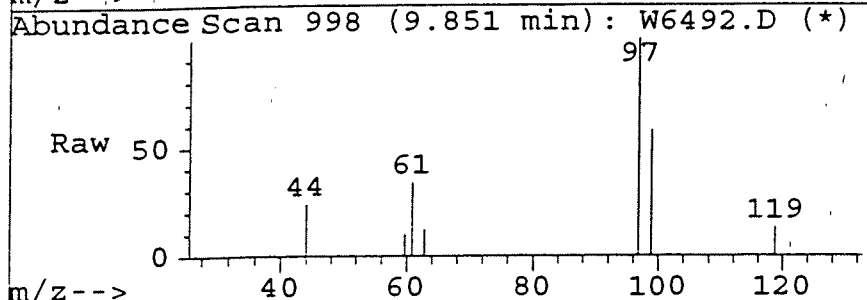
Tgt Ion:62	Resp:	3821
Ion Ratio	Lower	Upper
62 100		
64 0.0	0.0	81.7
98 0.0	0.0	53.9
0 0.0	0.0	0.0



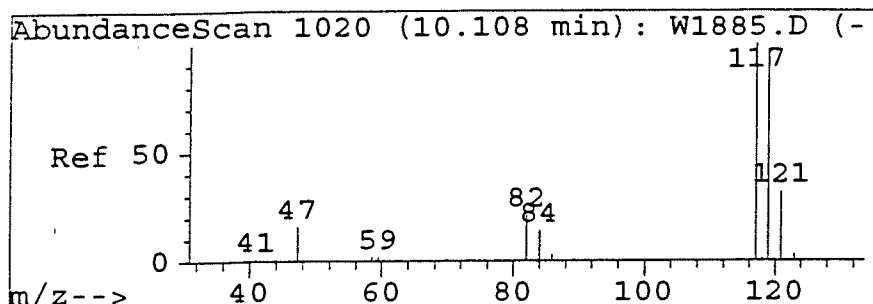
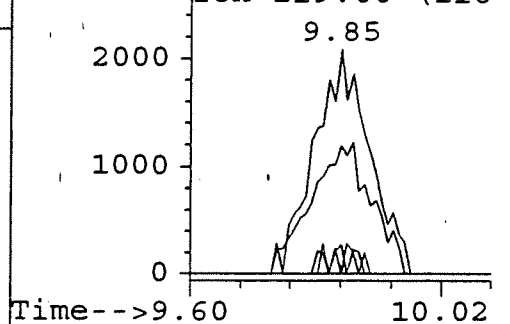
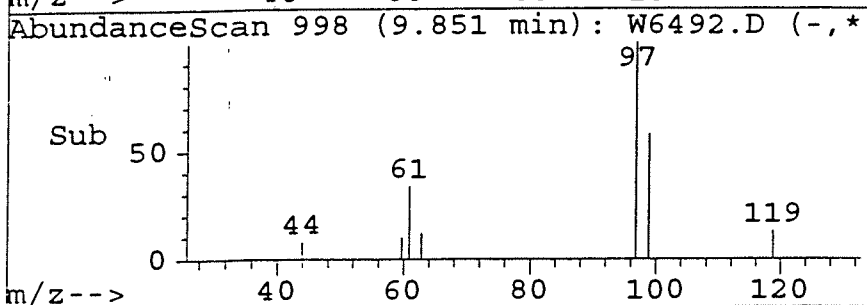


#22
1,1,1-Trichloroethane
Concen: 0.84 ug/l
RT: 9.85 min Scan# 998
Delta R.T. - -0.18 min
Lab File: W6492.D
Acq: 17 Jul 96 8:21 pm

Tgt Ion:	97	Resp:	13242
Ion	Ratio	Lower	Upper
97	100		
99	0.0	18.2	118.2#
117	3.0	0.0	57.5
119	2.1	0.0	60.9

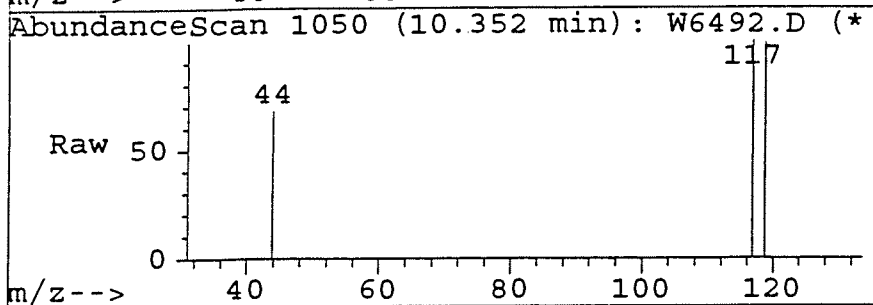


Abundance	Ion	97.00	(96.
	Ion	99.00	(98.
	Ion	117.00	(116
	Ion	119.00	(118

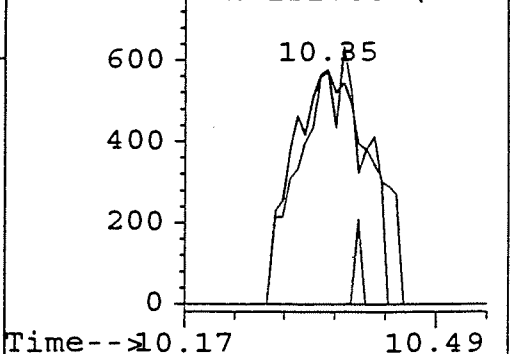
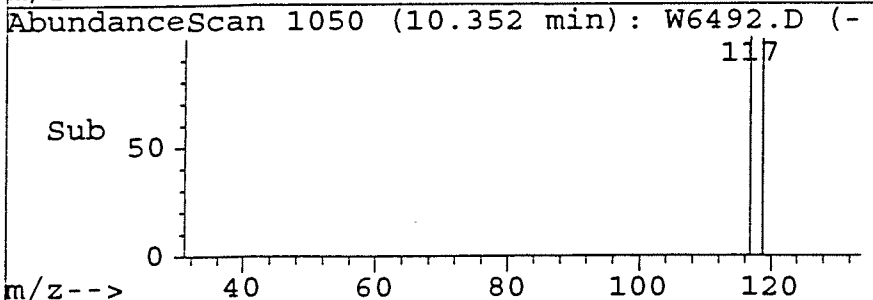


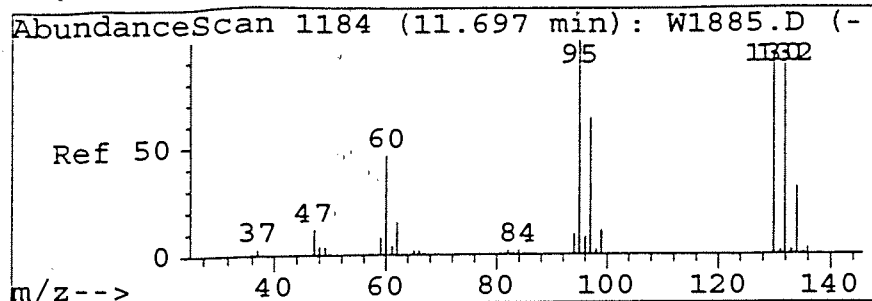
#23
Carbon Tetrachloride
Concen: 0.27 ug/l
RT: 10.35 min Scan# 1050
Delta R.T. - -0.20 min
Lab File: W6492.D
Acq: 17 Jul 96 8:21 pm

Tgt Ion:	117	Resp:	4054
Ion	Ratio	Lower	Upper
117	100		
119	85.4	47.3	147.3
121	0.0	0.0	82.4
0	0.0	0.0	0.0



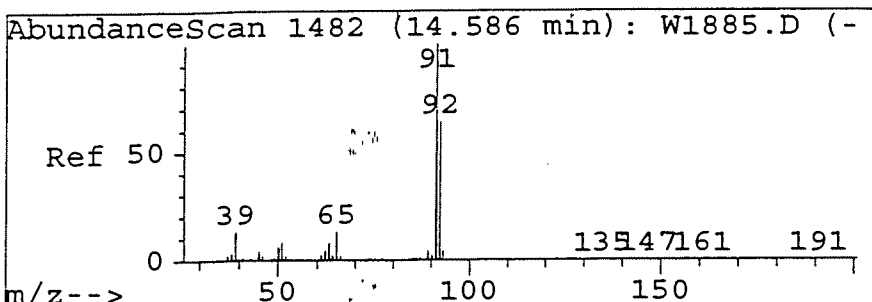
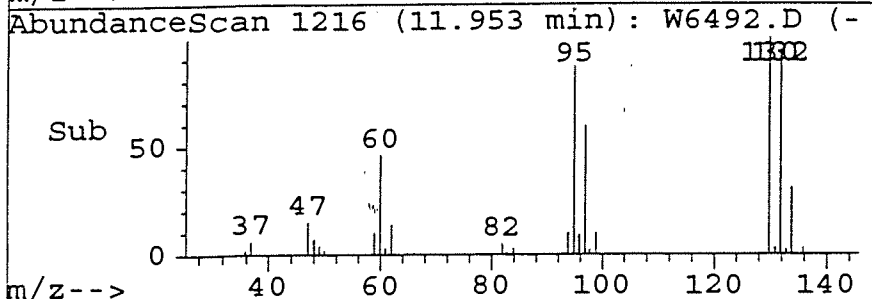
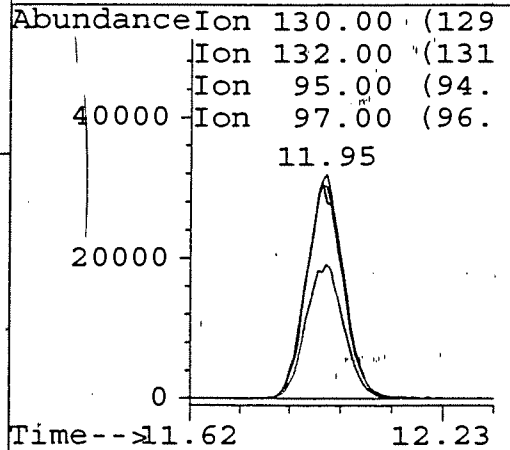
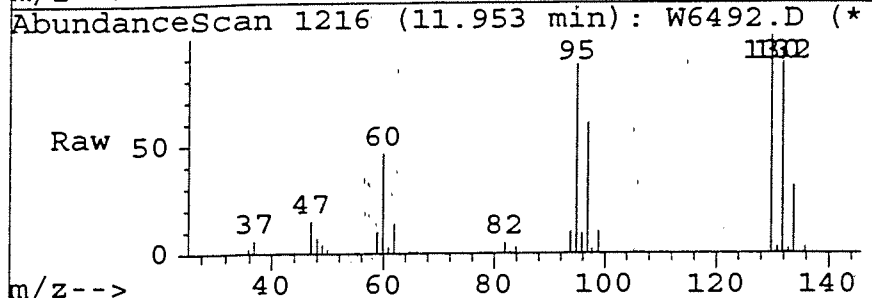
Abundance	Ion	117.00	(116
	Ion	119.00	(118
	Ion	121.00	(120





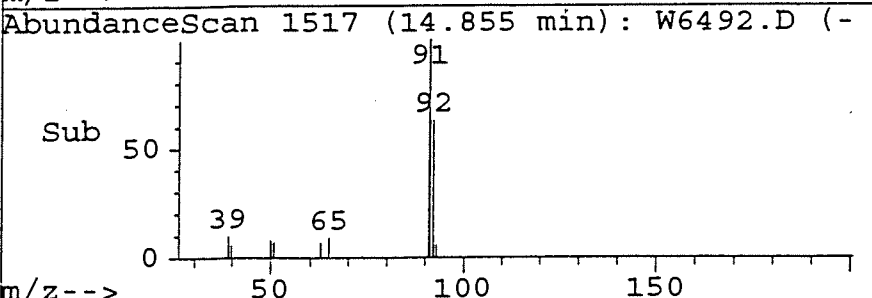
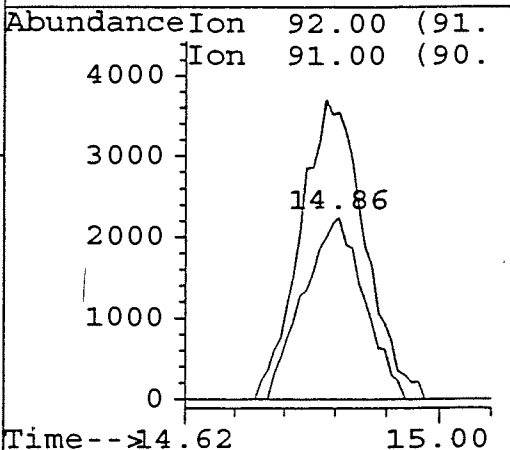
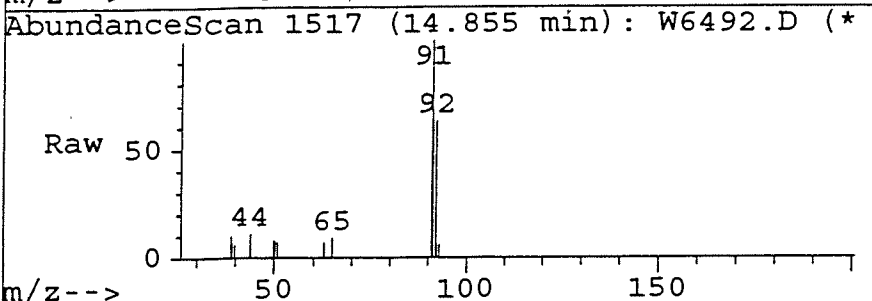
#25
 Trichloroethene
 Concén: 17.11 ug/l
 RT: 11.95 min Scan# 1216
 Delta R.T. -0.20 min
 Lab File: W6492.D
 Acq: 17 Jul 96 8:21 pm

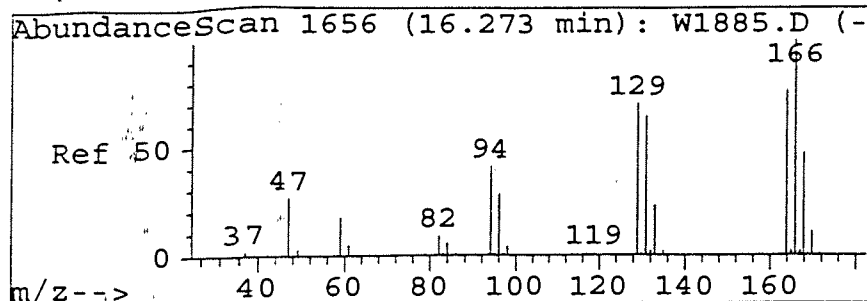
Tgt Ion:130	Resp:	194391
Ion Ratio	Lower	Upper
130	100	
132	98.0	46.4 146.4
95	95.1	54.1 154.1
97	61.9	16.2 116.2



#35
 Toluene
 Concen: 0.88 ug/l
 RT: 14.86 min Scan# 1517
 Delta R.T. -0.27 min
 Lab File: W6492.D
 Acq: 17 Jul 96 8:21 pm

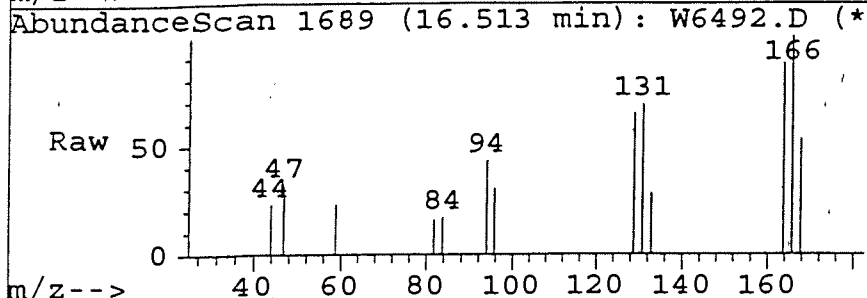
Tgt Ion:92	Resp:	14001
Ion Ratio	Lower	Upper
92	100	
91	174.8	117.6 217.6
0	0.0	0.0 0.0
0	0.0	0.0 0.0



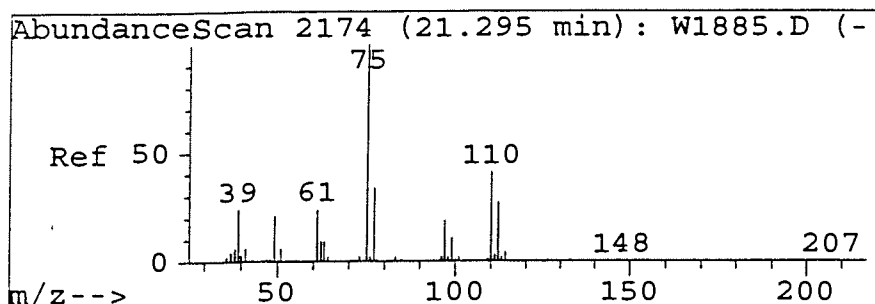
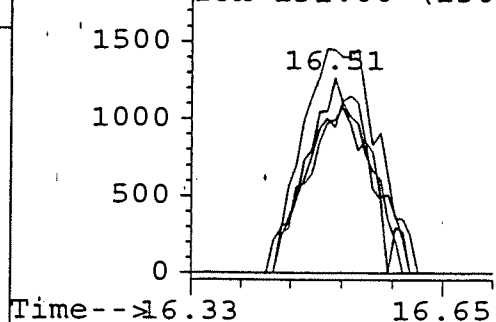
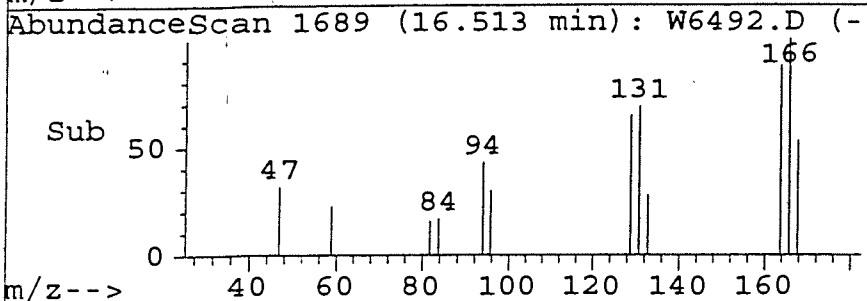


#37
Tetrachloroethene
Concen: 0.62 ug/l
RT: 16.51 min Scan# 1689
Delta R.T. - -0.27 min
Lab File: W6492.D
Acq: 17 Jul 96 8:21 pm

Tgt Ion:164	Resp:	7300
Ion Ratio	Lower	Upper
164 100		
166 133.5	81.6	181.6
129 87.5	33.6	133.6
131 78.4	29.4	129.4

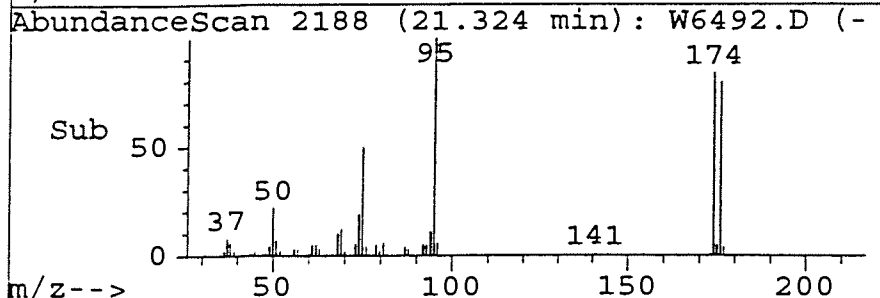
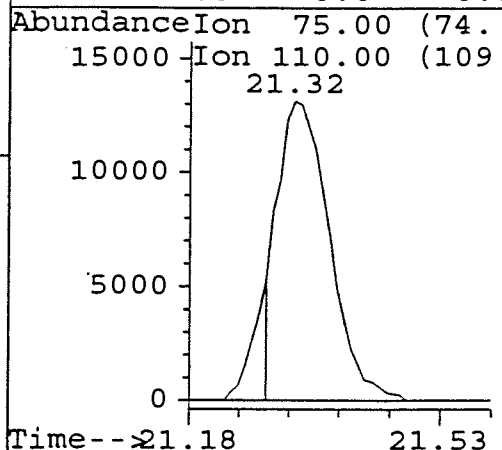
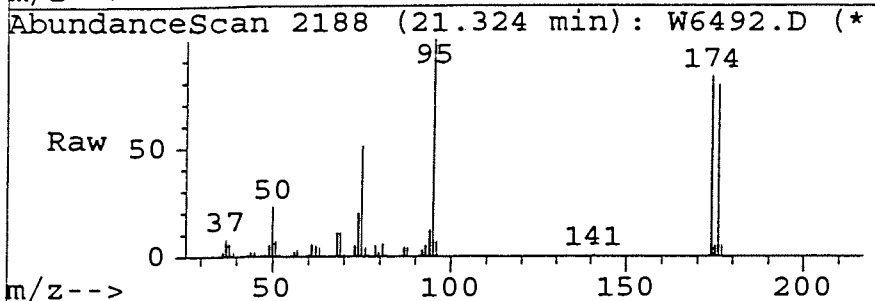


Abundance	Ion	
164.00	(163	
166.00	(165	
129.00	(128	
131.00	(130	



#50
1,2,3-Trichloropropane
Concen: 21.24 ug/l
RT: 21.32 min Scan# 2188
Delta R.T. -0.21 min
Lab File: W6492.D
Acq: 17 Jul 96 8:21 pm

Tgt Ion:75	Resp:	64667
Ion Ratio	Lower	Upper
75 100		
110	0.0	0.0 86.0
0	0.0	0.0 0.0
0	0.0	0.0 0.0



Library Search Compound Report

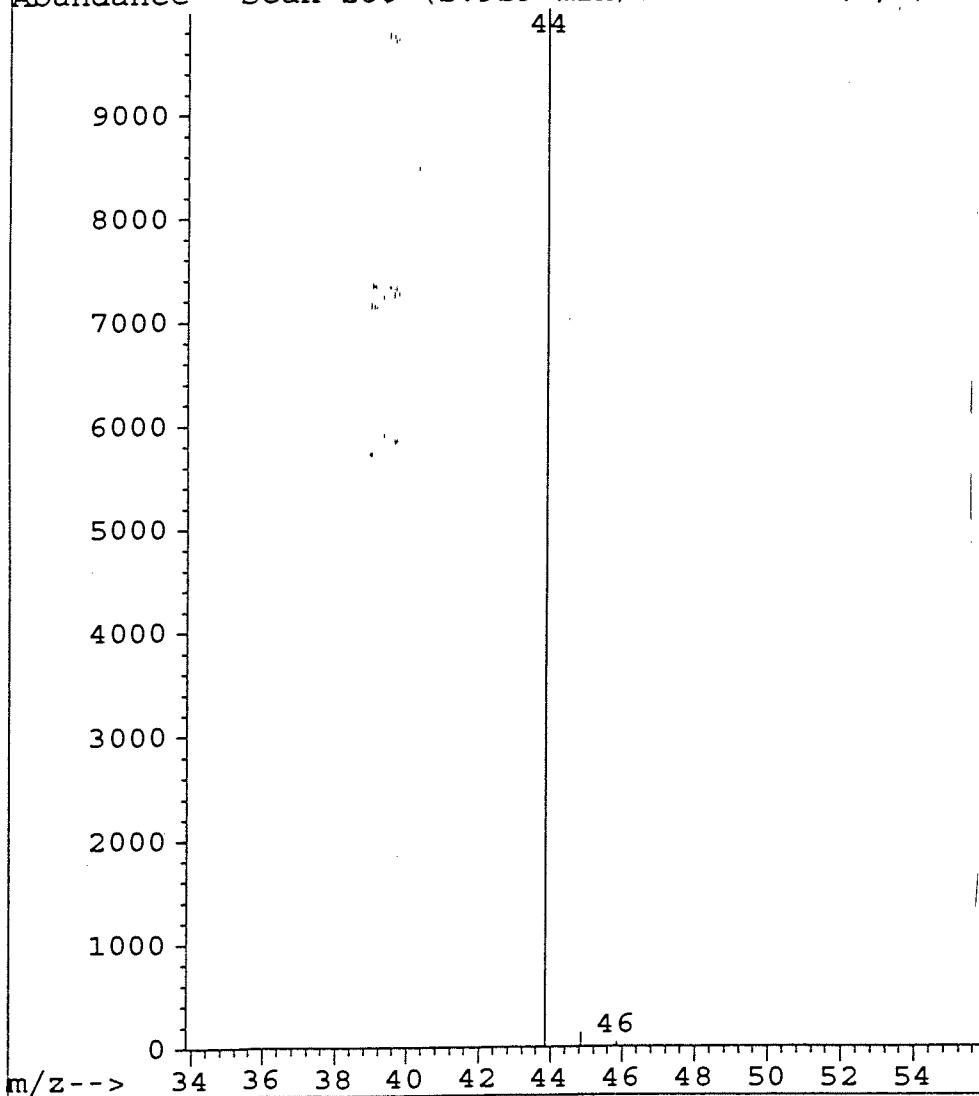
Data File : C:\HPCHEM\1\DATA\JUL17\W6492.D
Acq Time : 17 Jul 96 8:21 pm
Sample : G9607191-1(4B)/B#96421
Misc : DF=5/5ML:25ML/GW-4/ALLIED SIGNAL

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

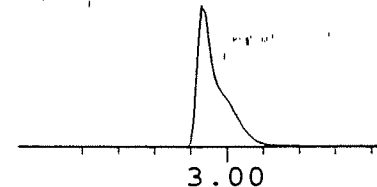
Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.93	73.11 ug/l	4047898	Fluorobenzene	11.11	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L			0000000-00-0	0

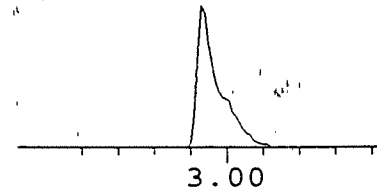
Abundance Scan 280 (2.929 min): W6492.D (-,*)



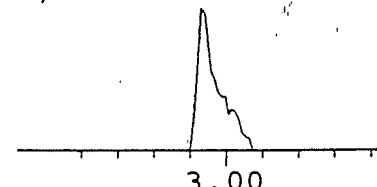
m/z 43.85 100.00%



m/z 44.85 1.34%



m/z 45.85 0.47%



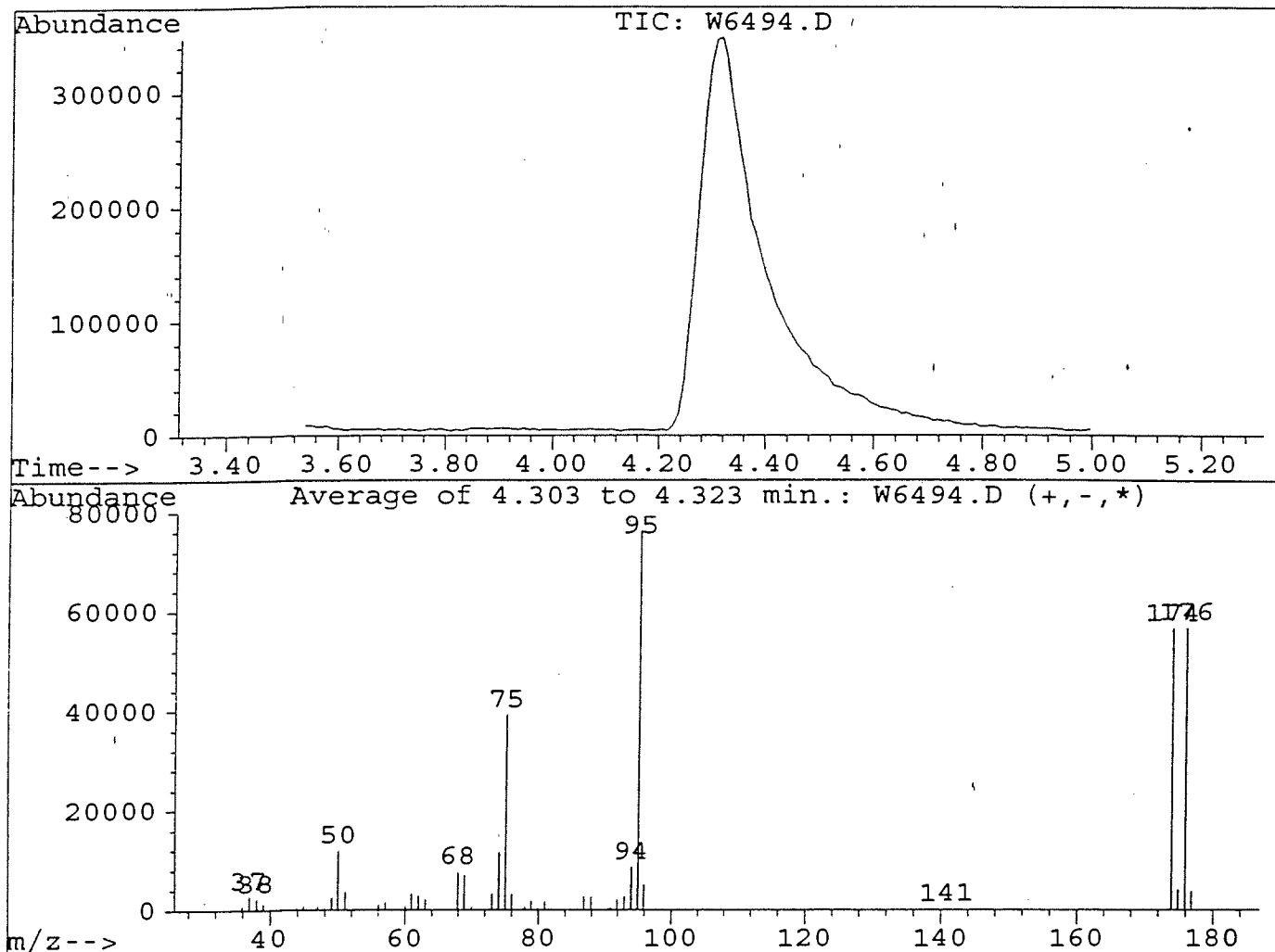
002125

BFB

Data File : C:\HPCHEM\1\DATA\JUL17\W6494.D
Acq Time : 17 Jul 96 9:34 pm
Sample : 50 NG BFB/B#96420
Misc : 1UL/VO9602070

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
Title :



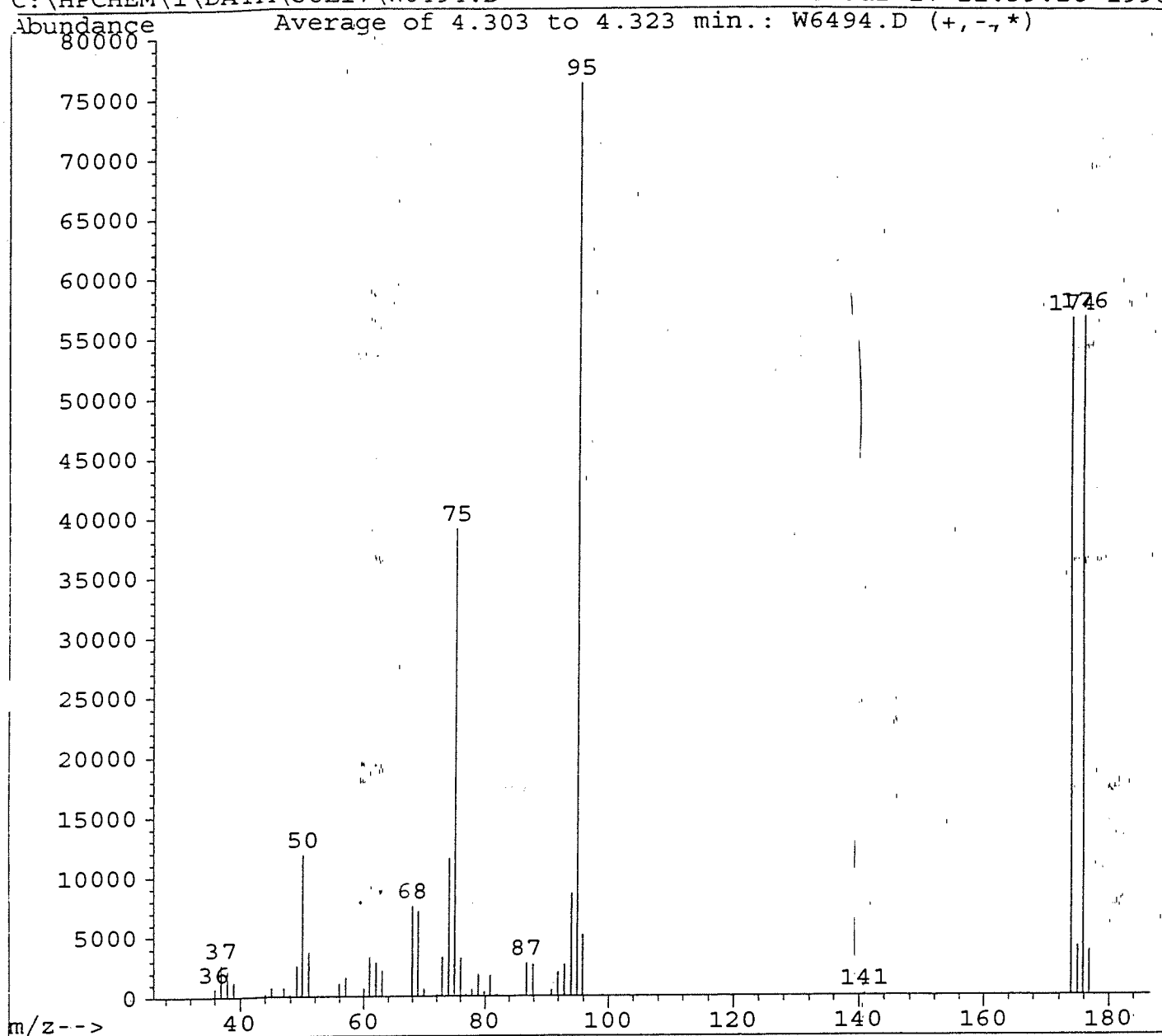
Peak Apex is scan: 81

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.5	11843	PASS
75	95	30	60	51.2	39040	PASS
95	95	100	100	100.0	76301	PASS
96	95	5	9	6.7	5108	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	74.1	56501	PASS
175	174	5	9	7.2	4095	PASS
176	174	95	101	100.3	56656	PASS
177	176	5	9	6.5	3701	PASS

BFB 624 Results

C:\HPCHEM\1\DATA\JUL17\W6494.D

Wed Jul 17 21:39:28 1996



Peak Apex is scan: 81

Average of 3 scans: 80,81,82 minus background scan 70

Target Mass	Comparison Mass	Lower Limit, %	Upper Limit, %	Relative Abundance, %	Result Pass/Fail
50	95	15	40	15.5	PASS
75	95	30	60	51.2	PASS
95	95	100	100	100.0	PASS
96	95	5	9	6.7	PASS
173	174	0	2	0.0	PASS
174	95	50	100	74.1	PASS
175	174	5	9	7.2	PASS
176	174	95	101	100.3	PASS
177	176	5	9	6.5	PASS

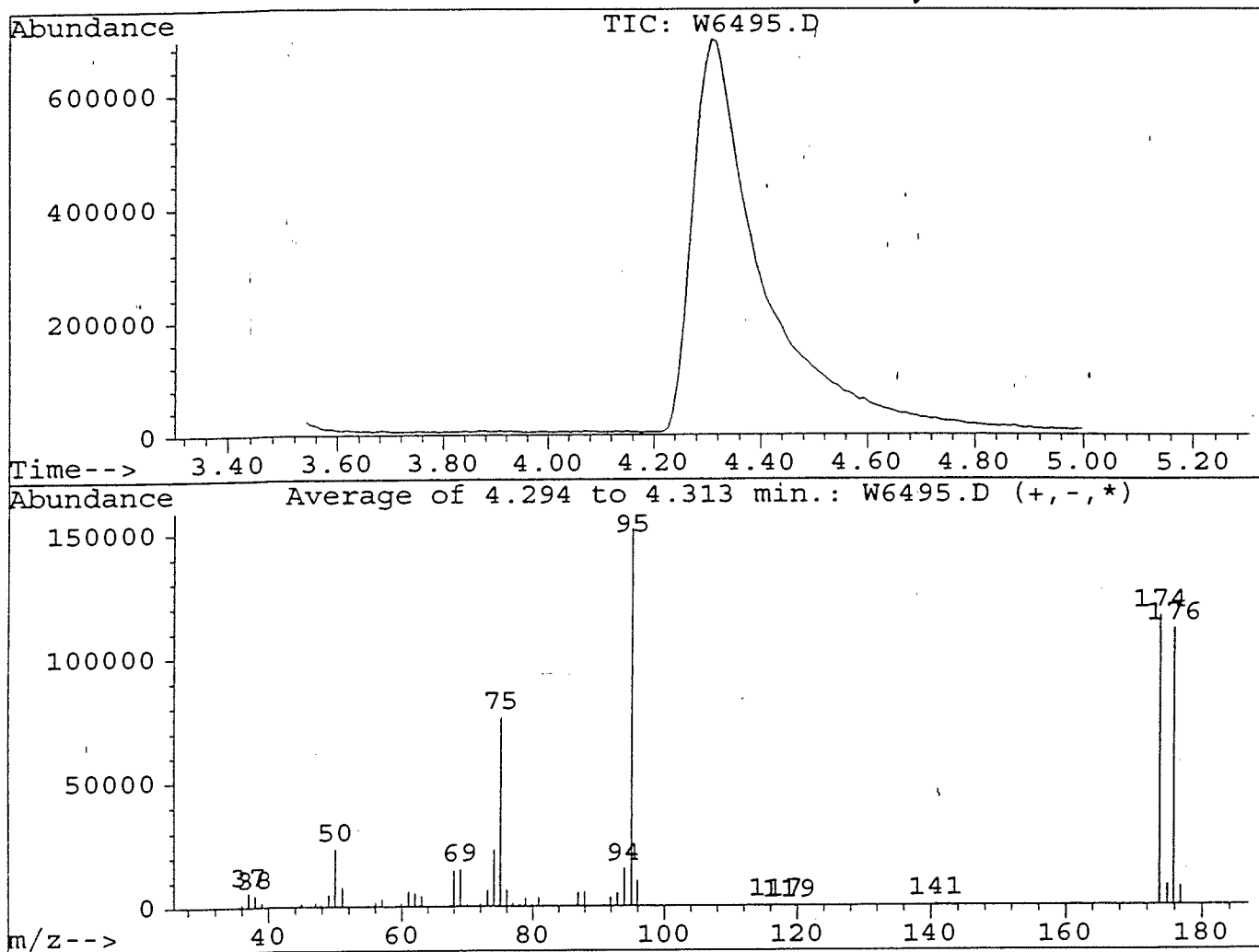
002127

BFB

Data File : C:\HPCHEM\1\DATA\JUL17\W6495.D
 Acq Time : 17 Jul 96 9:53 pm
 Sample : 50 NG BFB/B#96420
 Misc : 1UL/VO9602070

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
 Title :



Peak Apex is scan: 80

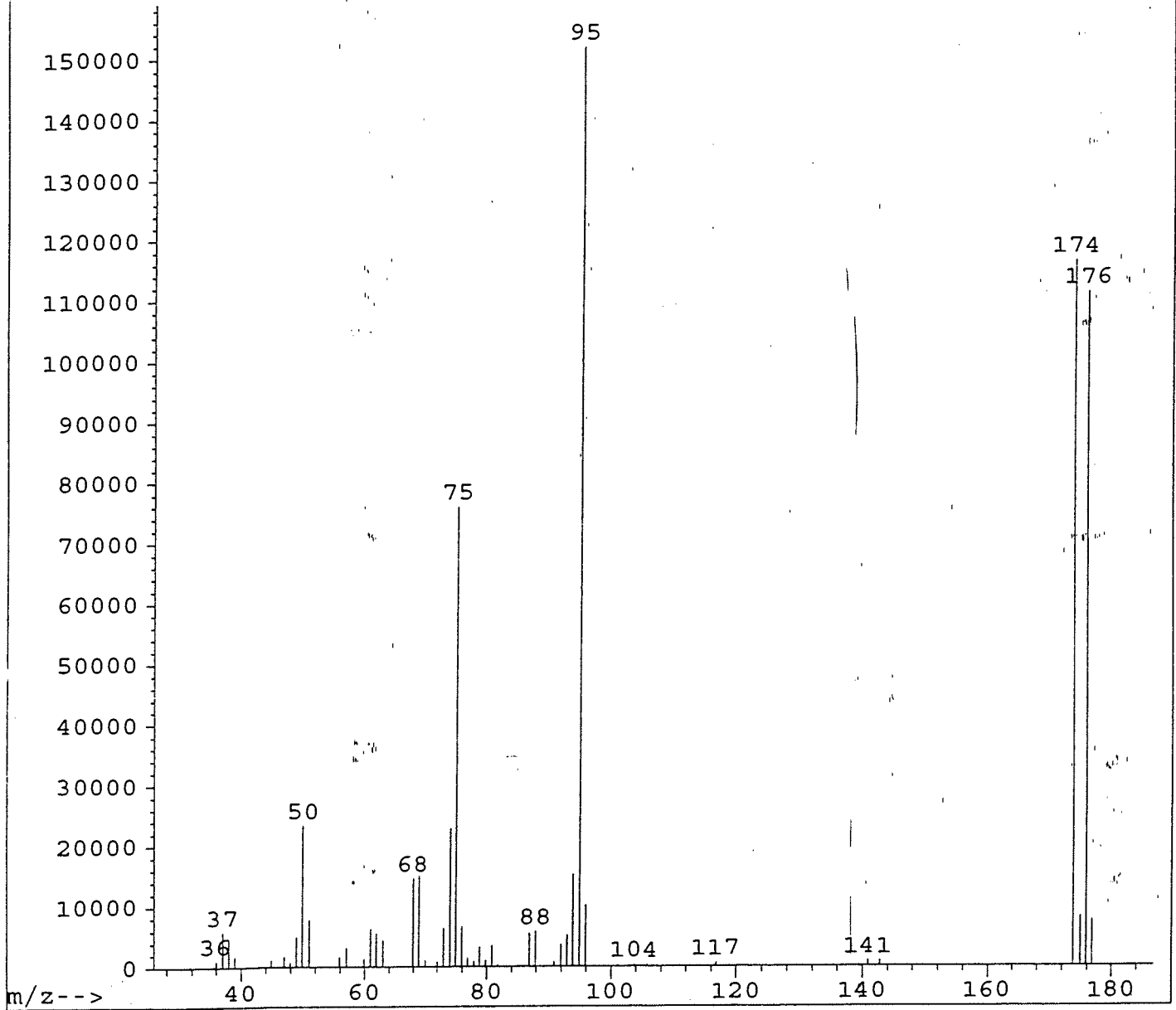
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.4	23328	PASS
75	95	30	60	50.0	75851	PASS
95	95	100	100	100.0	151637	PASS
96	95	5	9	6.7	10197	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	76.8	116432	PASS
175	174	5	9	7.0	8169	PASS
176	174	95	101	95.6	111280	PASS
177	176	5	9	6.9	7638	PASS

BFB 624 Results

C:\HPCHEM\1\DATA\JUL17\W6495.D

Wed Jul 17 21:58:20 1996

Abundance Average of 4.294 to 4.313 min.: W6495.D (+, -, *)



Peak Apex is scan: 80

Average of 3 scans: 79,80,81 minus background scan 70

Target Mass	Comparison Mass	Lower Limit, %	Upper Limit, %	Relative Abundance, %	Result Pass/Fail
50	95	15	40	15.4	PASS
75	95	30	60	50.0	PASS
95	95	100	100	100.0	PASS
96	95	5	9	6.7	PASS
173	174	0	2	0.0	PASS
174	95	50	100	76.8	PASS
175	174	5	9	7.0	PASS
176	174	95	101	95.6	PASS
177	176	5	9	6.9	PASS

002129

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6496.D
 Acq Time : 17 Jul 96 10:17 pm
 Sample : 10PPB-QCCS-3/B#96421
 SC : 25ML/VO9607015
 Quant Time: Jul 18 13:45 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.09	96	272379	10.00	ug/l	-0.03
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.79	150	182560	11.65	ug/l	116.47%
47) Bromofluorobenzene	21.33	95	162119	10.97	ug/l	109.70%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.19	85	134187	13.69	ug/l	98
3) Chloromethane	3.55	50	31965	10.47	ug/l	97
4) Vinyl Chloride	3.71	62	41860	11.63	ug/l	95
5) Bromomethane	4.37	94	63788	11.55	ug/l	92
6) Chloroethane	4.48	64	27385	10.88	ug/l	93
7) Freon 123	4.83	83	163761	12.64	ug/l	95
8) Trichlorofluoromethane	4.86	101	189172	14.33	ug/l	99
9) Acetone	5.58	43	9042	38.97	ug/l	100
10) 1,1-Dichloroethene	5.76	96	69160	13.01	ug/l	99
11) Freon 113	5.48	101	161296	13.81	ug/l	94
12) Methylene Chloride	6.50	84	50267	13.02	ug/l	90
13) 1,2-Dichloroethene (trans-)	6.99	96	66785	12.67	ug/l	93
14) 1,1-Dichloroethane	7.69	63	88717	11.44	ug/l	98
15) Methyl Ethyl Ketone	8.45	43	10785	30.74	ug/l	# 100
16) 2,2-Dichloropropane	8.69	77	113248	9.74	ug/l	97
17) 1,2-Dichloroethene (cis-)	8.77	96	85597	13.63	ug/l	98
18) Bromochloromethane	9.38	130	55440	10.96	ug/l	82
19) Chloroform	9.07	83	164518	12.66	ug/l	100
20) 1,1-Dichloropropene	10.13	75	136736	11.79	ug/l	95
21) 1,2-Dichloroethane	10.64	62	65034	11.01	ug/l	98
22) 1,1,1-Trichloroethane	9.84	97	193228	12.41	ug/l	96
23) Carbon Tetrachloride	10.34	117	177781	12.21	ug/l	100
24) Benzene	10.69	78	222090	10.62	ug/l	100
25) Trichloroethene	11.94	130	141788	12.70	ug/l	93
26) 1,2-Dichloropropane	12.33	63	70703	9.84	ug/l	55
27) Dibromomethane	12.95	174	56850	10.87	ug/l	86
28) Bromodichloromethane	12.82	83	145203	11.00	ug/l	98
29) Methyl Isobutyl Ketone	13.57	43	53107	36.68	ug/l	93
30) cis-1,3-Dichloropropene	14.05	75	95150	10.10	ug/l	98
31) trans-1,3-Dichloropropene	15.29	75	67877	10.17	ug/l	99
32) 1,3-Dichloropropane	16.35	76	68117	10.34	ug/l	97
33) Dibromochloromethane	17.00	129	101271	10.75	ug/l	99
34) Bromoform	20.71	173	53647	11.41	ug/l	m 100
35) Toluene	14.84	92	177449	11.35	ug/l	98
36) 1,1,2-Trichloroethane	15.69	97	49703	10.45	ug/l	99
37) Tetrachloroethene	16.52	164	144417	12.55	ug/l	97
38) 1,2-Dibromoethane	17.50	107	71539	10.76	ug/l	99
39) Chlorobenzene	18.52	112	235754	11.36	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.63	131	111767	11.54	ug/l	98
41) Ethylbenzene	18.65	106	124917	12.07	ug/l	92
42) m,p-Xylenes	18.85	106	301906	24.08	ug/l	87

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43)	o-Xylene	19.87	106	139527	11.90 ug/l	88
44)	Styrene	19.94	104	212314	11.90 ug/l	99
46)	Isopropylbenzene	20.72	105	443123	12.46 ug/l	97
48)	Bromobenzene	21.78	77	200858	11.25 ug/l	90
49)	1,1,2,2-Tetrachloroethane	21.14	83	59592	10.92 ug/l	97
50)	1,2,3-Trichloropropane	21.50	75	37124	12.41 ug/l	93
51)	n-Propylbenzene	21.73	91	534681	12.53 ug/l	93
52)	2-Chlorotoluene	22.12	91	361881	12.58 ug/l	93
53)	4-Chlorotoluene	22.24	91	311159	12.16 ug/l	83
54)	1,3,5-Trimethylbenzene	22.10	105	325442	12.51 ug/l	95
55)	Tert-Butylbenzene	22.92	119	385250	13.30 ug/l	97
56)	1,2,4-Trimethylbenzene	23.01	105	329059	12.54 ug/l	95
57)	Sec-Butylbenzene	23.39	105	577916	13.55 ug/l	97
58)	1,3-Dichlorobenzene	23.87	146	220311	12.34 ug/l	99
59)	1,4-Dichlorobenzene	24.09	146	229939	12.80 ug/l	99
60)	p-Isopropyltoluene	23.70	119	448607	13.76 ug/l	98
61)	1,2-Dichlorobenzene	24.84	146	182425	12.88 ug/l	95
62)	n-Butylbenzene	24.55	91	450958	13.62 ug/l	97
63)	1,2-Dibromo-3-Chloropropan	26.34	75	11092	12.10 ug/l	72
64)	1,2,4-Trichlorobenzene	28.05	180	164337	12.69 ug/l	95
65)	Naphthalene	28.59	128	122704	11.38 ug/l	95
66)	Hexachlorobutadiene	28.36	225	164583	13.94 ug/l	97
67)	1,2,3-Trichlorobenzene	29.16	180	125586	12.63 ug/l	98

(#) = qualifier out of range (m) = manual integration

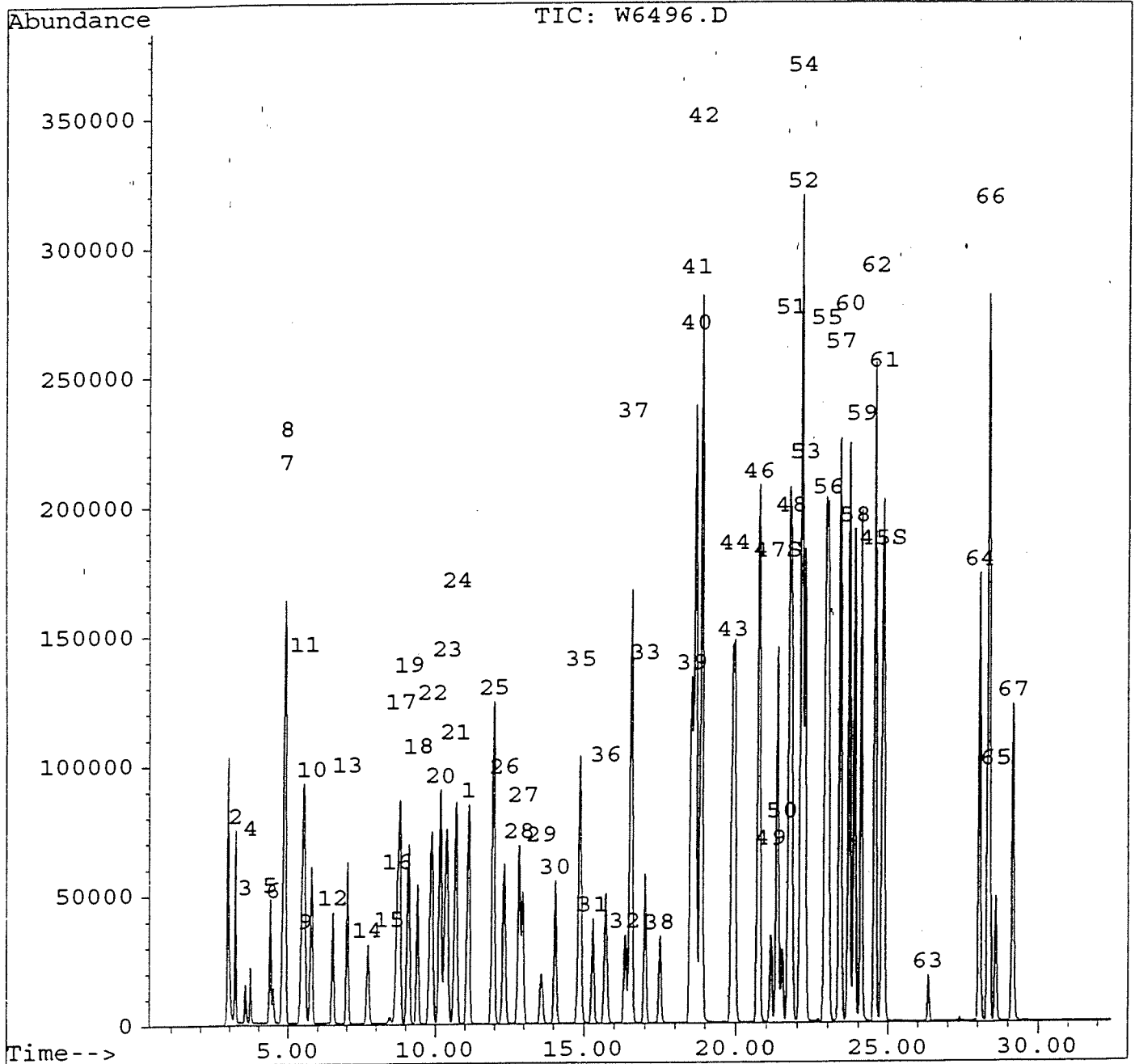
W6496.D 524JL.M Thu Jul 18 13:46:56 1996 VOA3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6496.D
 Acq Time : 17 Jul 96 10:17 pm
 Sample : 10PPB-QCCS-3/B#96421
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 22:50 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



002132

Library Search Compound Report

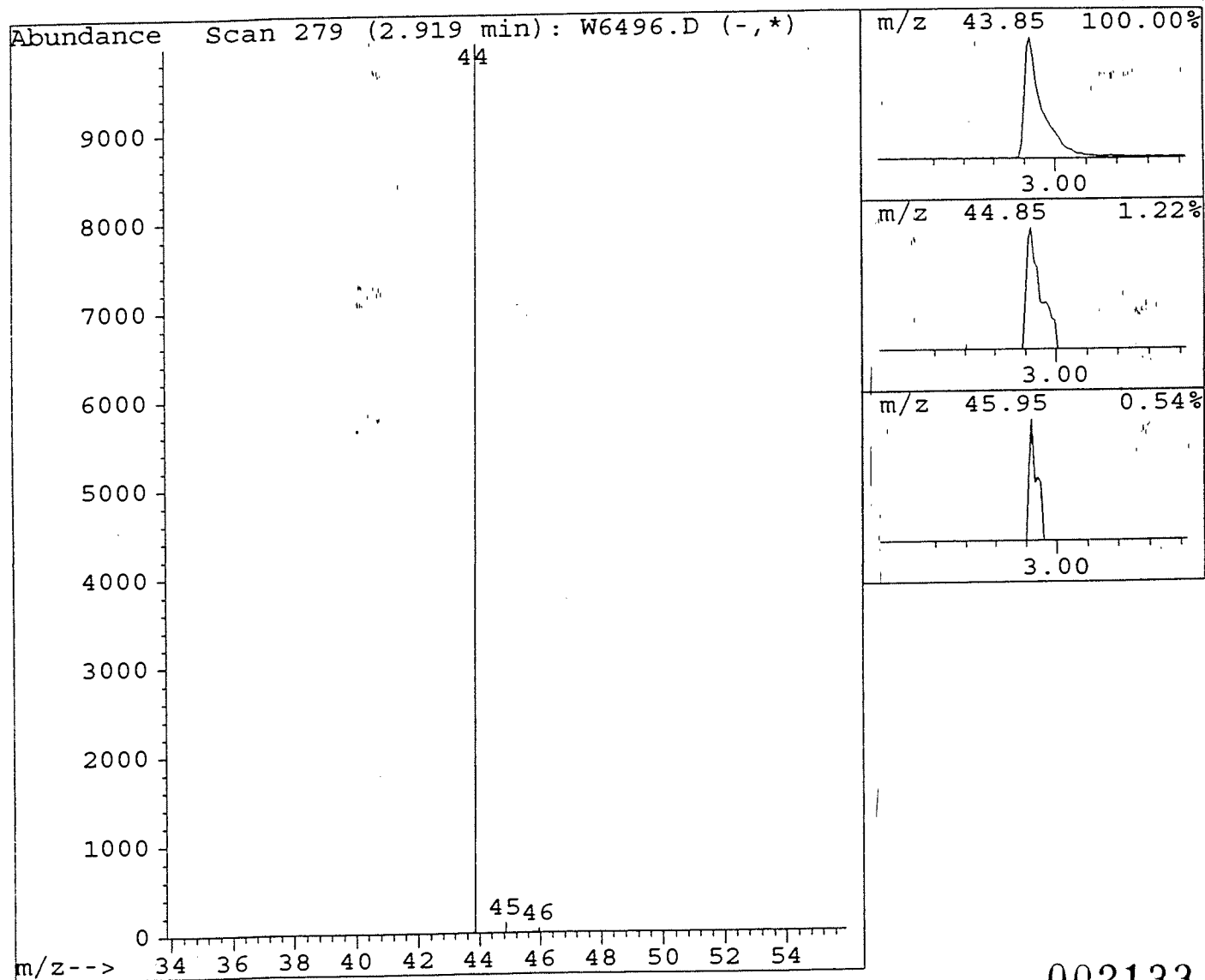
Data File : C:\HPCHEM\1\DATA\JUL17\W6496.D
Acq Time : 17 Jul 96 10:17 pm
Sample : 10PPB-QCCS-3/B#96421
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.92	7.06 ug/l	387070	Fluorobenzene	11.09

Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L		0	000000-00-0	0



002133

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6497.D
 Acq Time : 17 Jul 96 10:55 pm
 Sample : 10PPB-QCCS-4/B#9642✓
 :c : 25ML/VO9607015

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Min. RRF : 0.100 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
1	Fluorobenzene	1.000	1.000	0.0	58	-0.02
2	Dichlorodifluoromethane	0.360	0.526	-46.1#	84	0.08
3	Chloromethane	0.112	0.128	-14.3	65	0.07
4	Vinyl Chloride	0.132	0.165	-24.7	71	0.05
5	Bromomethane	0.203	0.242	-19.2	70	0.02
6	Chloroethane	0.092	0.103	-11.9	64	0.02
7	Freon 123	0.476	0.613	-28.8	71	-0.01
8	Trichlorofluoromethane	0.485	0.682	-40.8#	78	0.00
9	Acetone	0.009	0.009#	-9.8	76	-0.04
10	1,1-Dichloroethene	0.195	0.252	-29.2	73	-0.06
11	Freon 113	0.429	0.588	-37.1#	76	-0.04
12	Methylene Chloride	0.142	0.182	-28.3	76	-0.08
13	1,2-Dichloroethene (trans-)	0.193	0.234	-20.8	69	-0.11
14	1,1-Dichloroethane	0.285	0.314	-10.4	64	-0.14
1	Methyl Ethyl Ketone	0.013	0.010#	22.2	39#	-0.40
16	2,2-Dichloropropane	0.427	0.467	-9.4	58	-0.15
17	1,2-Dichloroethene (cis-)	0.231	0.316	-37.1#	62	-0.16
18	Bromochloromethane	0.186	0.195	-5.0	61	-0.18
19	Chloroform	0.477	0.584	-22.4	62	-0.16
20	1,1-Dichloropropene	0.426	0.494	-16.1	64	-0.19
21	1,2-Dichloroethane	0.217	0.231	-6.4	63	-0.20
22	1,1,1-Trichloroethane	0.572	0.683	-19.4	66	-0.18
23	Carbon Tetrachloride	0.534	0.627	-17.3	64	-0.19
24	Benzene	0.767	0.798	-4.0	60	-0.04
25	Trichloroethene	0.410	0.482	-17.5	66	-0.20
26	1,2-Dichloropropane	0.264	0.250	5.4	55	-0.22
27	Dibromomethane	0.192	0.197	-2.8	60	-0.23
28	Bromodichloromethane	0.485	0.500	-3.2	59	-0.05
29	Methyl Isobutyl Ketone	0.053	0.049#	7.4	54	-0.22
30	cis-1,3-Dichloropropene	0.346	0.329	4.8	55	-0.25
31	trans-1,3-Dichloropropene	0.245	0.237	3.5	57	-0.28
32	1,3-Dichloropropane	0.242	0.244	-0.7	59	-0.26
33	Dibromochloromethane	0.346	0.348	-0.7	59	-0.25
34	Bromoform	0.173	0.182	-5.2	61	-0.26
35	Toluene	0.574	0.618	-7.7	61	-0.29
36	1,1,2-Trichloroethane	0.175	0.178	-1.8	60	-0.26
37	Tetrachloroethene	0.423	0.496	-17.4	65	-0.26
38	1,2-Dibromoethane	0.244	0.251	-2.6	60	-0.24
39	Chlorobenzene	0.762	0.821	-7.8	62	-0.22
4	1,1,1,2-Tetrachloroethane	0.356	0.375	-5.4	61	-0.22
4	Ethylbenzene	0.380	0.427	-12.4	63	-0.04
42	m,p-Xylenes	0.460	0.524	-13.9	65	-0.02
43	o-Xylene	0.430	0.481	-11.9	64	-0.21
44	Styrene	0.655	0.730	-11.3	65	-0.20
45 S	1,2-Dichlorobenzene-d4	0.575	0.643	-11.8	68	-0.15
46	Isopropylbenzene	1.306	1.524	-16.7	65	-0.24

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47	S	Bromofluorobenzene	0.543	0.554	-2.1	61	-0.23
48		Bromobenzene	0.655	0.708	-8.0	63	-0.22
49		1,1,2,2-Tetrachloroethane	0.200	0.208	-3.6	62	-0.02
50		1,2,3-Trichloropropane	0.110	0.131	-19.0	64	-0.05
51		n-Propylbenzene	1.566	1.829	-16.8	65	-0.20
52		2-Chlorotoluene	1.056	1.210	-14.6	67	-0.04
53		4-Chlorotoluene	0.939	1.107	-17.9	67	-0.01
54		1,3,5-Trimethylbenzene	0.955	1.097	-14.9	64	-0.18
55		Tert-Butylbenzene	1.063	1.285	-20.9	67	-0.16
56		1,2,4-Trimethylbenzene	0.964	1.111	-15.3	65	-0.02
57		Sec-Butylbenzene	1.566	1.917	-22.4	67	-0.15
58		1,3-Dichlorobenzene	0.656	0.778	-18.7	68	-0.02
59		1,4-Dichlorobenzene	0.660	0.791	-20.0	69	-0.02
60		p-Isopropyltoluene	1.197	1.467	-22.5	67	-0.14
61		1,2-Dichlorobenzene	0.520	0.625	-20.1	70	-0.14
62		n-Butylbenzene	1.215	1.453	-19.6	65	-0.12
63		1,2-Dibromo-3-Chloropropane	0.034	0.037#	-9.4	64	-0.14
64		1,2,4-Trichlorobenzene	0.476	0.523	-10.0	64	-0.20
65		Naphthalene	0.396	0.439	-10.8	68	-0.23
66		Hexachlorobutadiene	0.434	0.459	-5.8	57	-0.01
67		1,2,3-Trichlorobenzene	0.365	0.403	-10.5	65	-0.28

(#) = Out of Range
W6399.D 524JL.M

SPCC's out = 0 CCC's out = 0
Thu Jul 18 13:50:12 1996 VOA3 .

002135

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6497.D

Acq Time : 17 Jul 96 10:55 pm

Sample : 10PPB-QCCS-4/B#96427

sc : 25ML/VO9607015

Quant Time: Jul 18 13:49 1996

BATCH #

DATE

ANALYST

Operator: DEBBIE

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Last Update : Tue Jul 16 10:03:38 1996

Response via : Multiple Level Calibration

07-2490

REVIEWED & APPROVED

SL 7-19-96

Internal Standards R.T. QIon Response Conc Units Dev (Min)

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.10	96	278744	10.00 ug/l	-0.02	

System Monitoring Compounds

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
45) 1,2-Dichlorobenzene-d4	24.78	150	179336	11.18 ug/l	111.80%	
47) Bromofluorobenzene	21.32	95	154411	10.21 ug/l	102.10%	

Target Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethane	3.19	85	146619	14.61 ug/l		98
3) Chloromethane	3.56	50	35694	11.43 ug/l		94
4) Vinyl Chloride	3.72	62	45900	12.47 ug/l		92
5) Bromomethane	4.38	94	67357	11.92 ug/l		94
6) Chloroethane	4.49	64	28816	11.19 ug/l		94
7) Freon 123	4.84	83	170826	12.88 ug/l		96
8) Trichlorofluoromethane	4.87	101	190219	14.08 ug/l		99
9) Acetone	5.59	43	10432	43.94 ug/l	m	100
10) 1,1-Dichloroethene	5.77	96	70273	12.92 ug/l		97
11) Freon 113	5.50	101	163891	13.71 ug/l		94
12) Methylene Chloride	6.52	84	50693	12.83 ug/l		92
13) 1,2-Dichloroethene (trans-)	7.00	96	65131	12.08 ug/l		94
14) 1,1-Dichloroethane	7.71	63	87595	11.04 ug/l		97
15) Methyl Ethyl Ketone	8.47	43	11167	31.10 ug/l	#	100
16) 2,2-Dichloropropane	8.72	77	130094	10.94 ug/l		98
17) 1,2-Dichloroethene (cis-)	8.79	96	88113	13.71 ug/l		99
18) Bromochloromethane	9.38	130	54330	10.50 ug/l		82
19) Chloroform	9.08	83	162747	12.24 ug/l		99
20) 1,1-Dichloropropene	10.15	75	137708	11.61 ug/l		96
21) 1,2-Dichloroethane	10.64	62	64311	10.64 ug/l		98
22) 1,1,1-Trichloroethane	9.85	97	190354	11.94 ug/l		96
23) Carbon Tetrachloride	10.36	117	174762	11.73 ug/l		99
24) Benzene	10.69	78	222443	10.40 ug/l		100
25) Trichloroethene	11.95	130	134235	11.75 ug/l		96
26) 1,2-Dichloropropane	12.33	63	69569	9.46 ug/l		53
27) Dibromomethane	12.95	174	55034	10.28 ug/l		81
28) Bromodichloromethane	12.82	83	139388	10.32 ug/l		99
29) Methyl Isobutyl Ketone	13.58	43	54900	37.05 ug/l		78
30) cis-1,3-Dichloropropene	14.04	75	91807	9.52 ug/l		99
31) trans-1,3-Dichloropropene	15.28	75	65928	9.65 ug/l		100
32) 1,3-Dichloropropane	16.33	76	67878	10.07 ug/l		97
33) Dibromochloromethane	17.00	129	97050	10.07 ug/l		99
34) Bromoform	20.70	173	50632	10.52 ug/l		100
35) Toluene	14.84	92	172336	10.77 ug/l		97
36) 1,1,2-Trichloroethane	15.69	97	49525	10.18 ug/l		99
37) Tetrachloroethene	16.52	164	138226	11.74 ug/l		97
38) 1,2-Dibromoethane	17.50	107	69857	10.26 ug/l		100
39) Chlorobenzene	18.52	112	228874	10.78 ug/l		100
40) 1,1,1,2-Tetrachloroethane	18.63	131	104490	10.54 ug/l		97
41) Ethylbenzene	18.65	106	119109	11.24 ug/l		94
42) m,p-Xylenes	18.85	106	292188	22.78 ug/l		89

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43)	o-Xylene	19.86	106	134163	11.19 ug/l	88
44)	Styrene	19.94	104	203347	11.13 ug/l	99
46)	Isopropylbenzene	20.71	105	424793	11.67 ug/l	97
48)	Bromobenzene	21.78	77	197266	10.80 ug/l	92
49)	1,1,2,2-Tetrachloroethane	21.13	83	57885	10.36 ug/l	99
50)	1,2,3-Trichloropropane	21.48	75	36428	11.90 ug/l	90
51)	n-Propylbenzene	21.72	91	509853	11.68 ug/l	94
52)	2-Chlorotoluene	22.12	91	337218	11.46 ug/l	89
53)	4-Chlorotoluene	22.23	91	308600	11.79 ug/l	82
54)	1,3,5-Trimethylbenzene	22.10	105	305810	11.49 ug/l	94
55)	Tert-Butylbenzene	22.91	119	358296	12.09 ug/l	98
56)	1,2,4-Trimethylbenzene	22.99	105	309657	11.53 ug/l	96
57)	Sec-Butylbenzene	23.39	105	534314	12.24 ug/l	97
58)	1,3-Dichlorobenzene	23.86	146	216961	11.87 ug/l	99
59)	1,4-Dichlorobenzene	24.08	146	220600	12.00 ug/l	99
60)	p-Isopropyltoluene	23.69	119	408989	12.25 ug/l	98
61)	1,2-Dichlorobenzene	24.84	146	174076	12.01 ug/l	96
62)	n-Butylbenzene	24.54	91	405050	11.96 ug/l	98
63)	1,2-Dibromo-3-Chloropropan	26.32	75	10262	10.94 ug/l	68
64)	1,2,4-Trichlorobenzene	28.04	180	145834	11.00 ug/l	96
65)	Naphthalene	28.59	128	122257	11.08 ug/l	97
66)	Hexachlorobutadiene	28.35	225	127810	10.58 ug/l	98
67)	1,2,3-Trichlorobenzene	29.14	180	112425	11.05 ug/l	99

(#) = qualifier out of range (m) = manual integration

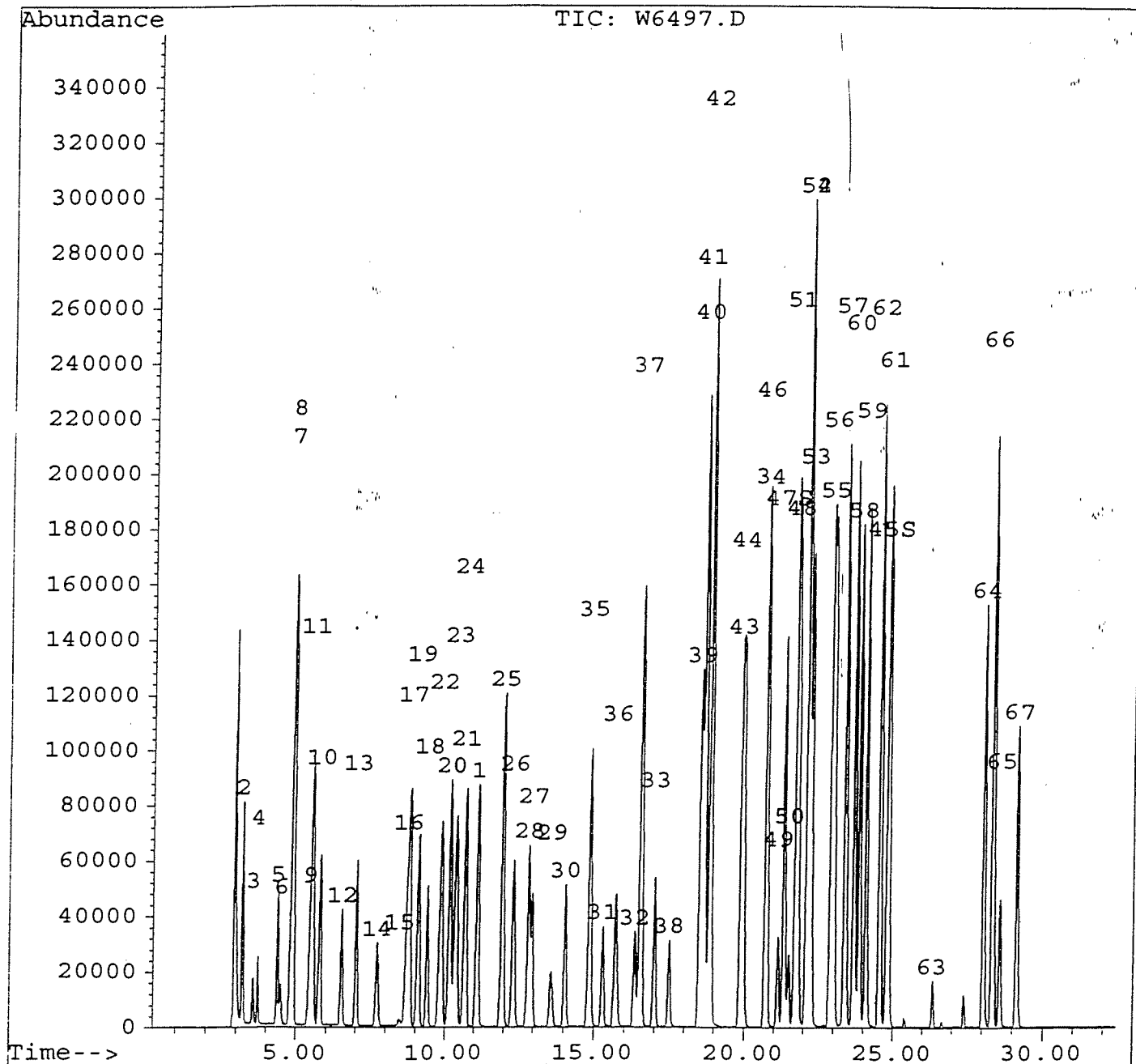
W6497.D 524JL.M Thu Jul 18 13:50:37 1996 VOA3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6497.D
 Acq Time : 17 Jul 96 10:55 pm
 Sample : 10PPB-QCCS-4/B#96421
 Misc : 25ML/VO9607015
 Quant Time: Jul 17 23:28 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



Library Search Compound Report

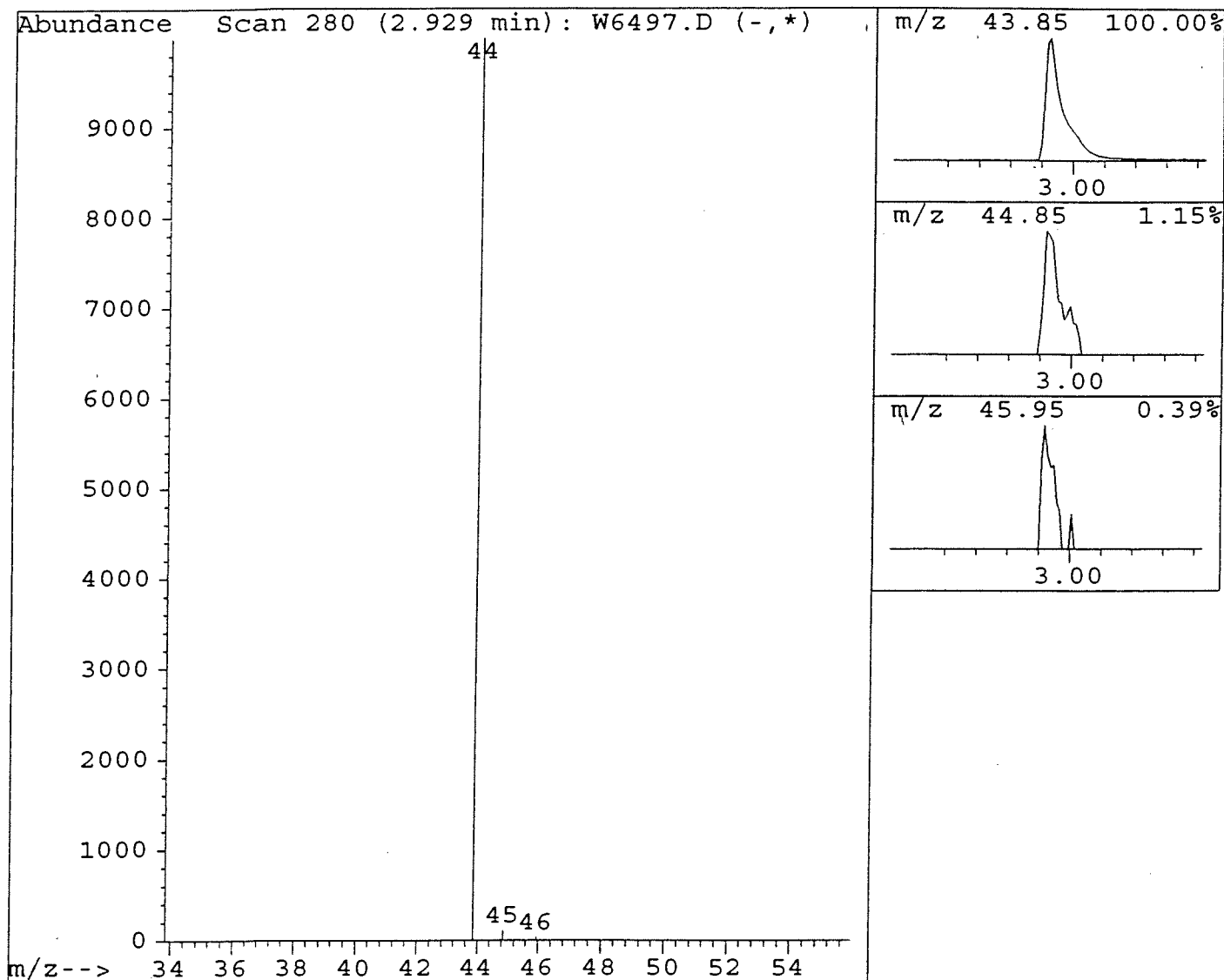
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Acq Time : 17 Jul 96 10:55 pm
Sample : 10PPB-QCCS-4/B#96421
Misc : 25ML/VO9607015

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.93	10.10 ug/l	569280	Fluorobenzene	11.10

Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L		0	000000-00-0	0



002139

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6500.D
Acq Time : 18 Jul 96 12:54 am
Sample : G9607215-4 (4B)/B#96421
Misc : 25ML/GW-4/ALLIED SIGNAL
Quant Time: Jul 18 1:26 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.09	96	263541	10.00	ug/l	-0.03

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
45) 1,2-Dichlorobenzene-d4	24.79	150	148970	9.82	ug/l	98.22
47) Bromofluorobenzene	21.34	95	139246	9.74	ug/l	97.38

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
9) Acetone	5.57	43	249	1.11	ug/l #	100
11) Freon 113	5.50	101	2700	0.24	ug/l	85
12) Methylene Chloride	6.51	84	1132	0.30	ug/l	97
21) 1,2-Dichloroethane	11.12	62	3404	0.60	ug/l #	48
25) Trichloroethene	11.94	130	1893	0.18	ug/l	74
50) 1,2,3-Trichloropropane	21.32	75	69525	24.03	ug/l #	39

REVIEWED & APPROVED

BY SL DATE 7-19-96BATCH # 96422DATE 07/18/96ANALYST pm

002140

(#) = qualifier out of range (m) = manual integration

W6500.D 524JLS.M

Thu Jul 18 01:27:13 1996

VOA3

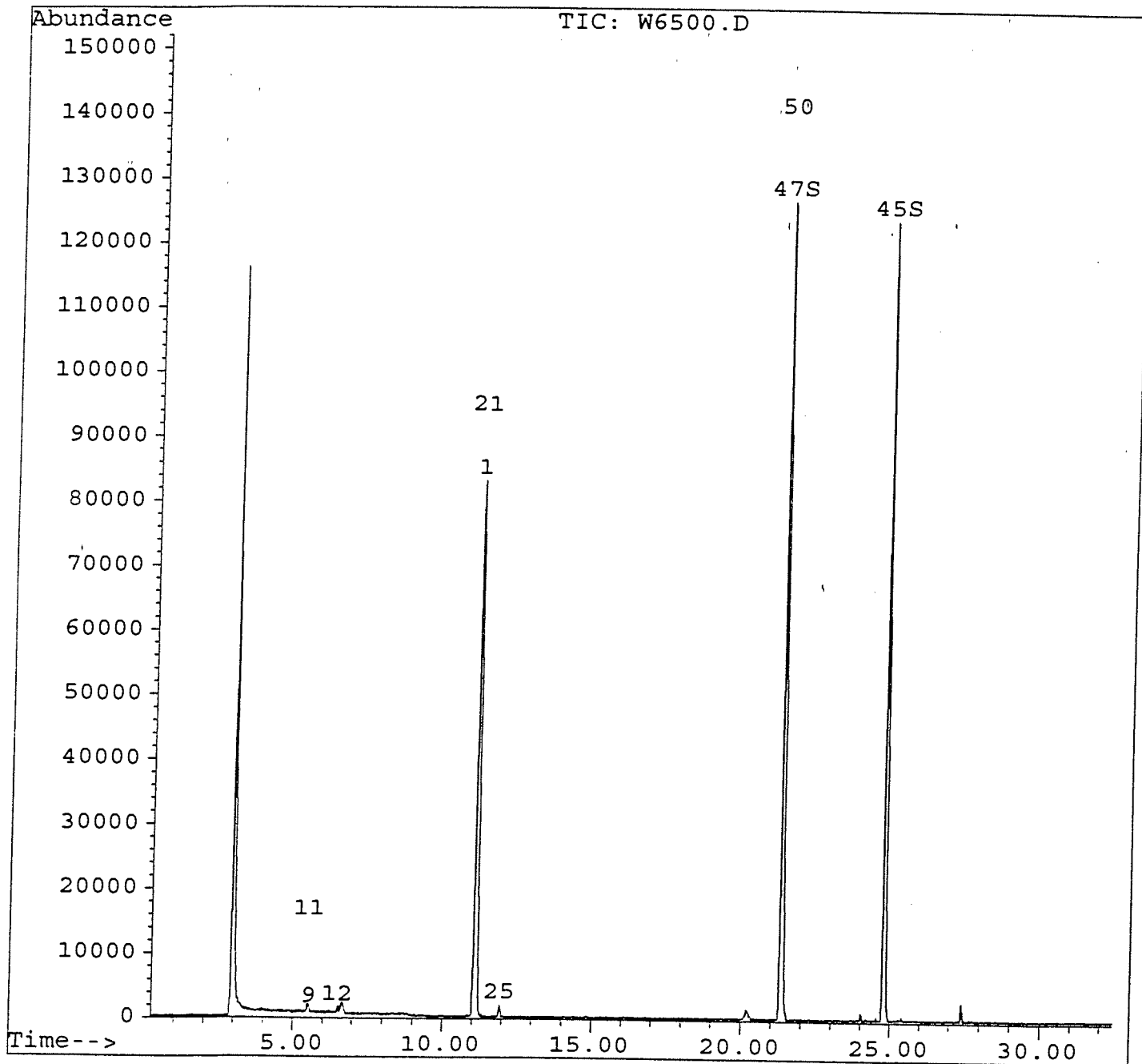
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6500.D
Acq Time : 18 Jul 96 12:54 am
Sample : G9607215-4(4B)/B#96421
Misc : 25ML/GW-4/ALLIED SIGNAL
Quant Time: Jul 18 1:26 1996

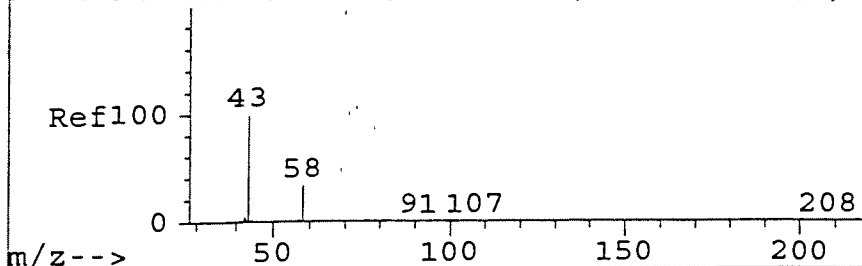
Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

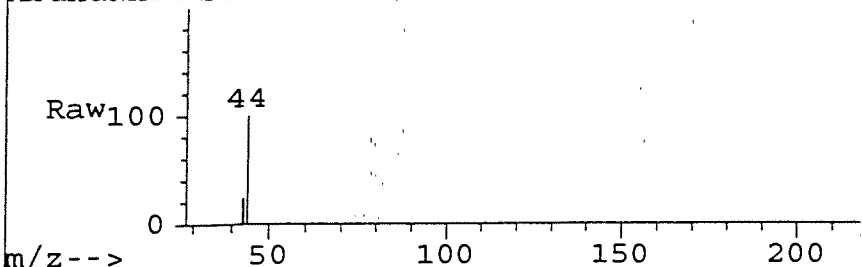


002141

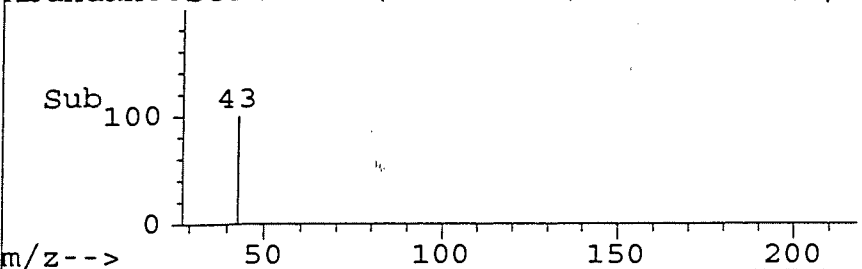
AbundanceScan 527 (5.329 min): W1885.D (-,*



AbundanceScan 554 (5.570 min): W6500.D (*)



AbundanceScan 554 (5.570 min): W6500.D (-,*



#9

Acetone

Concen: 1.11 ug/l

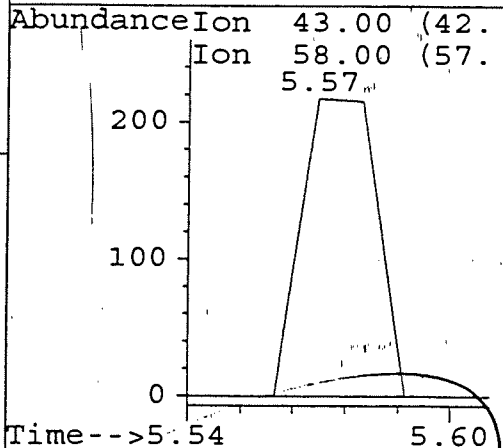
RT: 5.57 min Scan# 554

Delta R.T. -0.06 min

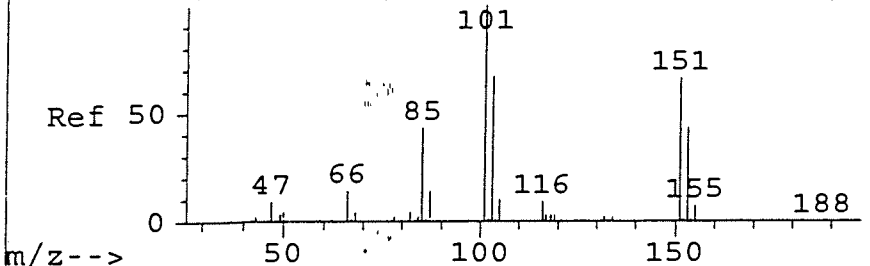
Lab File: W6500.D

Acq: 18 Jul 96 12:54 am

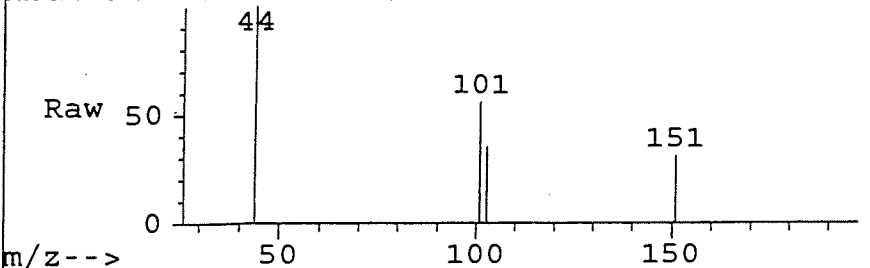
Tgt Ion:	43	Resp:	249
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	50.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



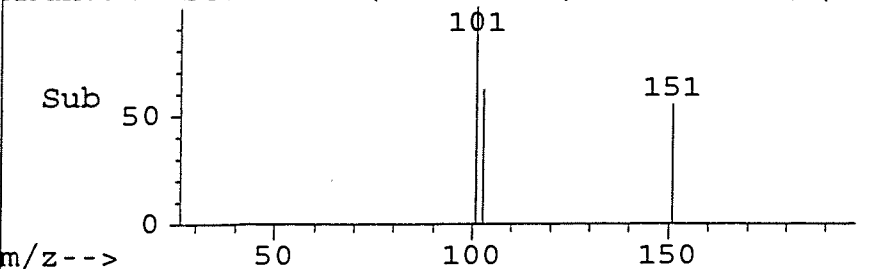
AbundanceScan 518 (5.242 min): W1885.D (-,*



AbundanceScan 547 (5.503 min): W6500.D (*)



AbundanceScan 547 (5.503 min): W6500.D (-,*



#11

Freon 113

Concen: 0.24 ug/l

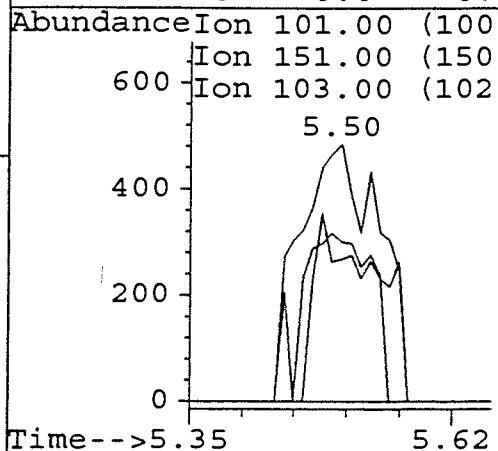
RT: 5.50 min Scan# 547

Delta R.T. -0.04 min

Lab File: W6500.D

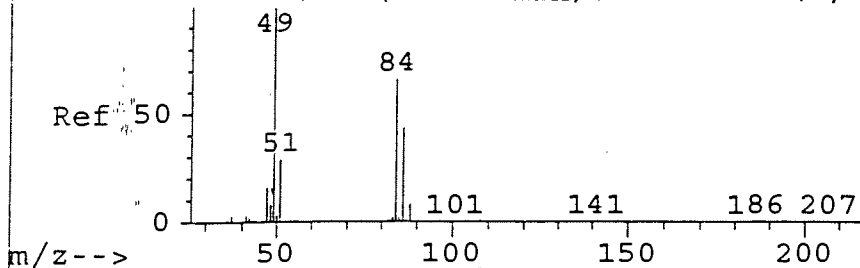
Acq: 18 Jul 96 12:54 am

Tgt Ion:	101	Resp:	2700
Ion	Ratio	Lower	Upper
101	100		
151	55.6	45.9	85.9
103	53.6	46.7	86.7
0	0.0	0.0	0.0



002142

AbundanceScan 623 (6.261 min): W1885.D (-,*

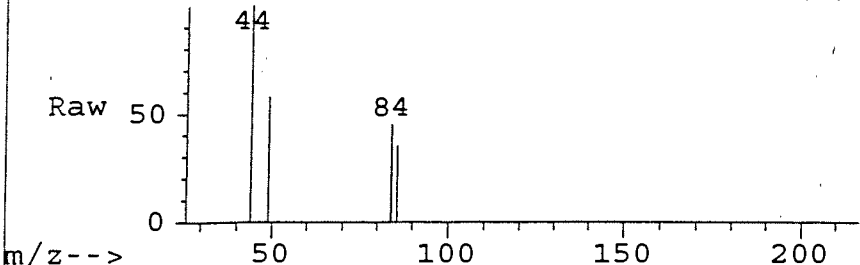


#12

Methylene Chloride
Concen: 0.30 ug/l
RT: 6.51 min Scan# 651
Delta R.T. -0.09 min
Lab File: W6500.D
Acq: 18 Jul 96 12:54 am

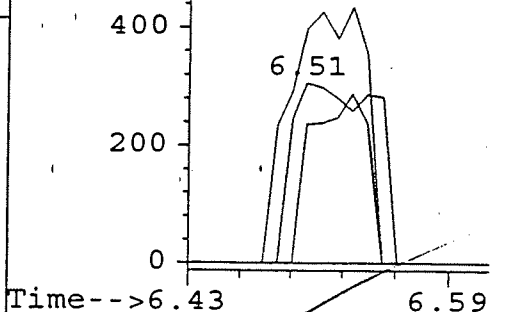
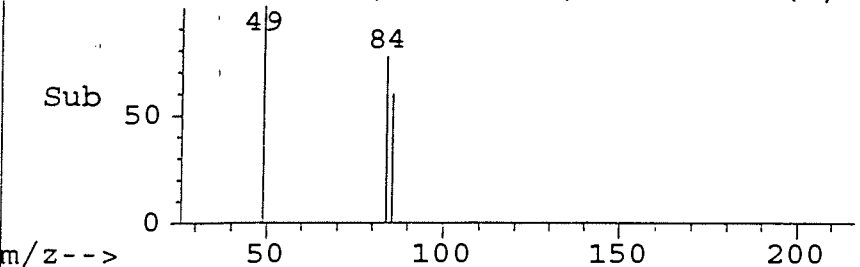
Tgt Ion:	84	Resp:	1132
Ion	Ratio	Lower	Upper
84	100		
49	128.7	41.6	221.6
86	63.8	0.0	157.2
0	0.0	0.0	0.0

Abundance Scan 651 (6.505 min): W6500.D (*)

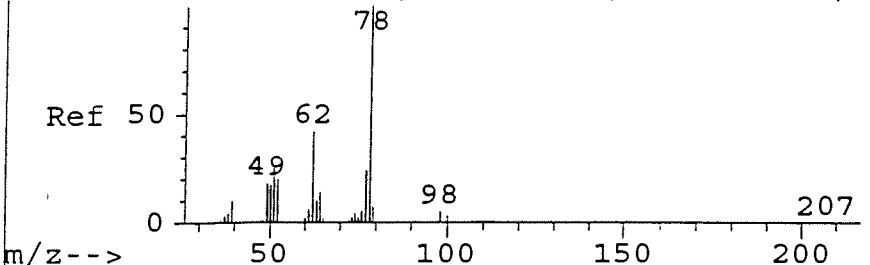


Abundance	Ion	84.00 (83.
600	Ion	49.00 (48.
	Ion	86.00 (85.

AbundanceScan 651 (6.505 min): W6500.D (-,*



AbundanceScan 1049 (10.390 min): W1885.D (-

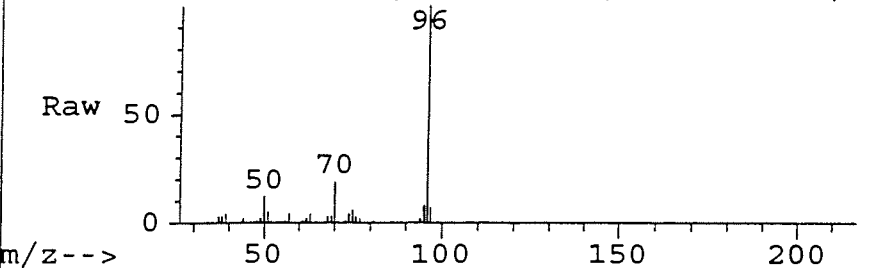


#21

1,2-Dichloroethane
Concen: 0.60 ug/l
RT: 11.12 min Scan# 1130
Delta R.T. 0.28 min
Lab File: W6500.D
Acq: 18 Jul 96 12:54 am

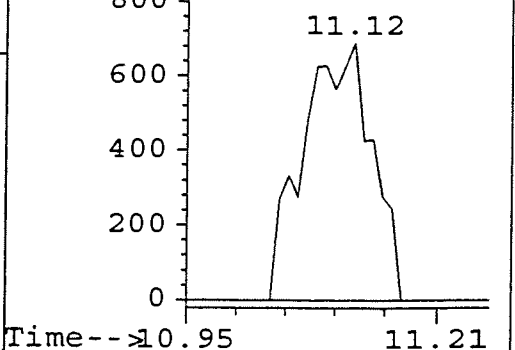
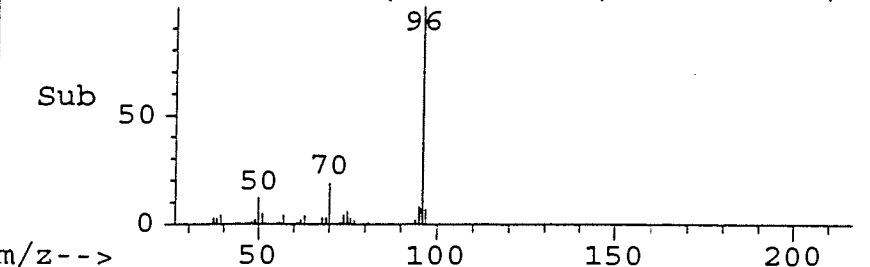
Tgt Ion:	62	Resp:	3404
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0

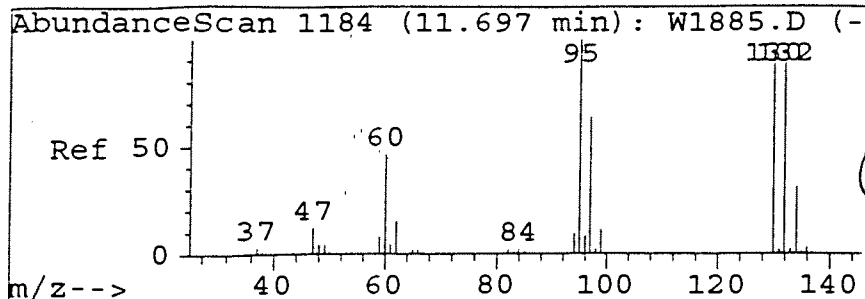
AbundanceScan 1130 (11.123 min): W6500.D (*)



Abundance	Ion	62.00 (61.
	Ion	64.00 (63.
	Ion	98.00 (97.

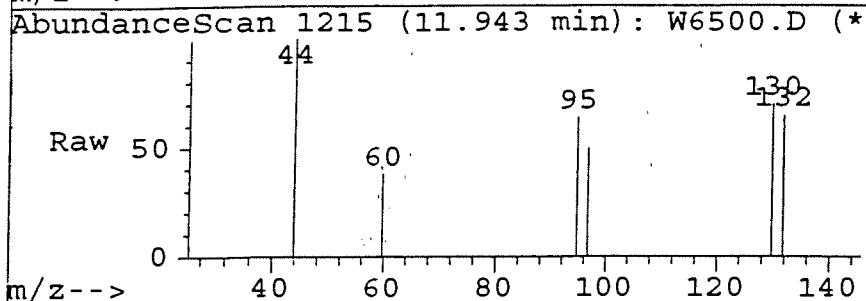
AbundanceScan 1130 (11.123 min): W6500.D (-



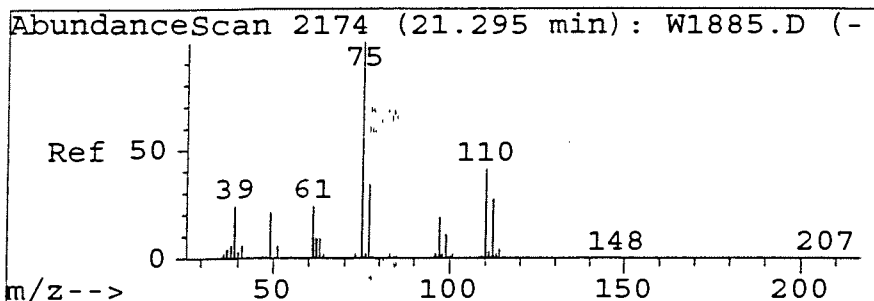
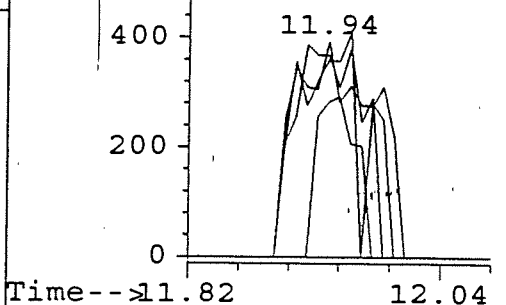
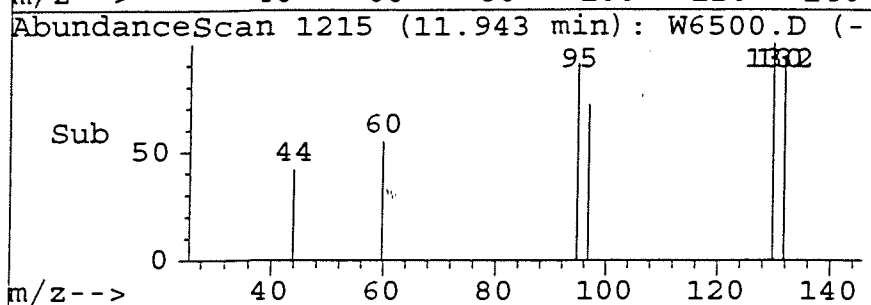


#25
 Trichloroethene
 Concen: 0.18 ug/l
 RT: 11.94 min Scan# 1215
 Delta R.T. - -0.21 min
 Lab File: W6500.D
 Acq: 18 Jul 96 12:54 am

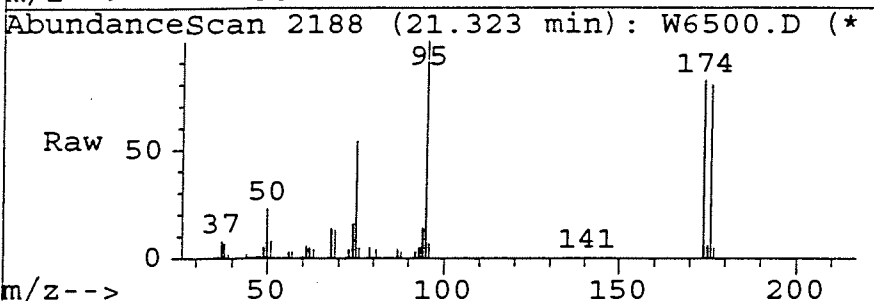
Tgt Ion:130	Resp:	1893
Ion	Ratio	Lower Upper
130	100	
132	85.8	46.4 146.4
95	69.9	54.1 154.1
97	37.8	16.2 116.2



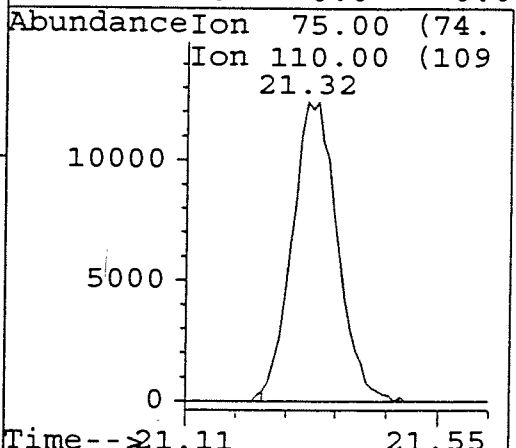
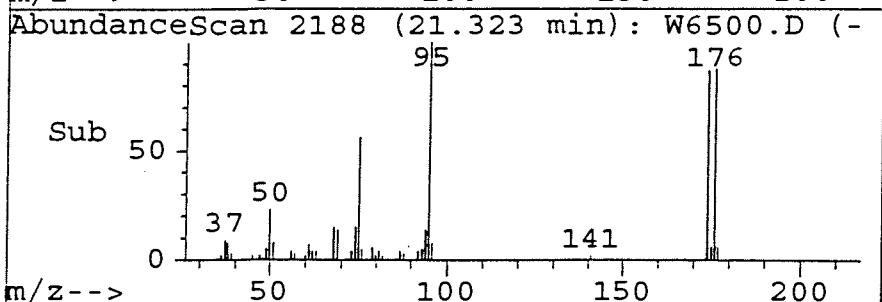
Abundance	Ion	130.00 (129
600	Ion	132.00 (131
	Ion	95.00 (94.
	Ion	97.00 (96.



#50
 1,2,3-Trichloropropane
 Concen: 24.03 ug/l
 RT: 21.32 min Scan# 2188
 Delta R.T. - -0.21 min
 Lab File: W6500.D
 Acq: 18 Jul 96 12:54 am



Tgt Ion:75	Resp:	69525
Ion	Ratio	Lower Upper
75	100	
110	0.0	0.0 86.0
0	0.0	0.0 0.0
0	0.0	0.0 0.0



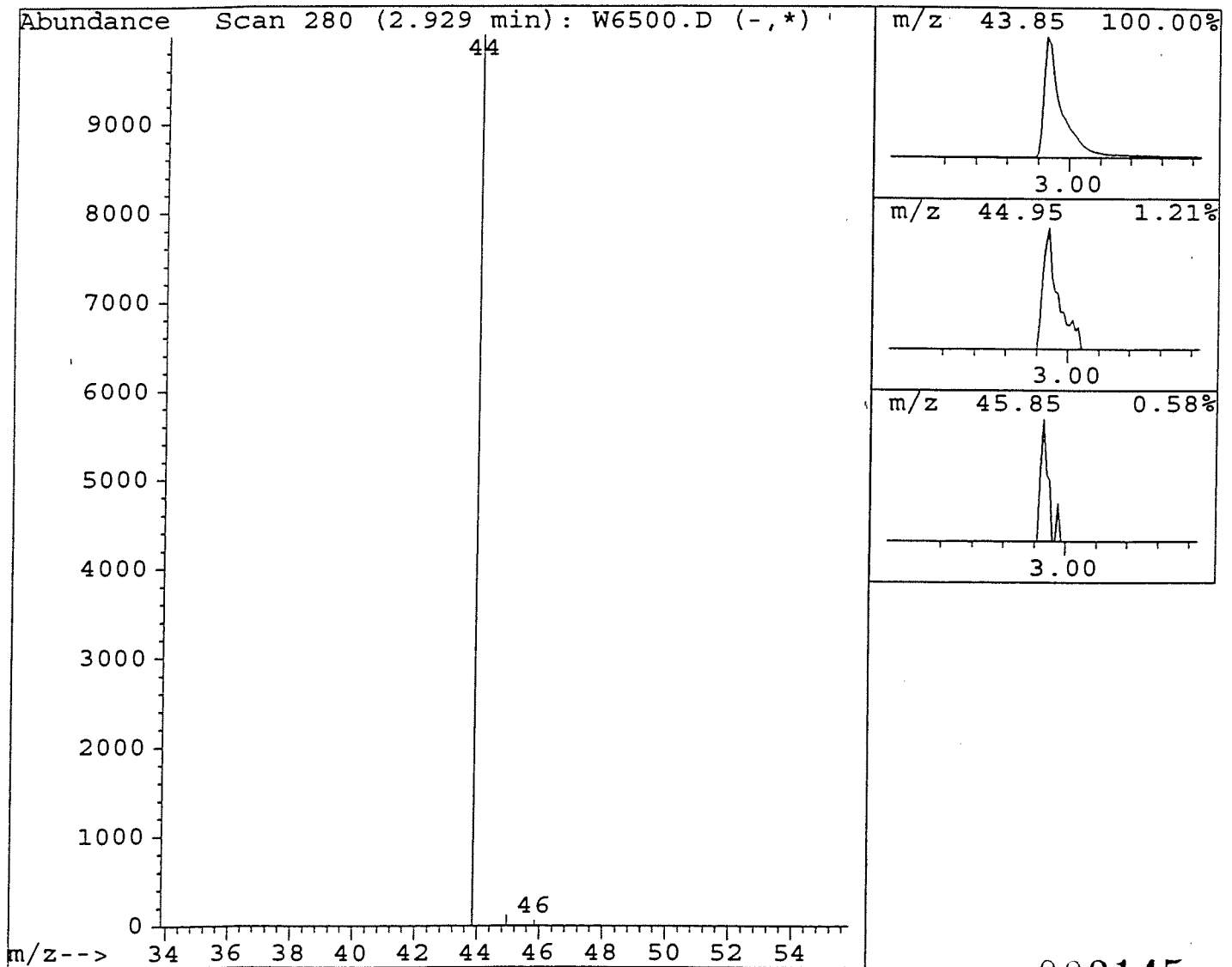
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6500.D
Acq Time : 18 Jul 96 12:54 am
Sample : G9607215-4(4B)/B#96421
Misc : 25ML/GW-4/ALLIED SIGNAL

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.93	7.84 ug/l	408648	Fluorobenzene	11.09	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 No Hits From C:\DATABASE\NBS75K.L			0	000000-00-0	0



002145

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6501.D

Acq Time : 18 Jul 96 1:33 am

Sample : G9607215-5(4B)/B#96421 9602

Misc : 25ML/GW-4/ALLIED SIGNAL / Ba'lor BK

Quant Time: Jul 18 2:06 1996

Operator: DEBBIE

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Last Update : Tue Jul 16 10:03:38 1996

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Mi
1) Fluorobenzene	11.10	96	221871	10.00	ug/l	-0.0
System Monitoring Compounds						%Recover
45) 1,2-Dichlorobenzene-d4	24.79	150	128946	10.10	ug/l	100.9
47) Bromofluorobenzene	21.34	95	121746	10.11	ug/l	101.1
Target Compounds						Qvalu
12) Methylene Chloride	6.51	84	739	0.23	ug/l	8
21) 1,2-Dichloroethane	11.12	62	2870	0.60	ug/l #	4
25) Trichloroethene	11.98	130	1422	0.16	ug/l #	5
50) 1,2,3-Trichloropropane	21.35	75	59060	24.24	ug/l #	3
65) Naphthalene	28.61	128	1412	0.16	ug/l #	8

BATCH#

DATE

ANALYST

REVIEWED & APPROVED

BY

DATE

7-19-96

002146

(#) = qualifier out of range (m) = manual integration

W6501.D 524JLS.M

Thu Jul 18 02:06:39 1996

VOA3

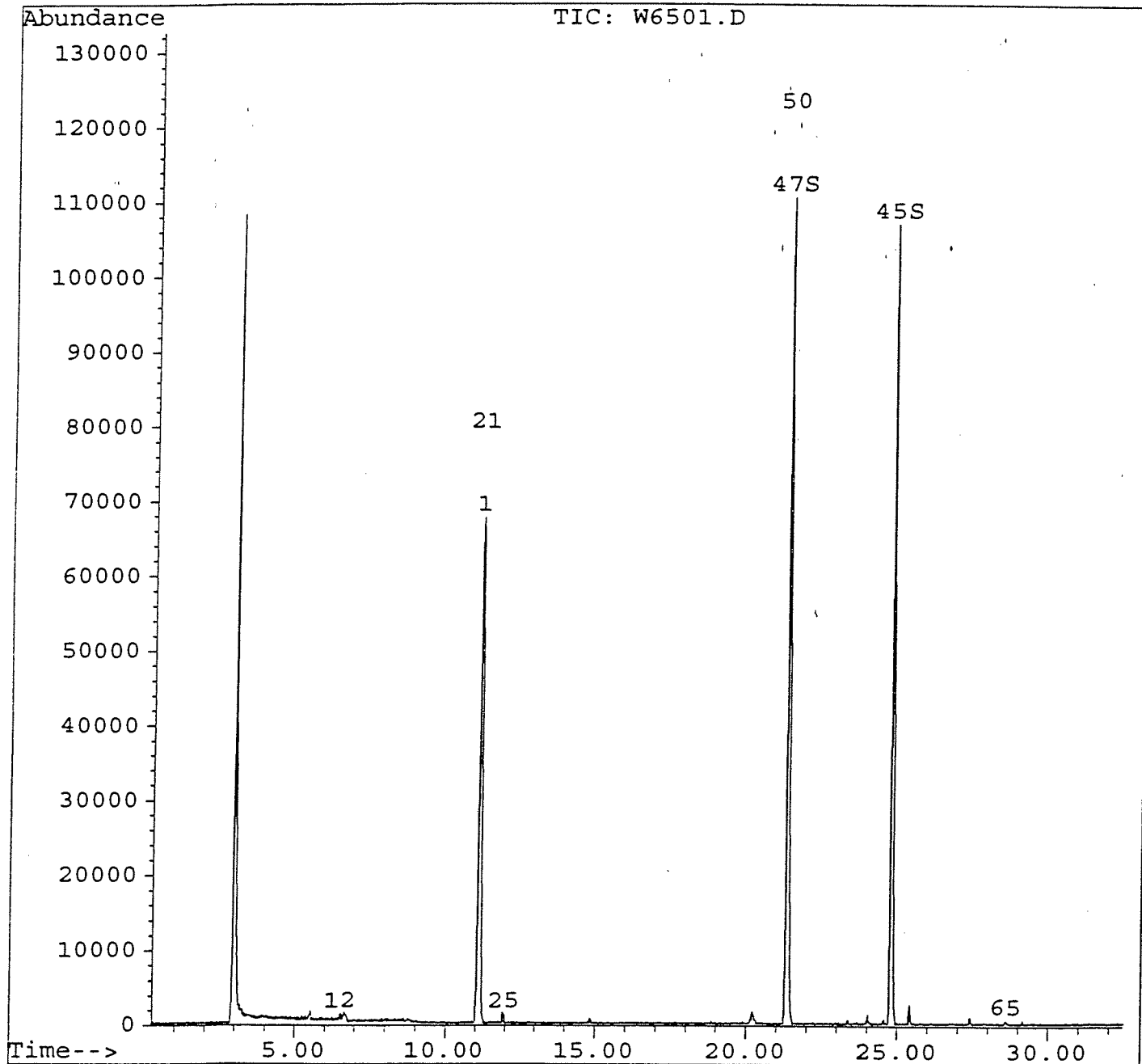
Page 1

Quantitation Report

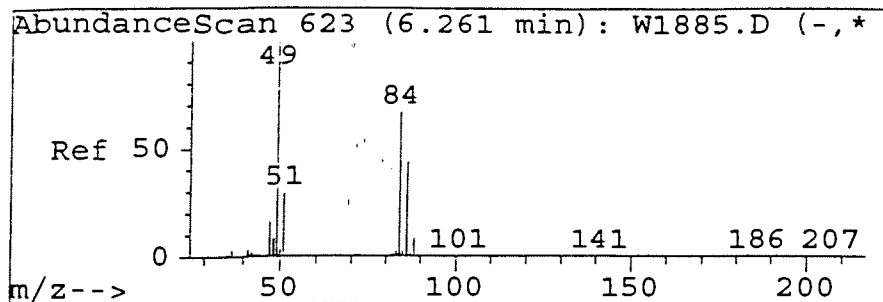
Data File : C:\HPCHEM\1\DATA\JUL17\W6501.D
Acq Time : 18 Jul 96 1:33 am
Sample : G9607215-5(4B)/B#96421
Misc : 25ML/GW-4/ALLIED SIGNAL
Quant Time: Jul 18 2:06 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

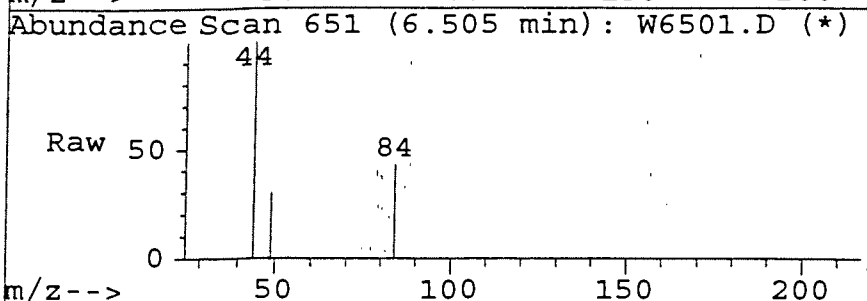


002147

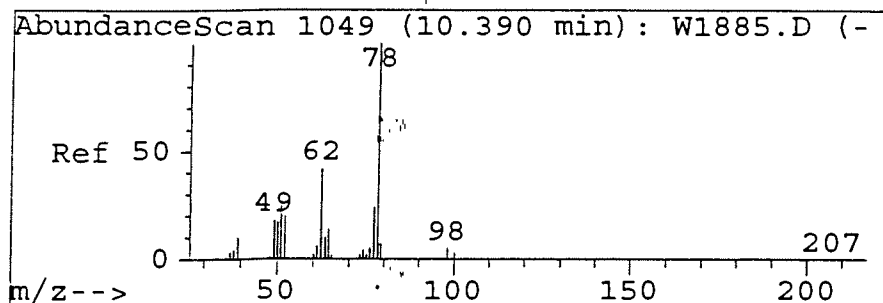
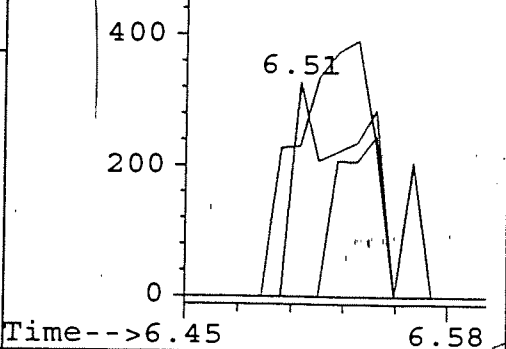
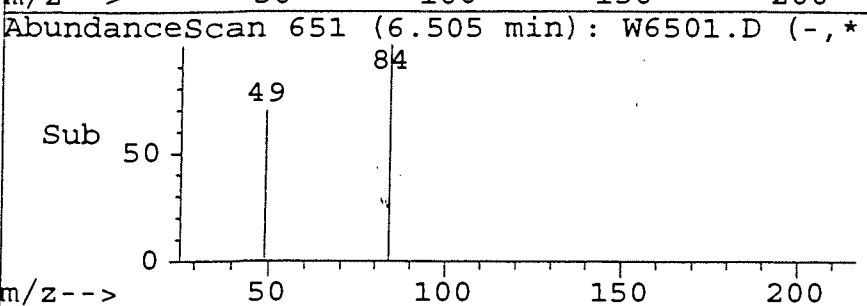


#12
Methylene Chloride
Concen: 0.23 ug/l
RT: 6.51 min Scan# 651
Delta R.T. - -0.09 min
Lab File: W6501.D
Acq: 18 Jul 96 1:33 am

Tgt Ion:84	Resp:	739
Ion Ratio	Lower	Upper
84	100	
49	156.2	41.6 221.6
86	51.7	0.0 157.2
0	0.0	0.0 0.0

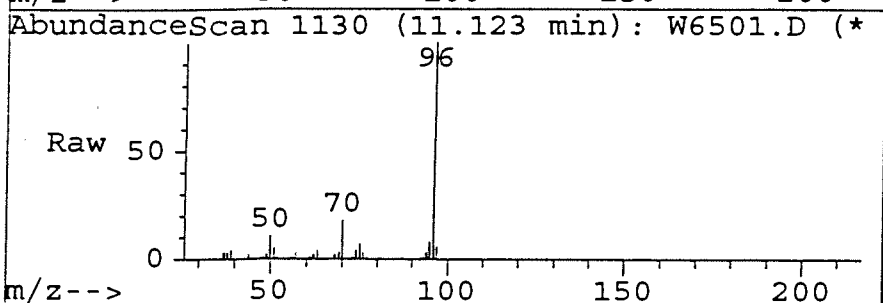


Abundance	Ion	84.00 (83.
	Ion	49.00 (48.
	Ion	86.00 (85.

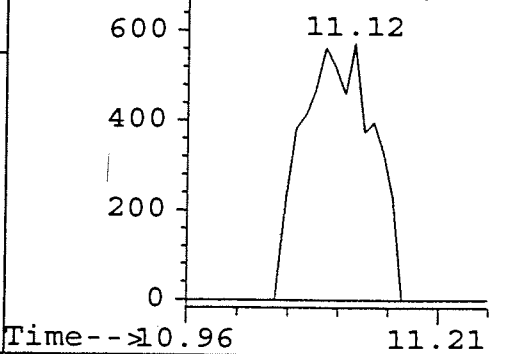
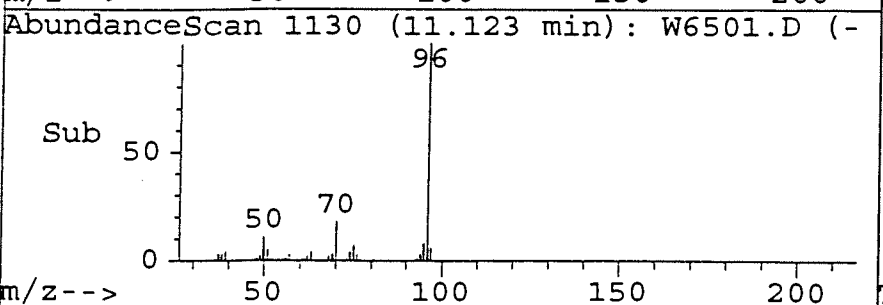


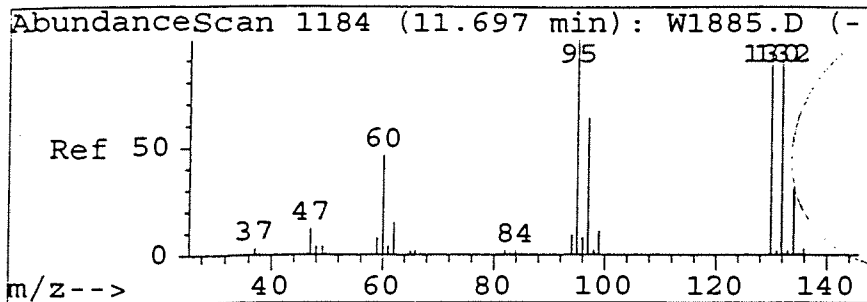
#21
1,2-Dichloroethane
Concen: 0.60 ug/l
RT: 11.12 min Scan# 1130
Delta R.T. 0.28 min
Lab File: W6501.D
Acq: 18 Jul 96 1:33 am

Tgt Ion:62	Resp:	2870
Ion Ratio	Lower	Upper
62	100	
64	0.0	0.0 81.7
98	0.0	0.0 53.9
0	0.0	0.0 0.0



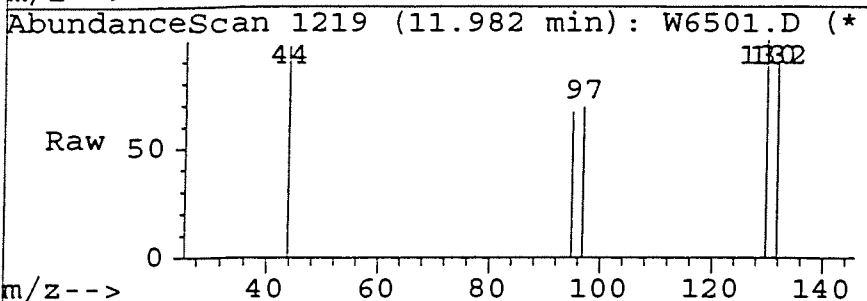
Abundance	Ion	62.00 (61.
	Ion	64.00 (63.
	Ion	98.00 (97.



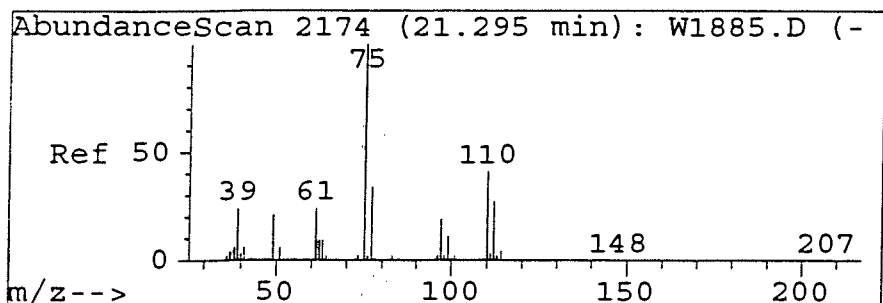
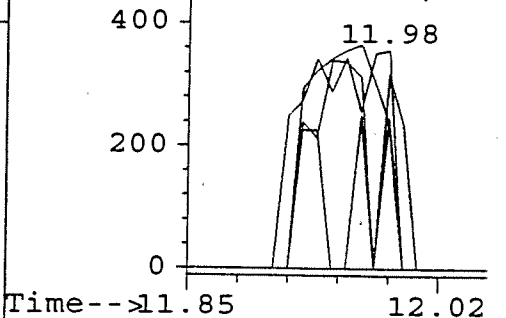
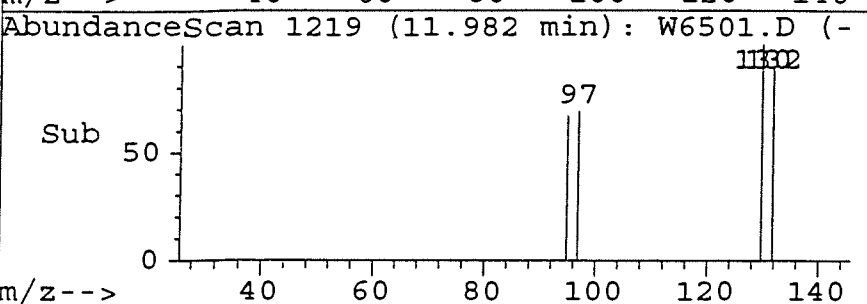


#25
 Trichloroethene
 Concen: 0.16 ug/l
 RT: 11.98 min Scan# 1219
 Delta R.T. -0.17 min
 Lab File: W6501.D
 Acq: 18 Jul 96 1:33 am

Tgt Ion:130	Resp:	1422
Ion Ratio	Lower	Upper
130	100	
132	22.4	46.4 146.4#
95	90.4	54.1 154.1
97	20.1	16.2 116.2

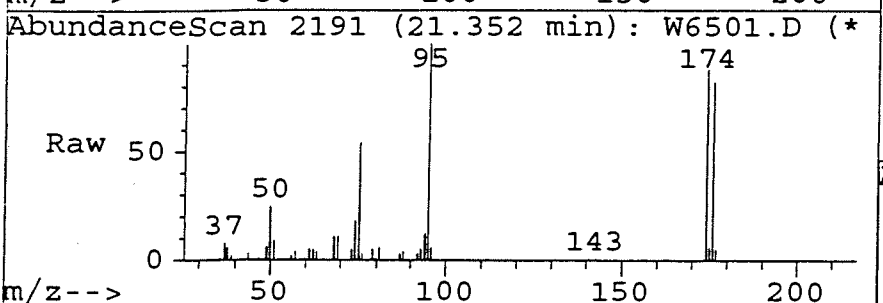


Abundance	Ion 130.00	(129
	Ion 132.00	(131
	Ion 95.00	(94.
	Ion 97.00	(96.

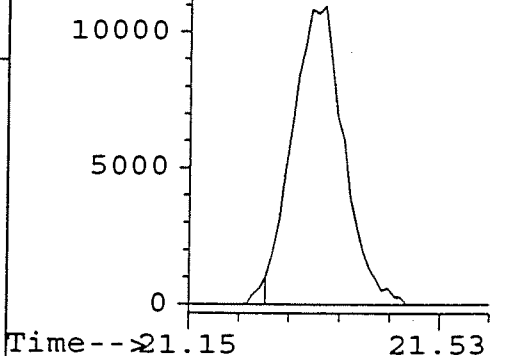
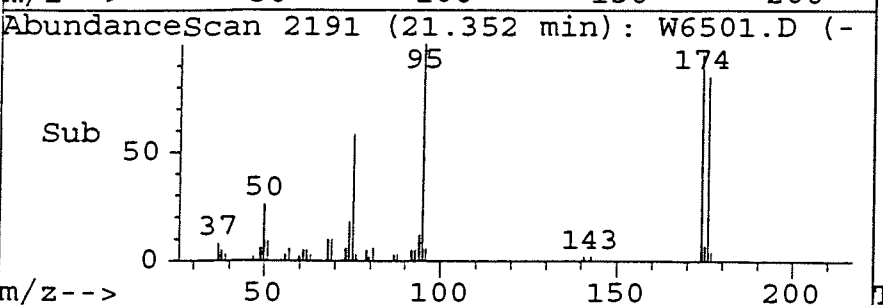


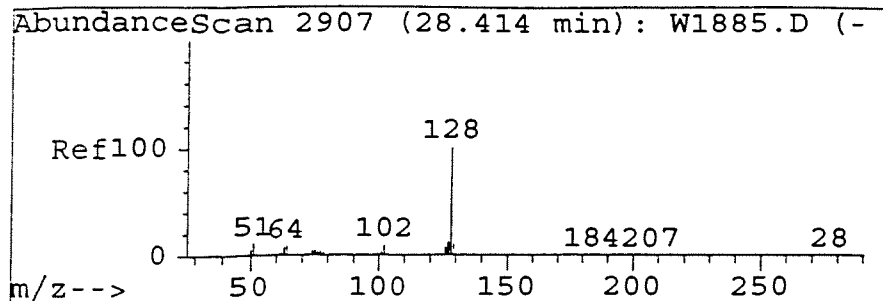
#50
 1,2,3-Trichloropropane
 Concen: 24.24 ug/l
 RT: 21.35 min Scan# 2191
 Delta R.T. -0.18 min
 Lab File: W6501.D
 Acq: 18 Jul 96 1:33 am

Tgt Ion:75	Resp:	59060
Ion Ratio	Lower	Upper
75	100	
110	0.0	0.0 86.0
0	0.0	0.0 0.0
0	0.0	0.0 0.0

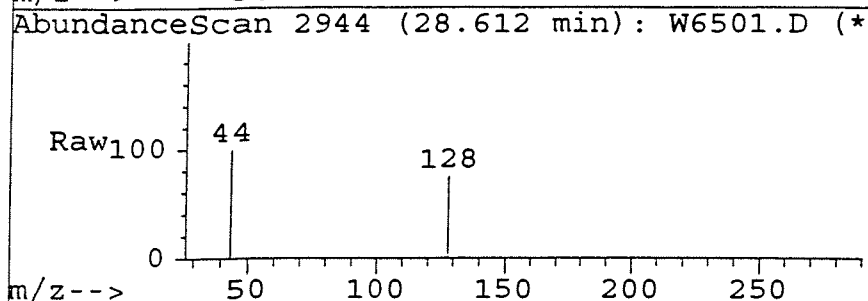


Abundance	Ion 75.00	(74.
	Ion 110.00	(109
		21.35

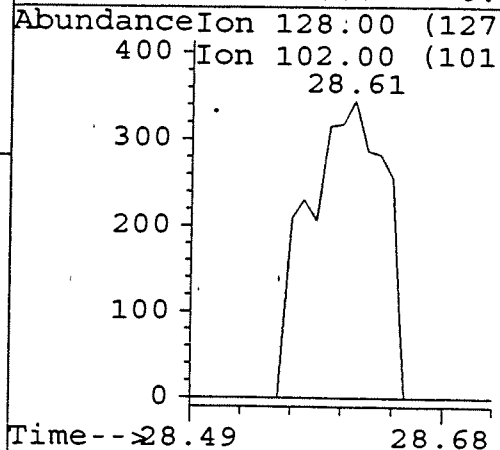
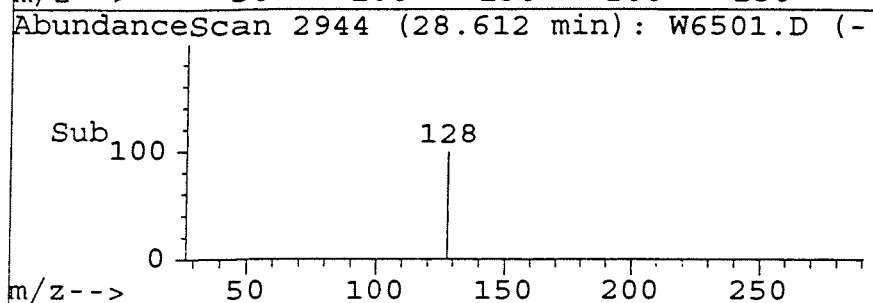




#65
 Naphthalene
 Concen: 0.16 ug/l
 RT: 28.61 min Scan# 2944
 Delta R.T. -0.21 min
 Lab File: W6501.D
 Acq: 18 Jul 96 1:33 am



Tgt Ion	Ratio	Lower	Upper
128	100		
102	0.0	0.0	81.5
0	0.0	0.0	0.0
0	0.0	0.0	0.0



Library Search Compound Report

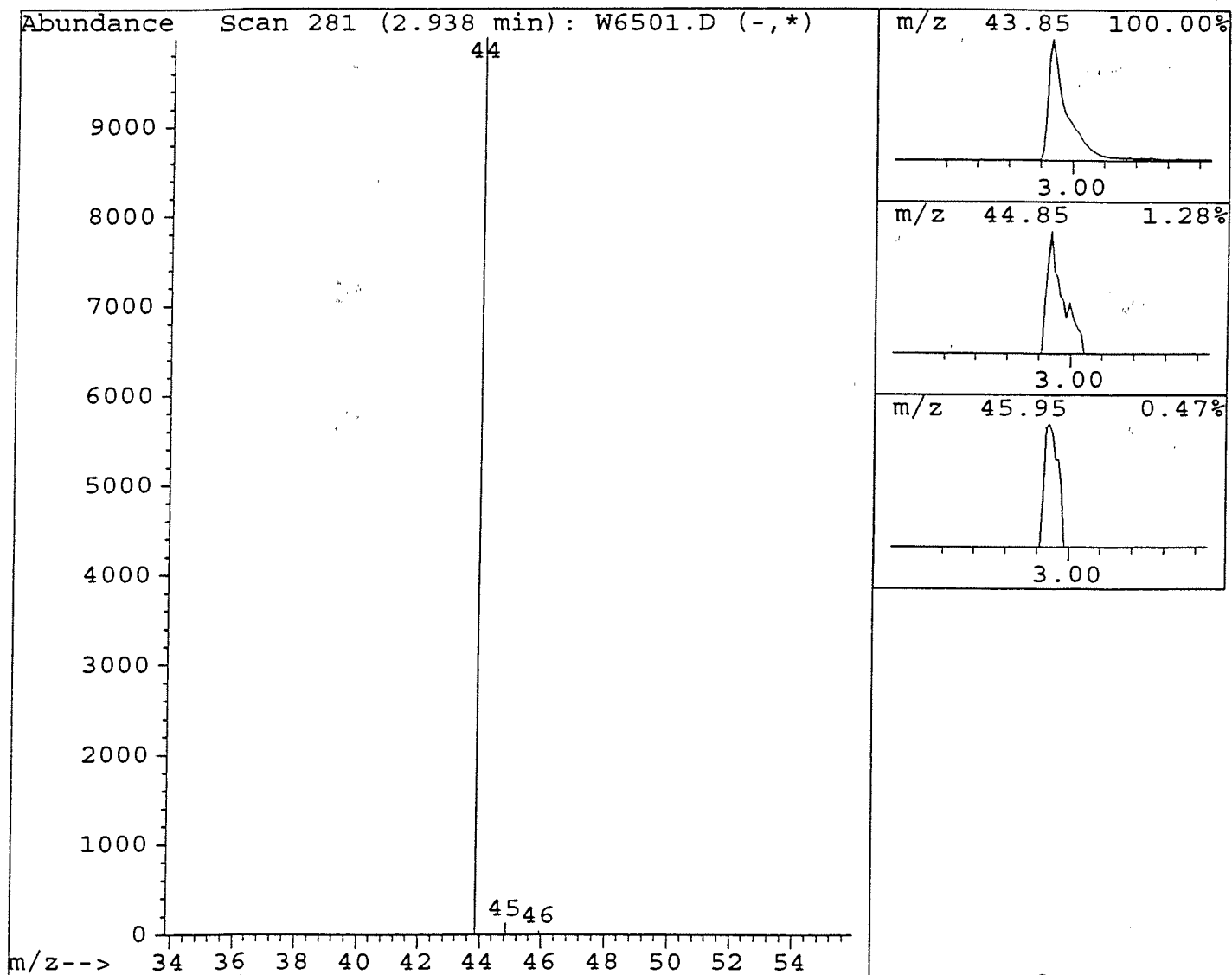
Data File : C:\HPCHEM\1\DATA\JUL17\W6501.D
Acq Time : 18 Jul 96 1:33 am
Sample : G9607215-5(4B)/B#96421
Misc : 25ML/GW-4/ALLIED SIGNAL

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.94	9.01 ug/l	395184	Fluorobenzene	11.10

Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L		0	000000-00-0	0



002151

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6502.D
 Acq Time : 18 Jul 96 2:12 am
 Sample : G9607215-6(4B)/B#96422
 Misc : 25ML/GW-4/ALLIED SIGNAL
 Quant Time: Jul 18 2:45 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Mi)
1) Fluorobenzene	11.11	96	227524	10.00	ug/l	0.00
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.79	150	139359	10.64	ug/l	%Recovery 106.4
47) Bromofluorobenzene	21.34	95	126333	10.23	ug/l	102.3
Target Compounds						
8) Trichlorofluoromethane	4.87	101	16578	1.50	ug/l	Qvalue 98
11) Freon 113	5.54	101	3001	0.31	ug/l	#.31 63
12) Methylene Chloride	6.52	84	2507	0.78	ug/l	0.78 8
21) 1,2-Dichloroethane	11.10	62	2733	0.55	ug/l	# 48
50) 1,2,3-Trichloropropane	21.34	75	60265	24.12	ug/l	# 39

Resun to ck TCF Me, not shown in 1st run

TCF Methane confirm

BATCH # 96422
 DATE 07/18/96
 ANALYST mm

REVIEWED & APPROVED
 BY JSC DATE 7/21/96

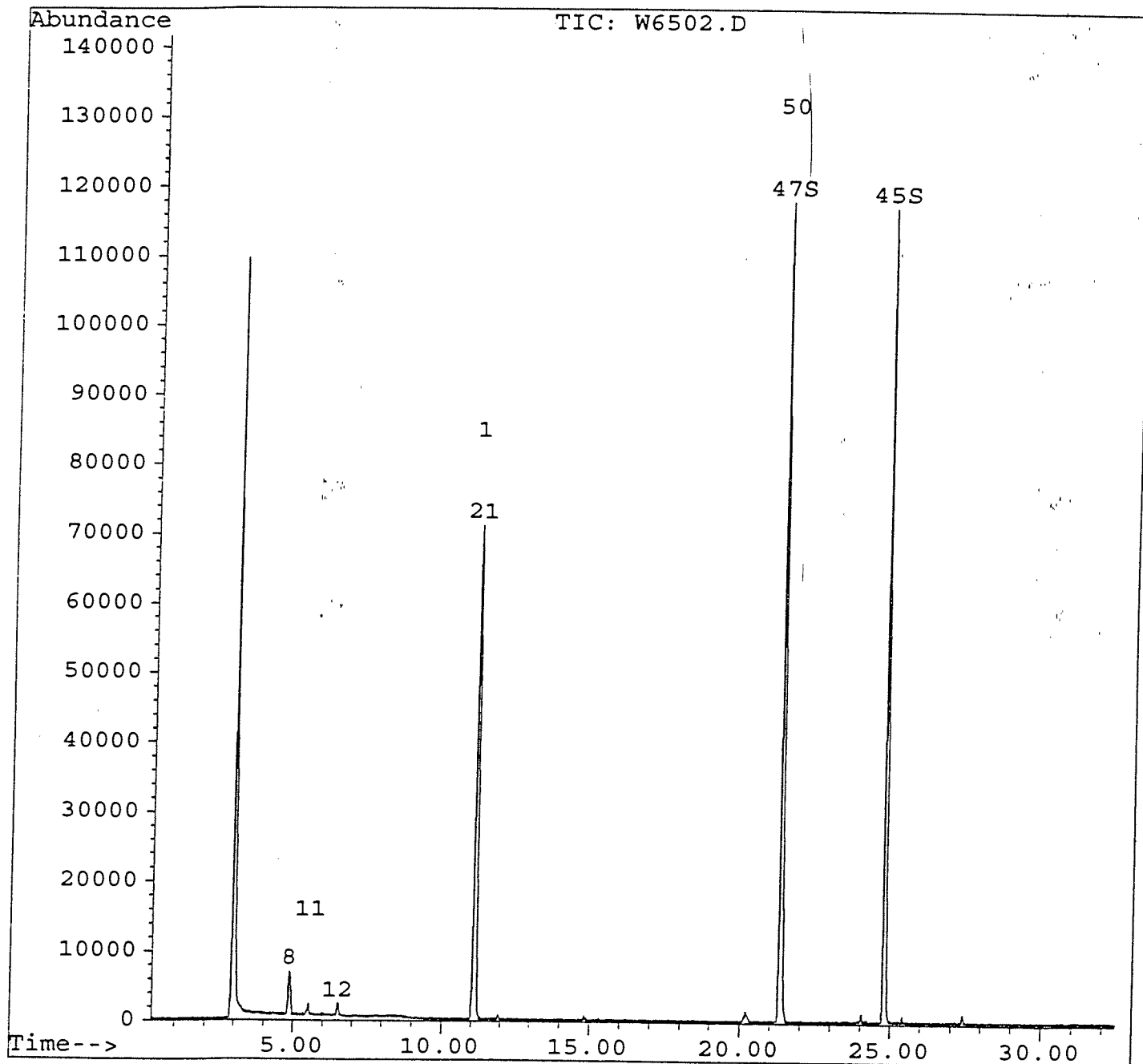
002152

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6502.D
Acq Time : 18 Jul 96 2:12 am
Sample : G9607215-6(4B)/B#96421
Misc : 25ML/GW-4/ALLIED SIGNAL
Quant Time: Jul 18 2:45 1996

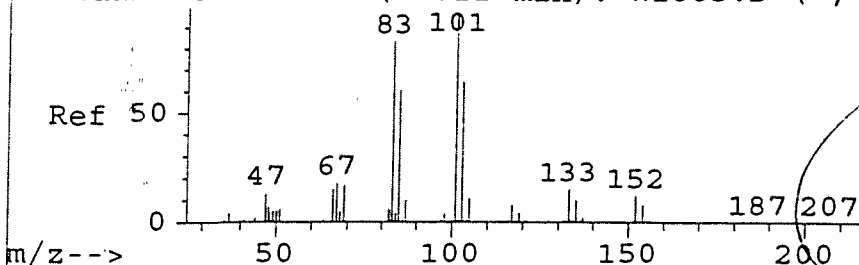
Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration



002153

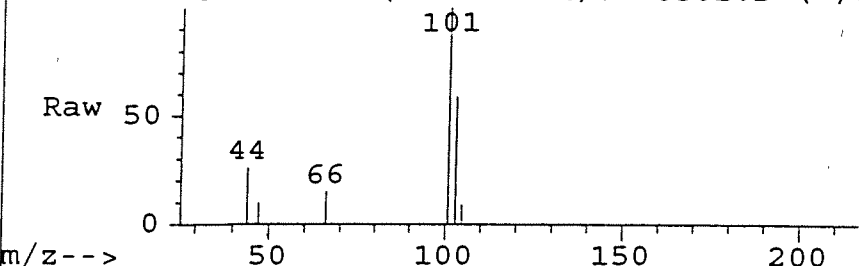
AbundanceScan 453 (4.611 min): W1885.D (-,*



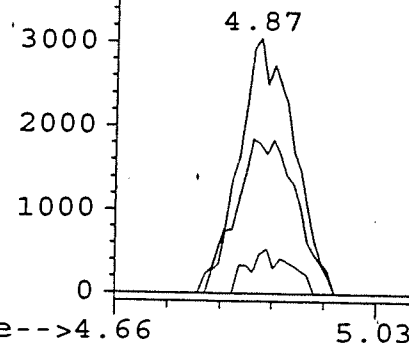
#8
Trichlorofluoromethane
Concen: 1.50 ug/l
RT: 4.87 min Scan# 481
Delta R.T. -0.00 min
Lab File: W6502.D
Acq: 18 Jul 96 2:12 am

Tgt Ion	Ratio	Resp	Lower	Upper
101	100	16578		
103	66.1	15.6	115.6	
66	13.5	0.0	65.8	
0	0.0	0.0	0.0	

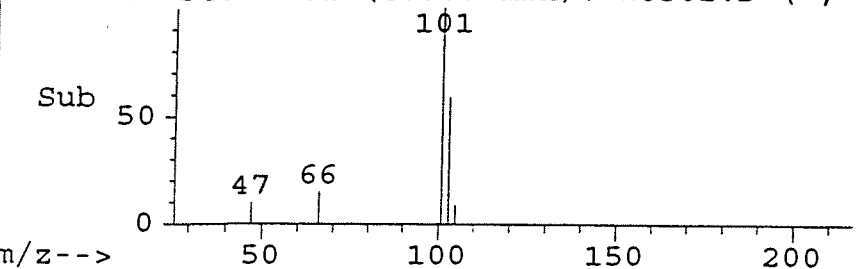
Abundance Scan 481 (4.866 min): W6502.D (*)



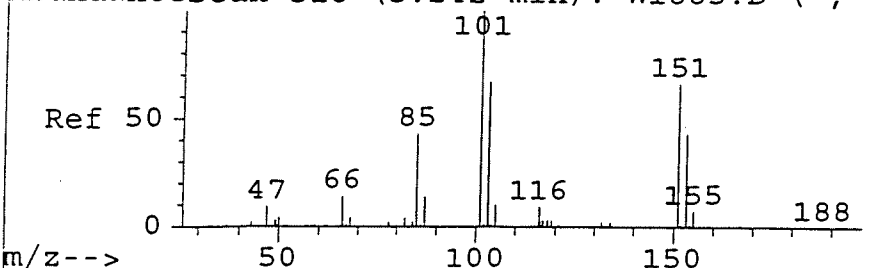
Abundance	Ion	Ratio	Resp
101.00	101	100	100
103.00	103	102	102
66.00	66	65	65



AbundanceScan 481 (4.866 min): W6502.D (-,*



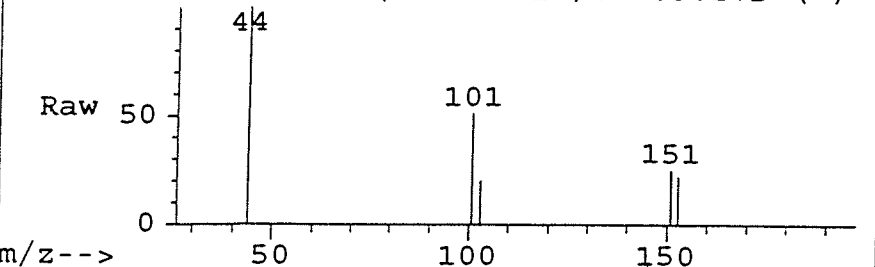
AbundanceScan 518 (5.242 min): W1885.D (-,*



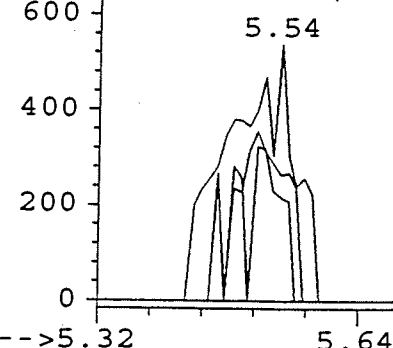
#11
Freon 113
Concen: 0.31 ug/l
RT: 5.54 min Scan# 551
Delta R.T. 0.00 min
Lab File: W6502.D
Acq: 18 Jul 96 2:12 am

Tgt Ion	Ratio	Resp	Lower	Upper
101	100	3001		
151	48.3	45.9	85.9	
103	25.0	46.7	86.7#	
0	0.0	0.0	0.0	

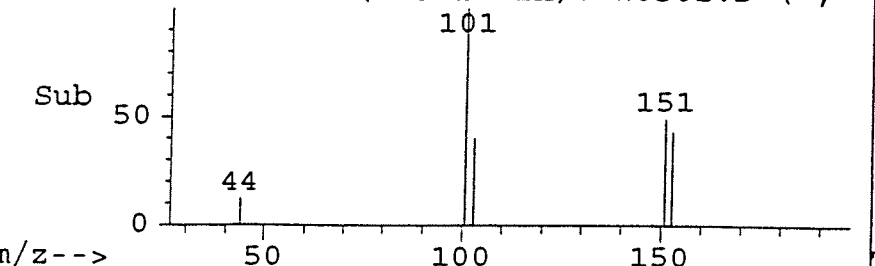
Abundance Scan 551 (5.541 min): W6502.D (*)

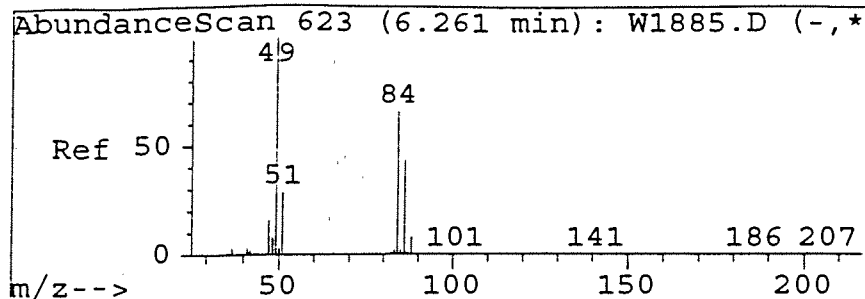


Abundance	Ion	Ratio	Resp
101.00	101	100	100
151.00	151	150	150
103.00	103	102	102



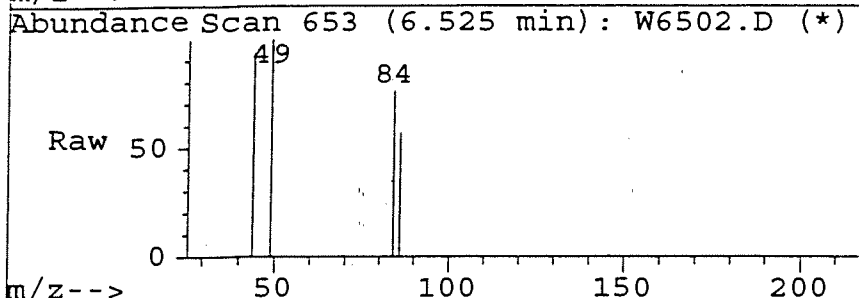
AbundanceScan 551 (5.541 min): W6502.D (-,*



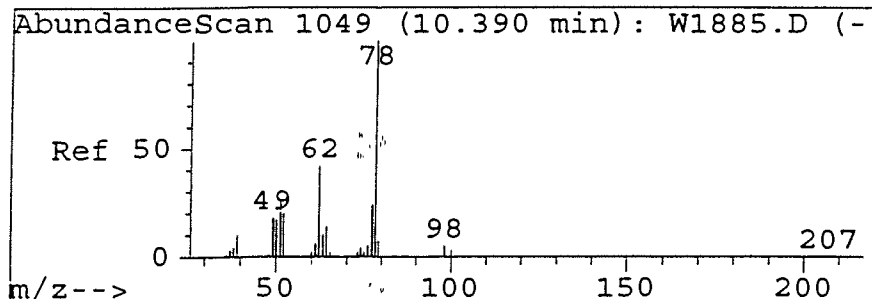
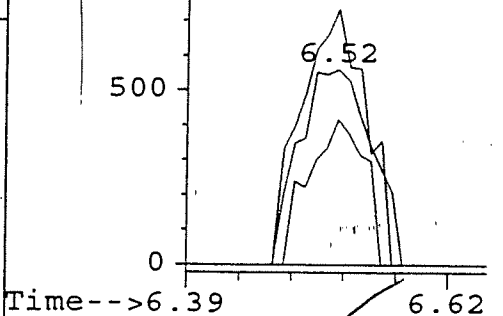
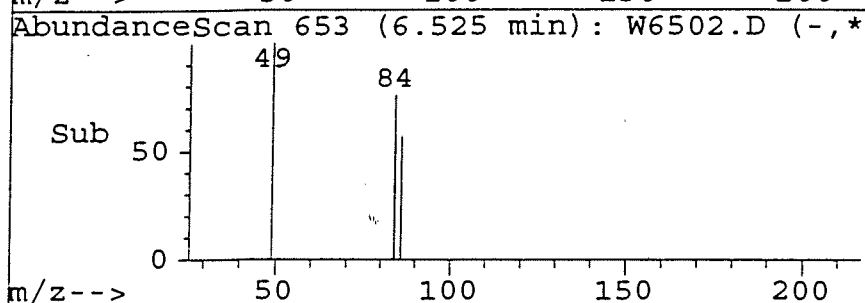


#12
Methylene Chloride
Concen: 0.78 ug/l
RT: 6.52 min Scan# 653
Delta R.T.: -0.08 min
Lab File: W6502.D
Acq: 18 Jul 96 2:12 am

Tgt Ion:	84	Resp:	2507
Ion	Ratio	Lower	Upper
84	100		
49	116.0	41.6	221.6
86	57.6	0.0	157.2
0	0.0	0.0	0.0

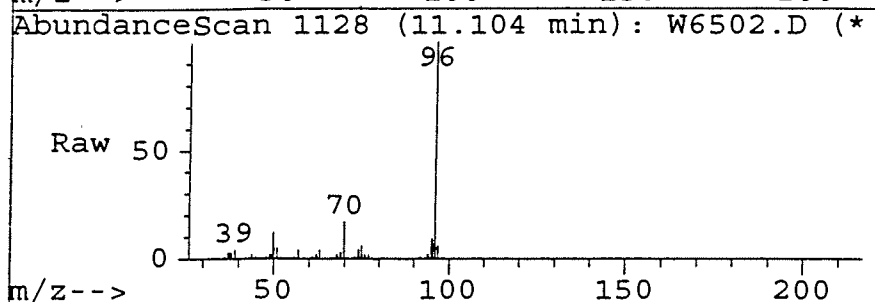


Abundance	Ion	84.00 (83.
1000	Ion	49.00 (48.
	Ion	86.00 (85.

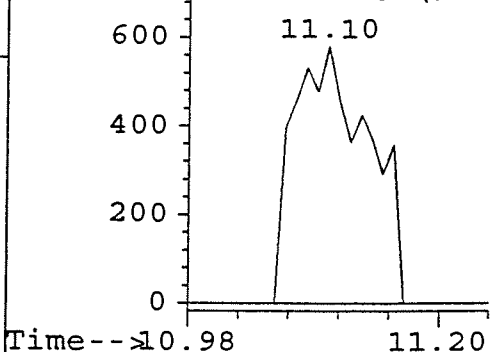
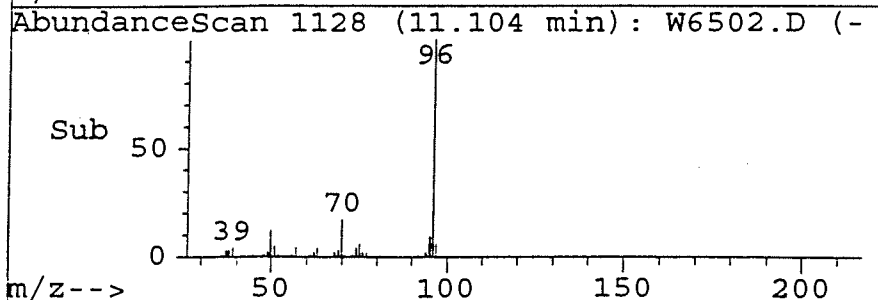


#21
1,2-Dichloroethane
Concen: 0.55 ug/l
RT: 11.10 min Scan# 1128
Delta R.T.: 0.26 min
Lab File: W6502.D
Acq: 18 Jul 96 2:12 am

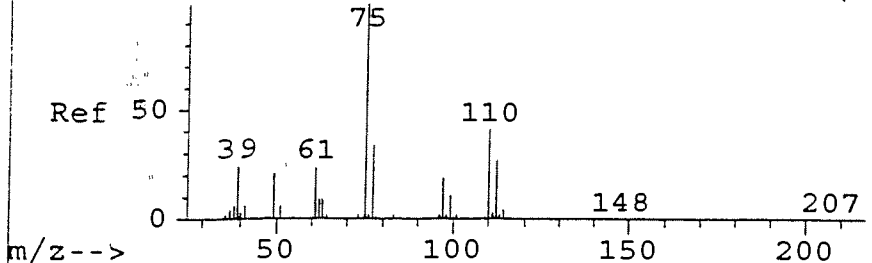
Tgt Ion:	62	Resp:	2733
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0



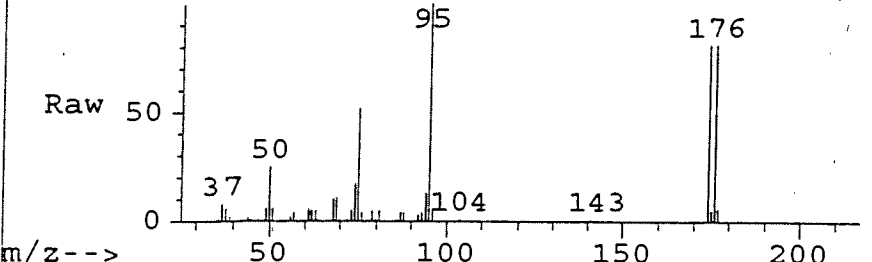
Abundance	Ion	62.00 (61.
800	Ion	64.00 (63.
	Ion	98.00 (97.



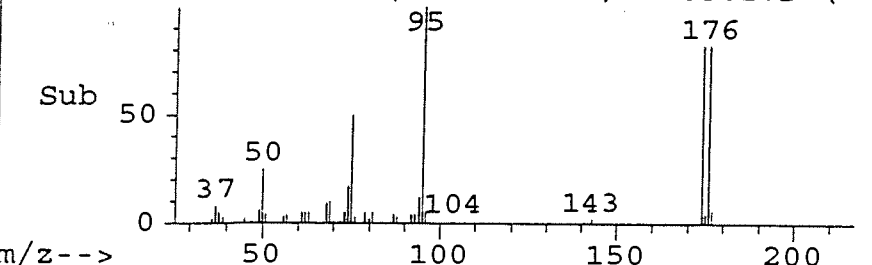
AbundanceScan 2174 (21.295 min): W1885.D (-



AbundanceScan 2190 (21.343 min): W6502.D (*)



AbundanceScan 2190 (21.343 min): W6502.D (-



#50

1,2,3-Trichloropropane

Concen: 24.12 ug/l

RT: 21.34 min Scan# 2190

Delta R.T: -0.19 min

Lab File: W6502.D

Acq: 18 Jul 96 2:12 am

Tgt Ion: 75 Resp: 60265

Ion Ratio Lower Upper

75 100

110 0.0 0.0 86.0

0 0.0 0.0 0.0

0 0.0 0.0 0.0

AbundanceIon 75.00 (74.

Ion 110.00 (109

21.34

10000

5000

0

Time--21.17 21.55

Library Search Compound Report

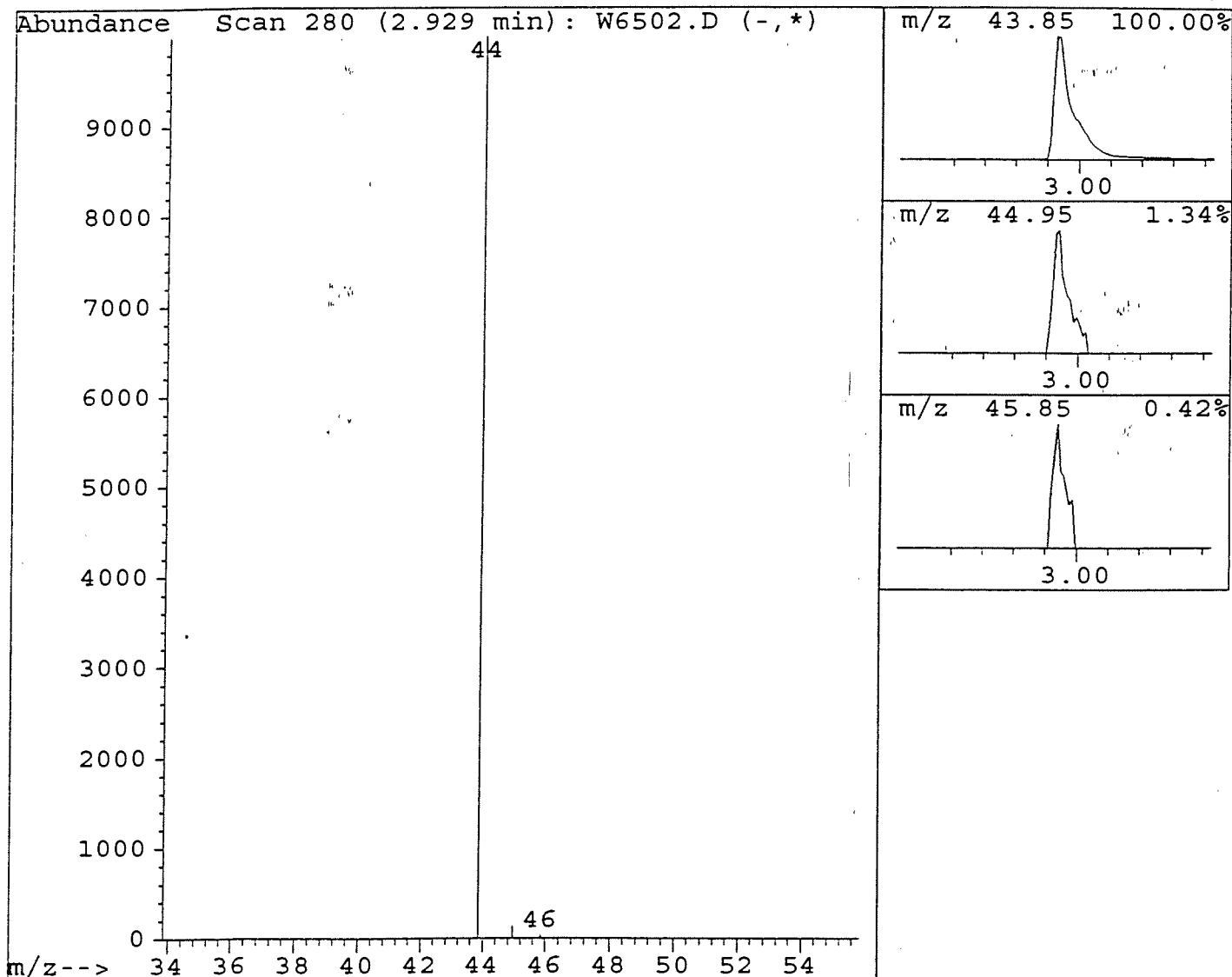
Data File : C:\HPCHEM\1\DATA\JUL17\W6502.D
Acq Time : 18 Jul 96 2:12 am
Sample : G9607215-6(4B)/B#96421
Misc : 25ML/GW-4/ALLIED SIGNAL

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.93	9.45 ug/l	425786	Fluorobenzene	11.11

Hit#	of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits	From C:\DATABASE\NBS75K.L		0	000000-00-0	0



002157

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6504.D

Acq Time : 18 Jul 96 3:31 am

Sample : G9607191-3 (4B)/B#96421

Misc : DF=5/0.5ML:25ML/GW-4/ALLIED SIGNAL /GW-3

Quant Time: Jul 18 4:04 1996

Operator: DEBBIE

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Last Update : Tue Jul 16 10:03:38 1996

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Mir
1) Fluorobenzene	11.11	96	226137	10.00	ug/l	0.00
System Monitoring Compounds				%Recovery		
45) 1,2-Dichlorobenzene-d4	24.79	150	131572	10.11	ug/l	101.10
47) Bromofluorobenzene	21.33	95	121887	9.93	ug/l	99.34
Target Compounds				Qvalue		
10) 1,1-Dichloroethene	5.79	96	4768	1.08	ug/l	97
11) Freon 113	5.50	101	1830	0.19	ug/l #	80
12) Methylene Chloride	6.52	84	4564	1.42	ug/l	91
14) 1,1-Dichloroethane	7.69	63	2905	0.45	ug/l	60
19) Chloroform	9.08	83	2826	0.26	ug/l	53
21) 1,2-Dichloroethane	11.10	62	2701	0.55	ug/l #	48
22) 1,1,1-Trichloroethane	9.84	97	6284	0.49	ug/l #	91
23) Carbon Tetrachloride	10.35	117	6434	0.53	ug/l	91
25) Trichloroethene	11.94	130	168003	18.13	ug/l	95
35) Toluene	14.85	92	16222	1.25	ug/l	98
37) Tetrachloroethene	16.51	164	3550	0.37	ug/l	92
50) 1,2,3-Trichloropropane	21.33	75	55659	22.42	ug/l #	39

Report TCE ONLY

BATCH # 96422
DATE 07/18/96
ANALYSTREVIEWED & APPROVED
BY DATE

002158

(#) = qualifier out of range (m) = manual integration

W6504.D 524JLS.M

Thu Jul 18 04:04:37 1996

VOA3

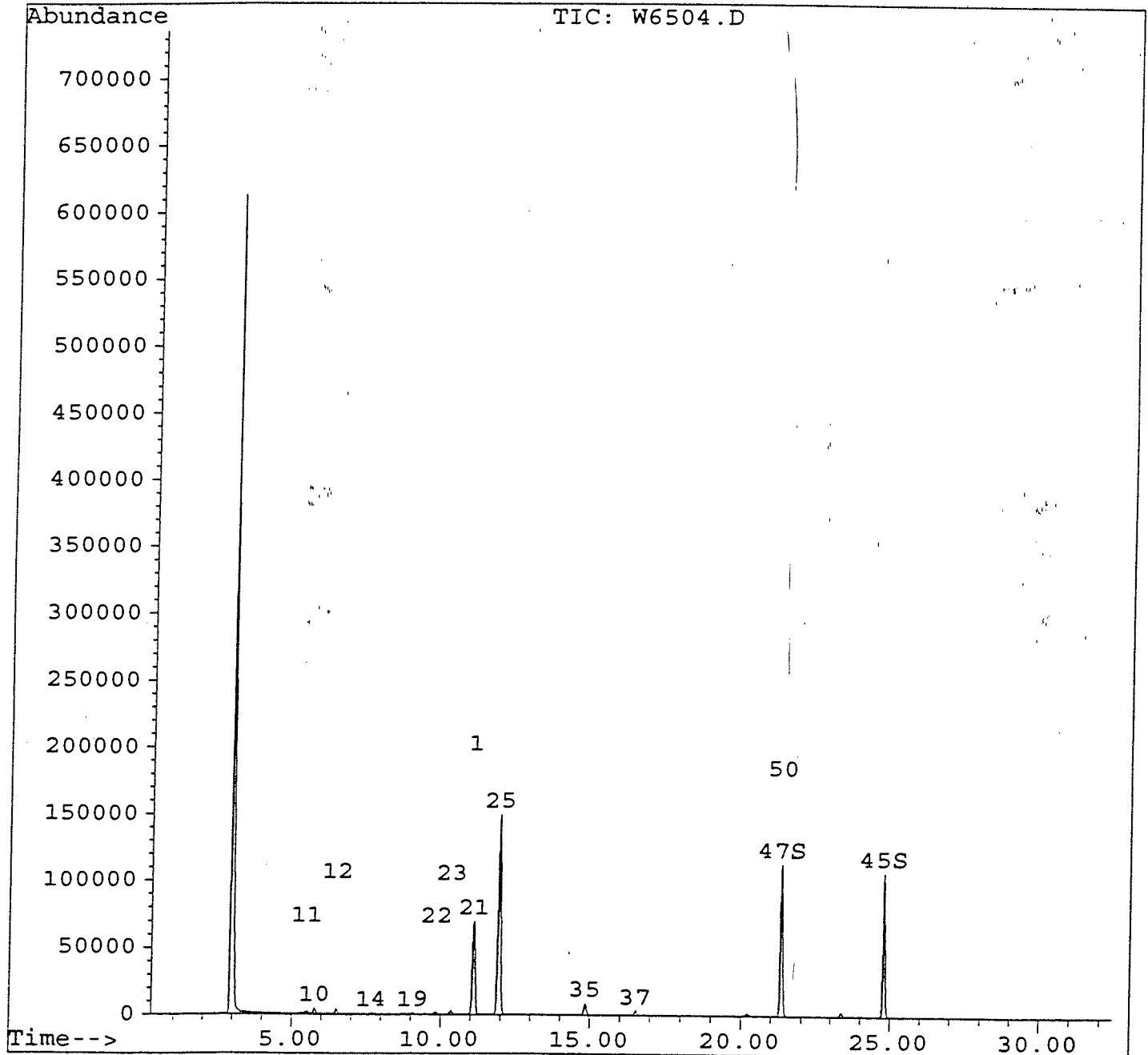
Page 1

Quantitation Report

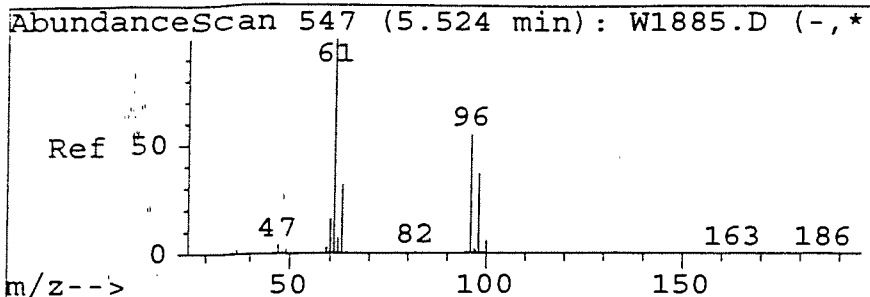
Data File : C:\HPCHEM\1\DATA\JUL17\W6504.D
Acq Time : 18 Jul 96 3:31 am
Sample : G9607191-3(4B)/B#96421
Misc : DF=5/0.5ML:25ML/GW-4/ALLIED SIGNAL
Quant Time: Jul 18 4:04 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

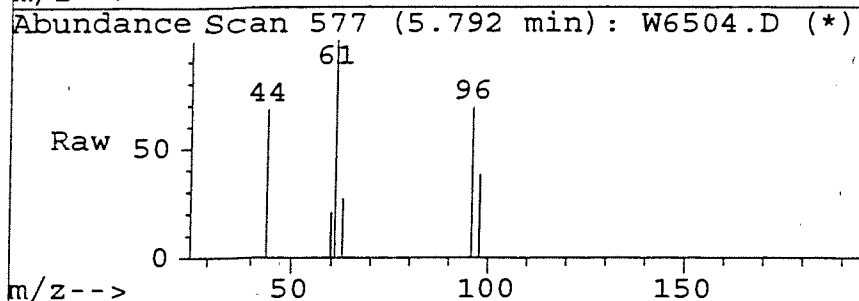


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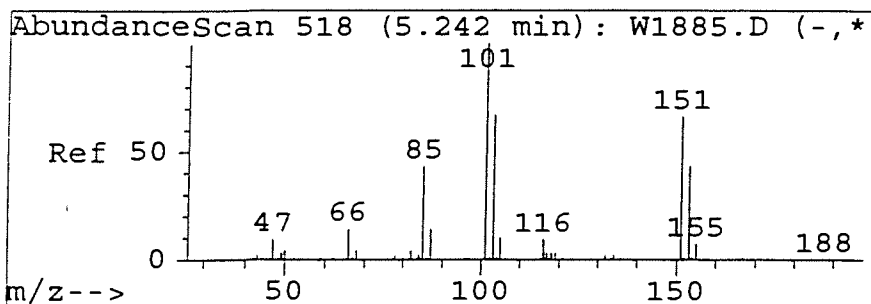
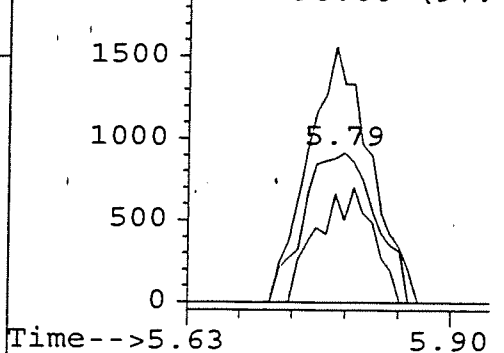
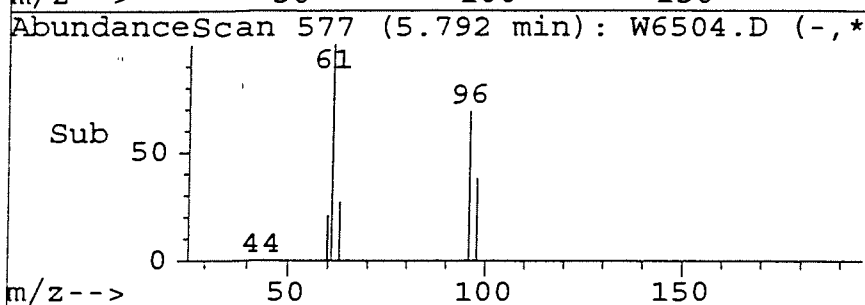


#10
1,1-Dichloroethene
Concen: 1.08 ug/l
RT: 5.79 min Scan# 577
Delta R.T. - -0.04 min
Lab File: W6504.D
Acq: 18 Jul 96 3:31 am

Tgt Ion:96	Resp:	4768
Ion Ratio	Lower	Upper
96 100		
61 148.4	102.5	202.5
98 59.5	12.4	112.4
0 0.0	0.0	0.0

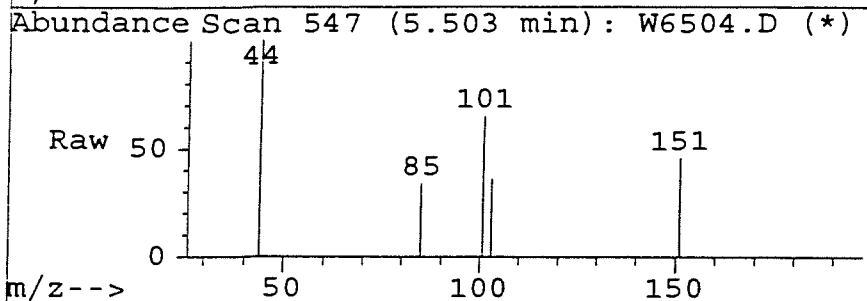


AbundanceIon	96:00 (95.
2000 Ion	61:00 (60.
Ion	98:00 (97.

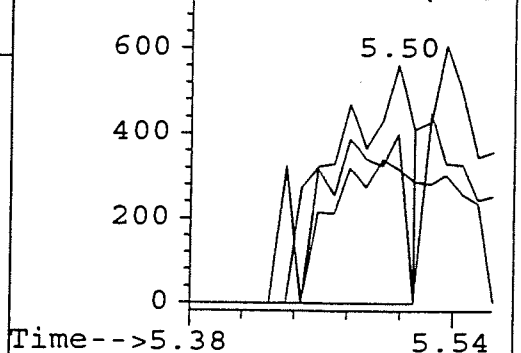
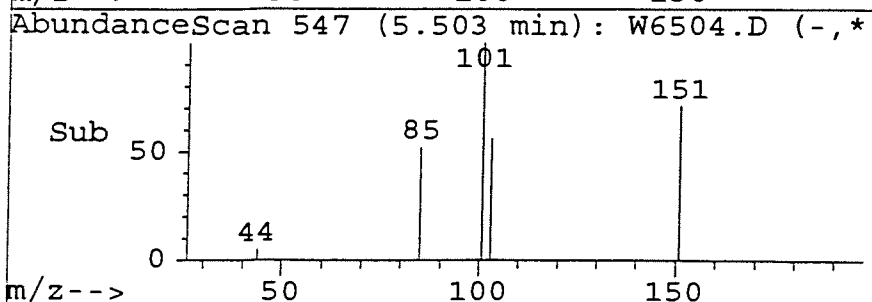


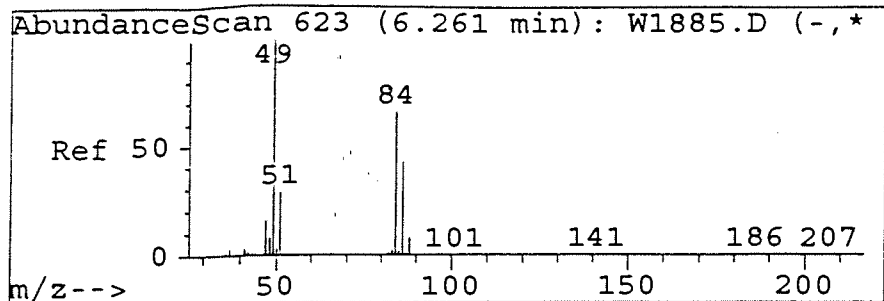
#11
Freon 113
Concen: 0.19 ug/l
RT: 5.50 min Scan# 547
Delta R.T. -0.04 min
Lab File: W6504.D
Acq: 18 Jul 96 3:31 am

Tgt Ion:101	Resp:	1830
Ion Ratio	Lower	Upper
101 100		
151 64.0	45.9	85.9
103 96.1	46.7	86.7#
0 0.0	0.0	0.0



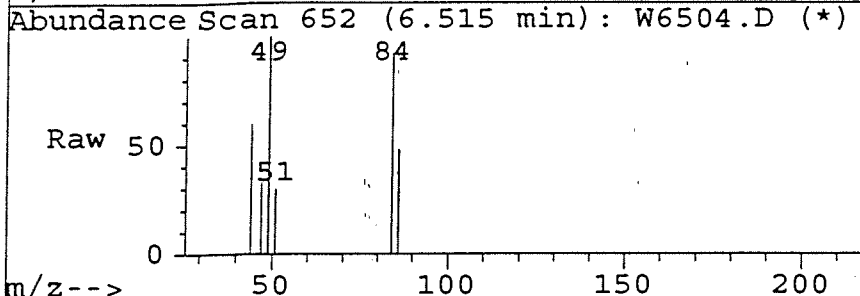
AbundanceIon	101:00 (100
800 Ion	151:00 (150
Ion	103:00 (102



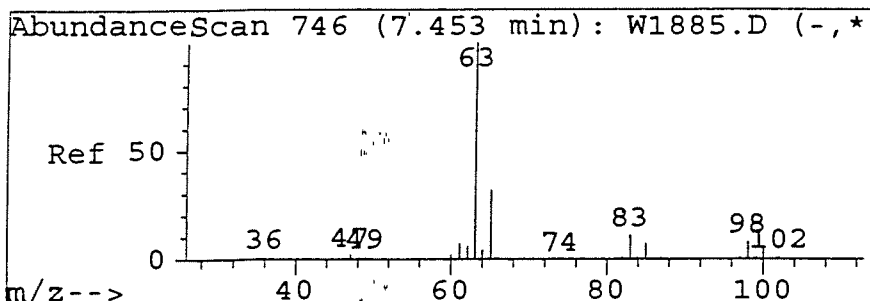
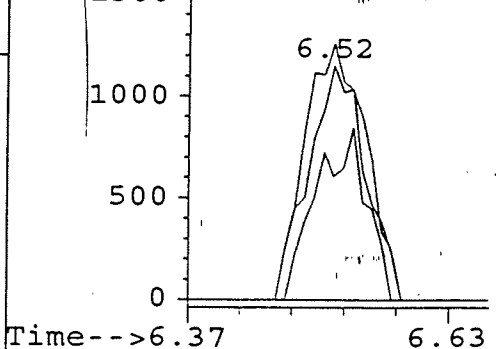


#12
Methylene Chloride
Concen: 1.42 ug/l
RT: 6.52 min Scan# 652
Delta R.T. -0.08 min
Lab File: W6504.D
Acq: 18 Jul 96 3:31 am

Tgt Ion:	84	Resp:	4564
Ion	Ratio	Lower	Upper
84	100		
49	117.7	41.6	221.6
86	65.2	0.0	157.2
0	0.0	0.0	0.0

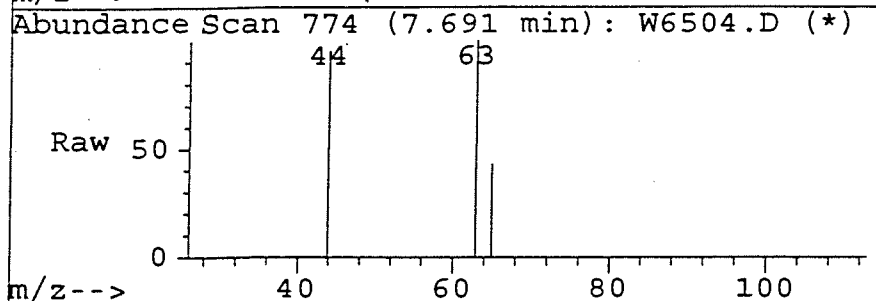


Abundance	Ion	84.00 (83.
	Ion	49.00 (48.
	Ion	86.00 (85.

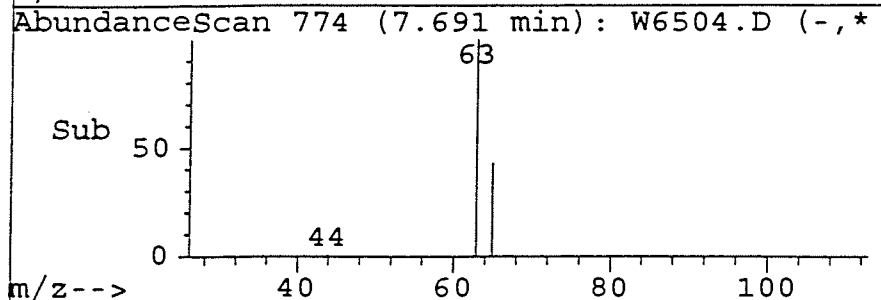
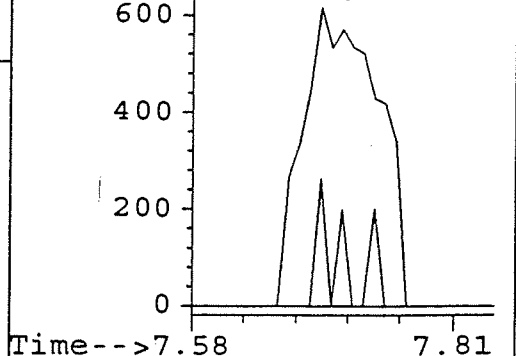


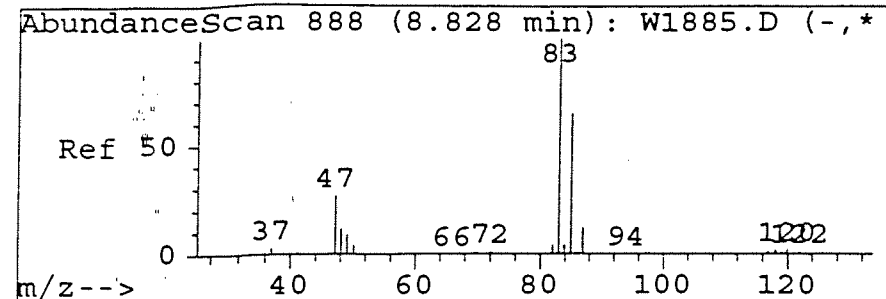
#14
1,1-Dichloroethane
Concen: 0.45 ug/l
RT: 7.69 min Scan# 774
Delta R.T. -0.16 min
Lab File: W6504.D
Acq: 18 Jul 96 3:31 am

Tgt Ion:	63	Resp:	2905
Ion	Ratio	Lower	Upper
63	100		
65	9.2	0.0	81.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0



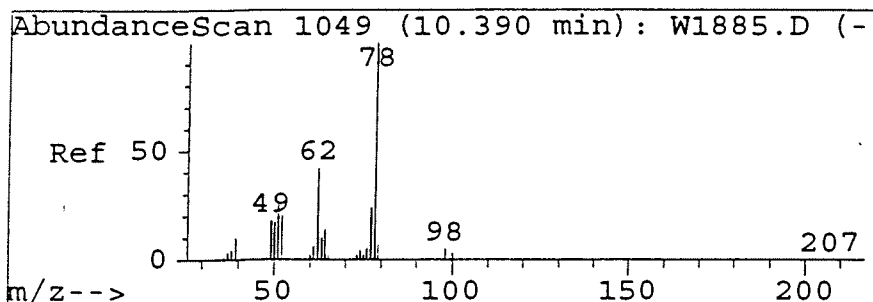
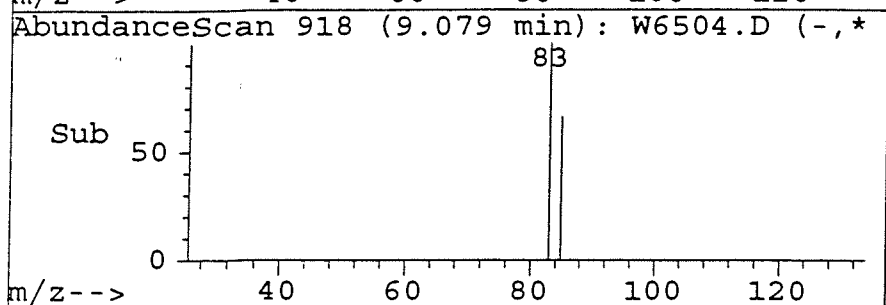
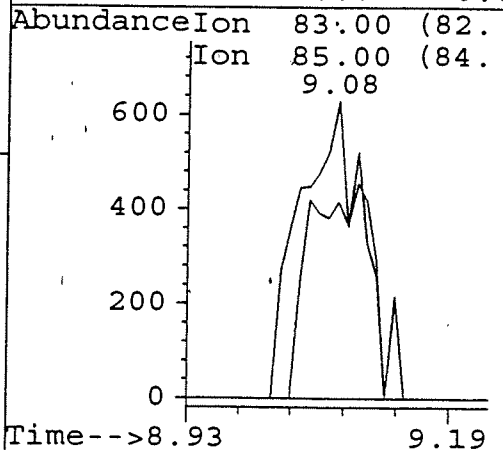
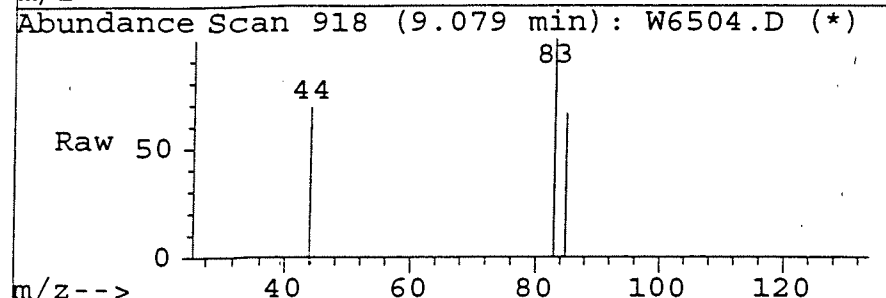
Abundance	Ion	63.00 (62.
	Ion	65.00 (64.





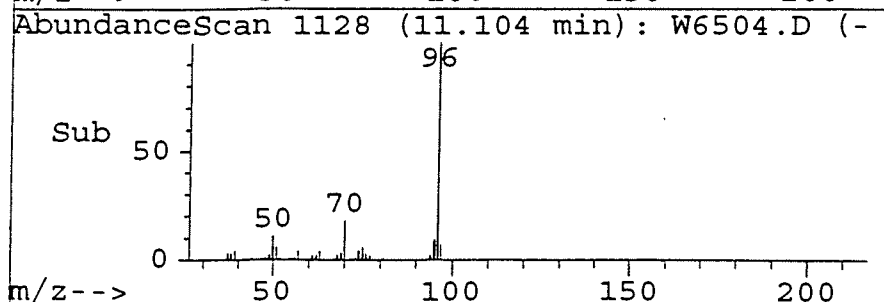
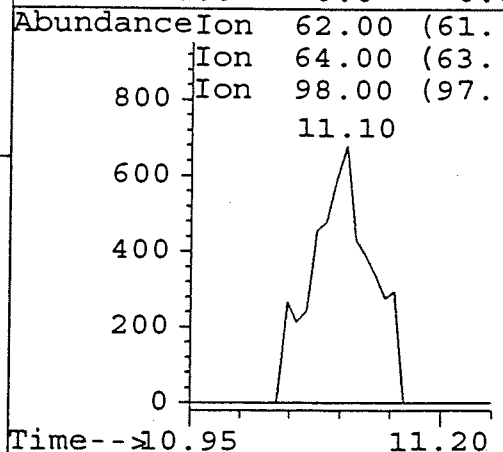
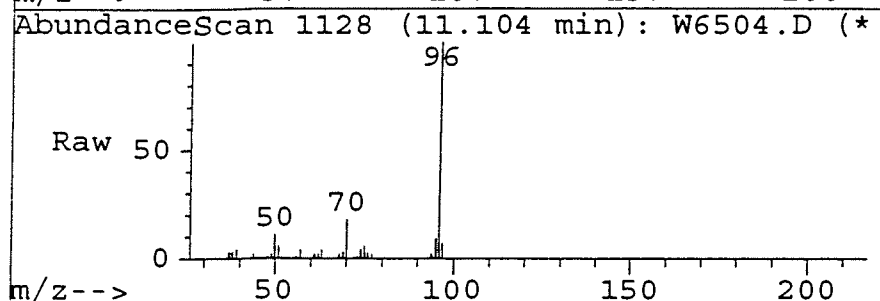
#19
Chloroform
Concen: 0.26 ug/l
RT: 9.08 min Scan# 918
Delta R.T. -0.16 min
Lab File: W6504.D
Acq: 18 Jul 96 3:31 am

Tgt	Ion:83	Resp:	2826
Ion	Ratio	Lower	Upper
83	100		
85	29.3	17.3	117.3
0	0.0	0.0	0.0
0	0.0	0.0	0.0

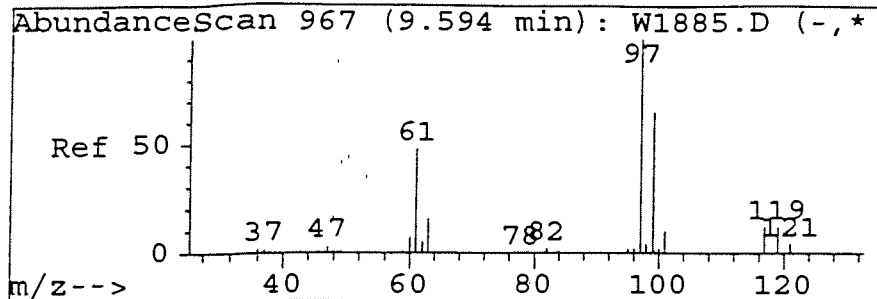


#21
1,2-Dichloroethane
Concen: 0.55 ug/l
RT: 11.10 min Scan# 1128
Delta R.T. 0.26 min
Lab File: W6504.D
Acq: 18 Jul 96 3:31 am

Tgt	Ion:62	Resp:	2701
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0



002162



#22

1,1,1-Trichloroethane

Concen: 0.49 ug/l

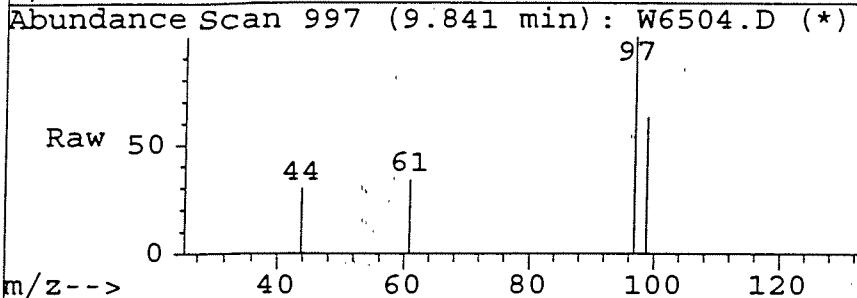
RT: 9.84 min Scan# 997

Delta R.T. - -0.19 min

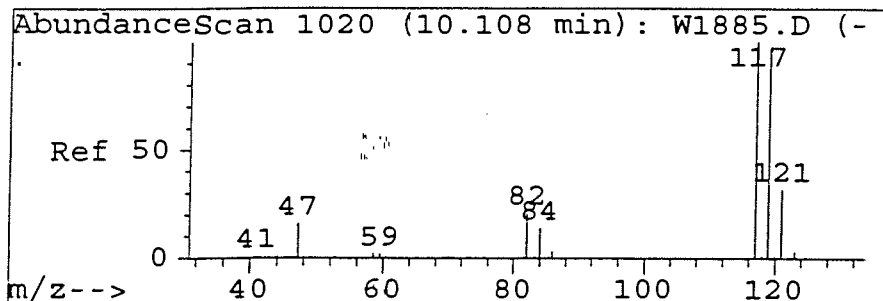
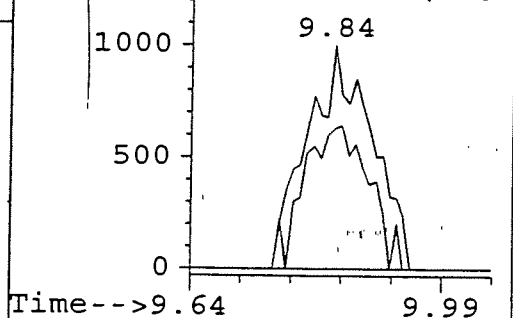
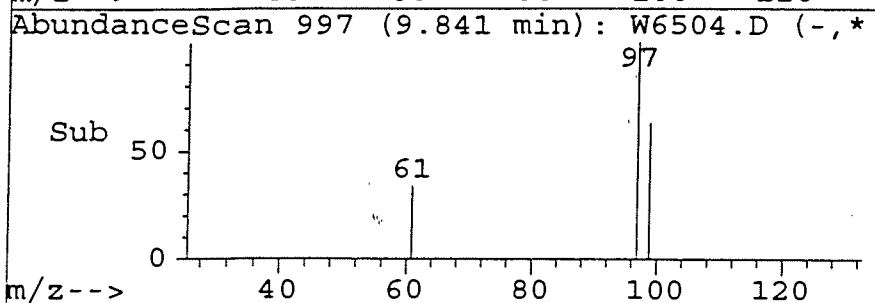
Lab File: W6504.D

Acq: 18 Jul 96 3:31 am

Tgt Ion:97	Resp:	6284
Ion Ratio	Lower	Upper
97 100	"	
99 64.8	18.2	118.2
117 0.0	0.0	57.5
119 0.0	0.0	60.9



Abundance	Ion	97.00	(96.
1500	Ion	99.00	(98.
	Ion	117.00	(116
	Ion	119.00	(118



#23

Carbon Tetrachloride

Concen: 0.53 ug/l

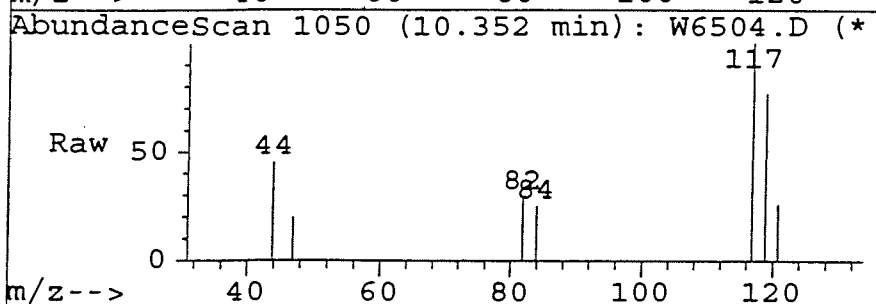
RT: 10.35 min Scan# 1050

Delta R.T. -0.20 min

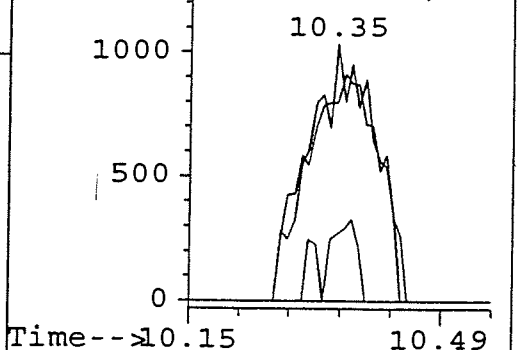
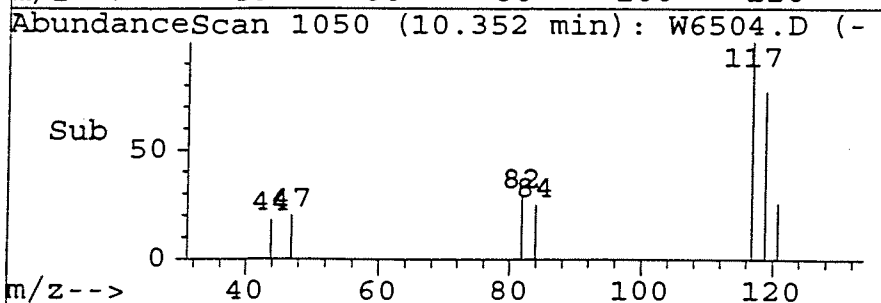
Lab File: W6504.D

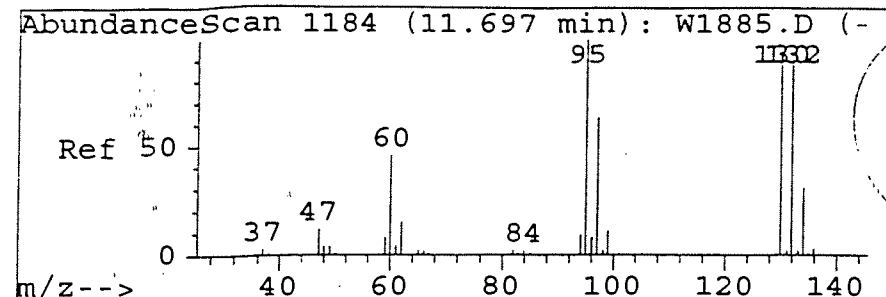
Acq: 18 Jul 96 3:31 am

Tgt	Ion:117	Resp:	6434
Ion	Ratio	Lower	Upper
117	100		
119	97.5	47.3	147.3
121	12.2	0.0	82.4
0	0.0	0.0	0.0



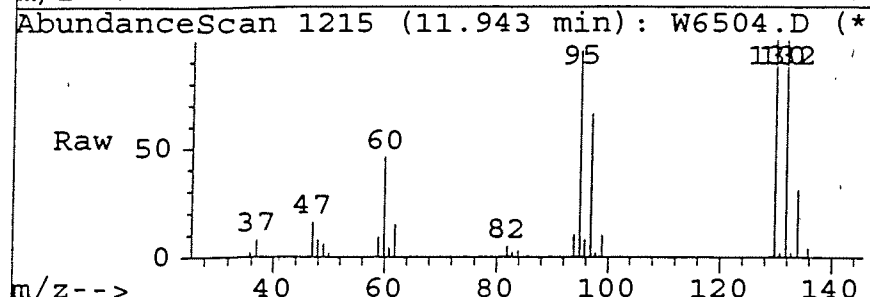
Abundance	Ion 117.00	(116
	Ion 119.00	(118
	Ion 121.00	(120



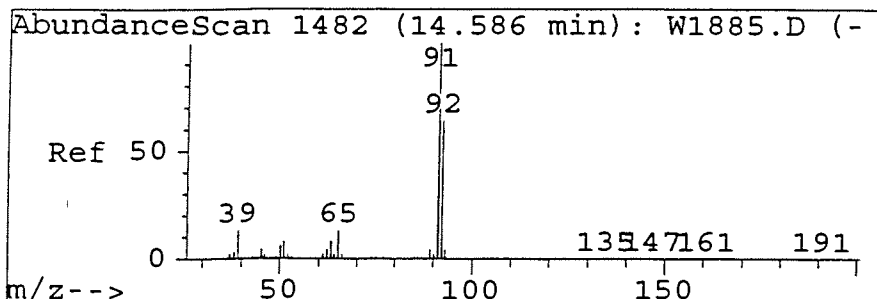
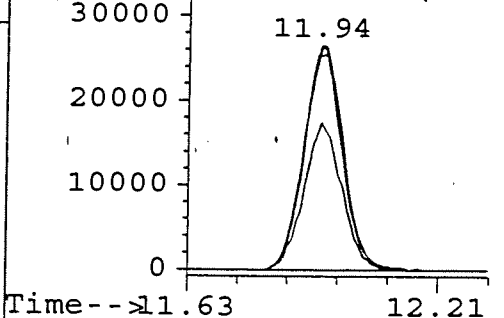
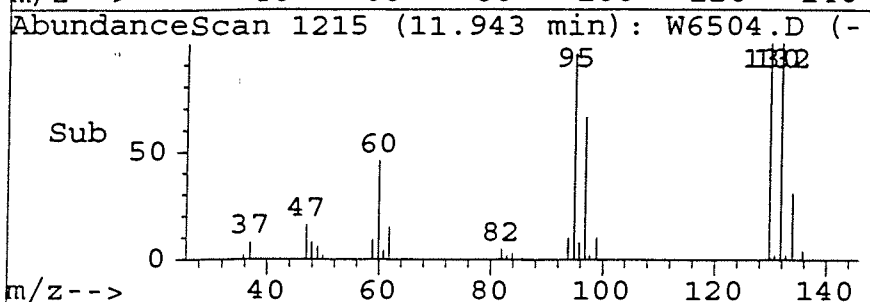


#25
 Trichloroethene
 Concen: 18.13 ug/l
 RT: 11.94 min Scan# 1215
 Delta R.T. -0.21 min
 Lab File: W6504.D
 Acq: 18 Jul 96 3:31 am

Tgt Ion:	130	Resp:	168003
Ion	Ratio	Lower	Upper
130	100		
132	96.4	46.4	146.4
95	94.7	54.1	154.1
97	63.0	16.2	116.2

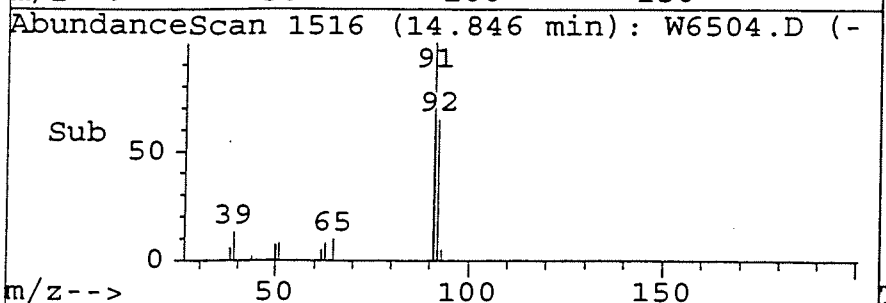
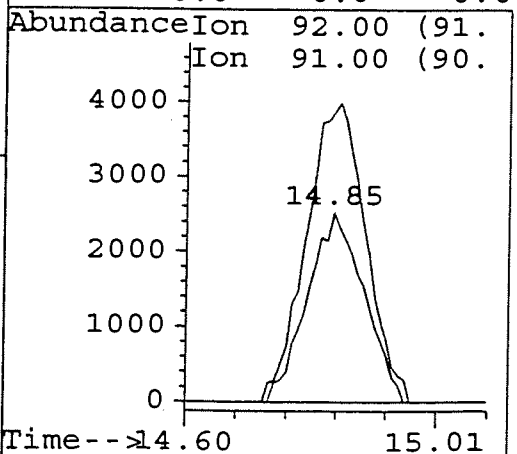
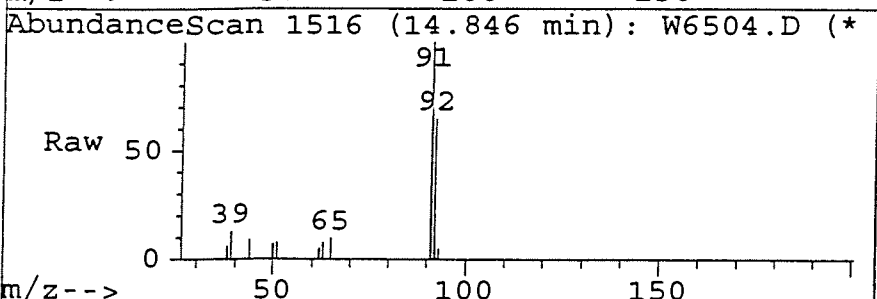


Abundance	Ion	130.00 (129
40000	Ion	132.00 (131
	Ion	95.00 (94.
	Ion	97.00 (96.

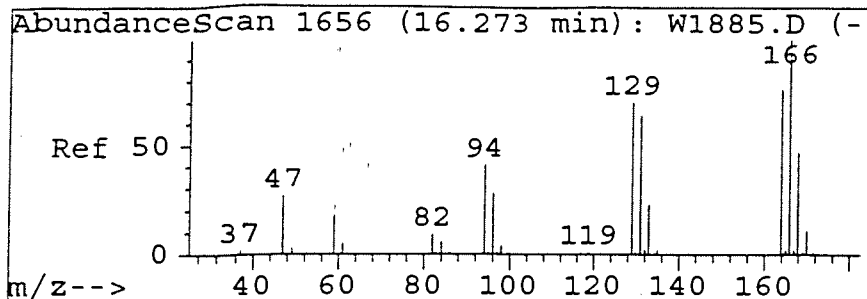


#35
 Toluene
 Concen: 1.25 ug/l
 RT: 14.85 min Scan# 1516
 Delta R.T. -0.28 min
 Lab File: W6504.D
 Acq: 18 Jul 96 3:31 am

Tgt Ion:	92	Resp:	16222
Ion	Ratio	Lower	Upper
92	100		
91	165.3	117.6	217.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0

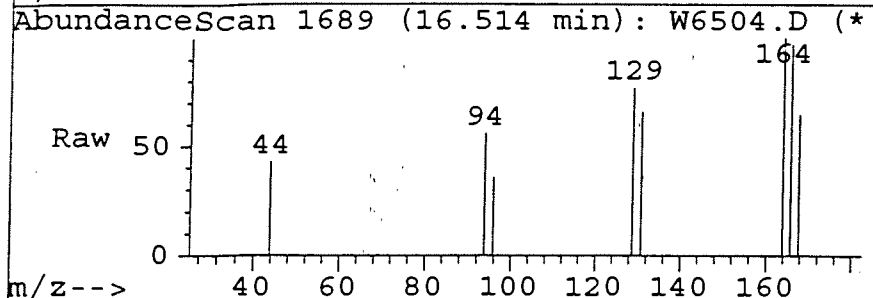


002164

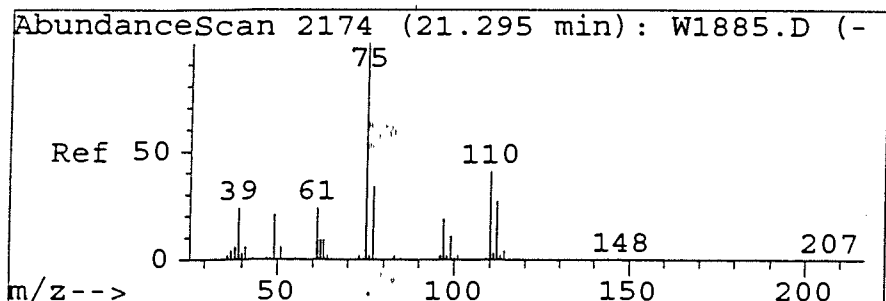
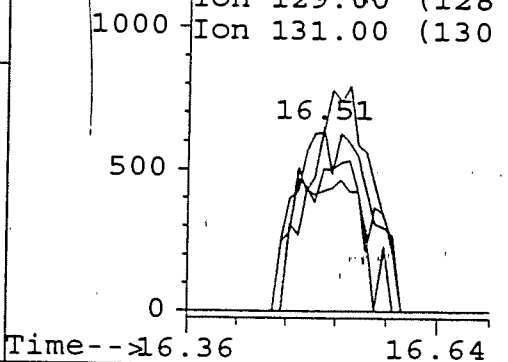
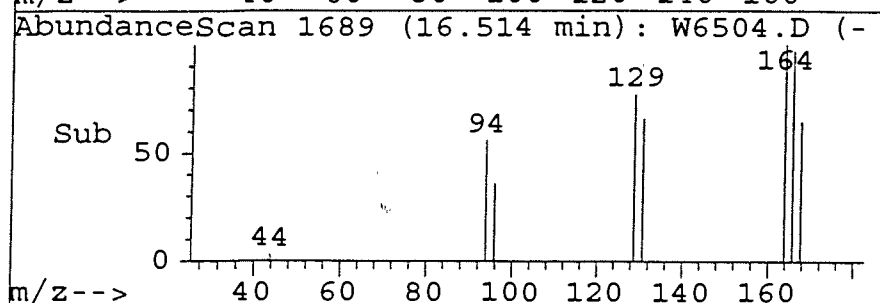


#37
Tetrachloroethene
Concen: 0.37 ug/l
RT: 16.51 min Scan# 1689
Delta R.T. -0.27 min
Lab File: W6504.D
Acq: 18 Jul 96 3:31 am

Tgt Ion:	164	Resp:	3550
Ion	Ratio	Lower	Upper
164	100		
166	120.4	81.6	181.6
129	84.8	33.6	133.6
131	67.0	29.4	129.4

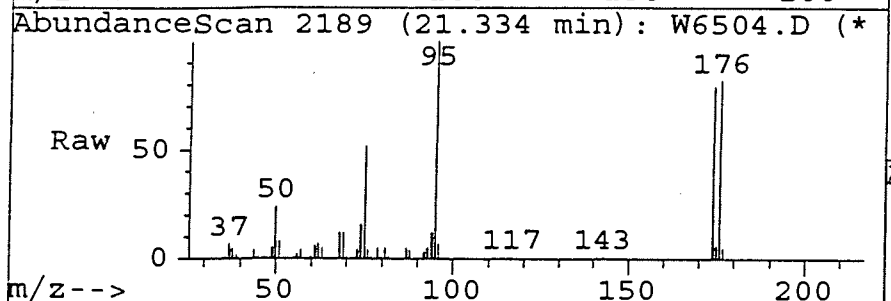


Abundance	Ion	164.00	(163
	Ion	166.00	(165
	Ion	129.00	(128
	Ion	131.00	(130

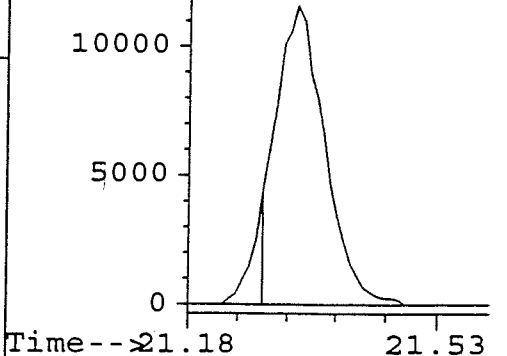
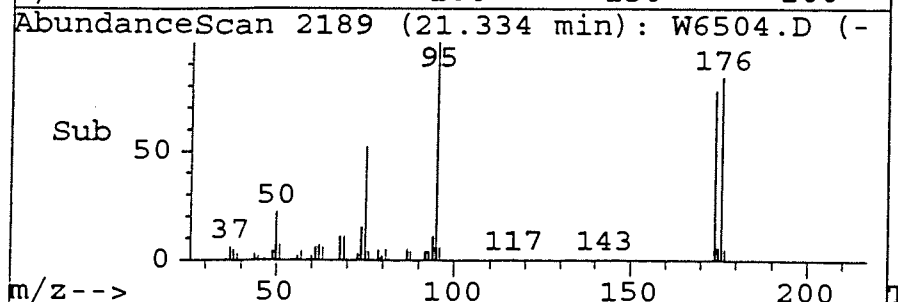


#50
1,2,3-Trichloropropane
Concen: 22.42 ug/l
RT: 21.33 min Scan# 2189
Delta R.T. -0.20 min
Lab File: W6504.D
Acq: 18 Jul 96 3:31 am

Tgt Ion:	75	Resp:	55659
Ion	Ratio	Lower	Upper
75	100		
110	0.0	0.0	86.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



Abundance	Ion	75.00	(74.
	Ion	110.00	(109
		21.33	



Library Search Compound Report

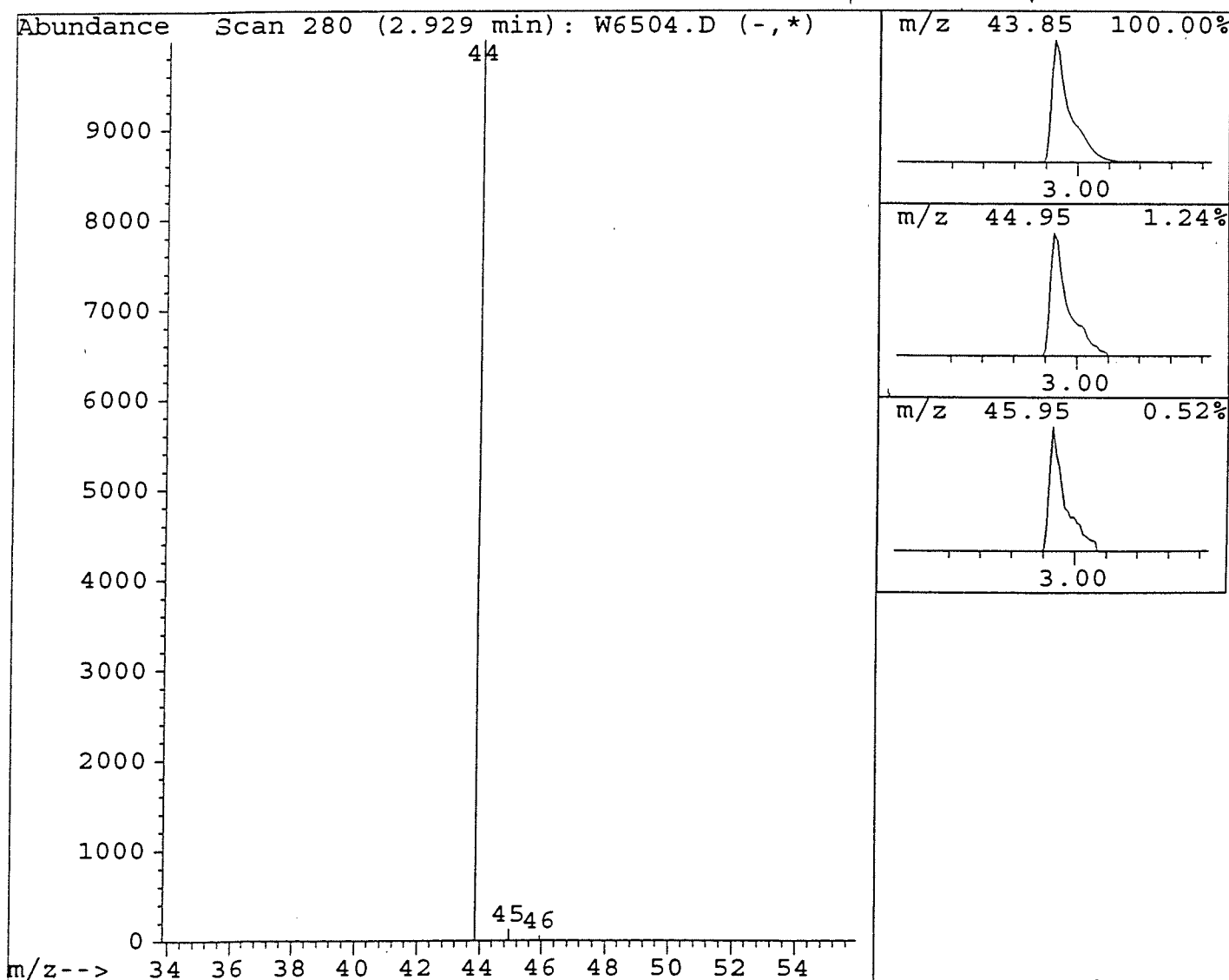
Data File : C:\HPCHEM\1\DATA\JUL17\W6504.D
Acq Time : 18 Jul 96 3:31 am
Sample : G9607191-3(4B)/B#96421
Misc : DF=5/0.5ML:25ML/GW-4/ALLIED SIGNAL

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.93	54.14 ug/l	2424893	Fluorobenzene	11.11

Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L		0	000000-00-0	0



002166

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6506.D
 Acq Time : 18 Jul 96 4:49 am
 Sample : G9607215-1(5B)/B#96421
 Misc : DF=1000/25UL:25ML/GW-7/ALLIED SIGNAL
 Quant Time: Jul 18 5:22 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Mi)
1) Fluorobenzene	11.10	96	222654	10.00	ug/l	-0.0
System Monitoring Compounds						%Recover
45) 1,2-Dichlorobenzene-d4	24.79	150	131754	10.28	ug/l	102.8
47) Bromofluorobenzene	21.33	95	121506	10.06	ug/l	100.5
Target Compounds						Qvalu
9) Acetone	5.62	43	389	2.05	ug/l #	10
12) Methylene Chloride	6.51	84	5842	1.85	ug/l	8
17) 1,2-Dichloroethene (cis-)	8.78	96	746	0.15	ug/l #	4
21) 1,2-Dichloroethane	11.07	62	2803	0.58	ug/l #	4
25) Trichloroethene	11.94	130	156281	17.13	ug/l	9
50) 1,2,3-Trichloropropane	21.33	75	60320	24.67	ug/l #	3

TCE = 17000
 Report TCE only from this run

BATCH # 96421
 DATE 08/18/96
 ANALYST [signature]

REVIEWED & APPROVED
 BY _____ DATE _____

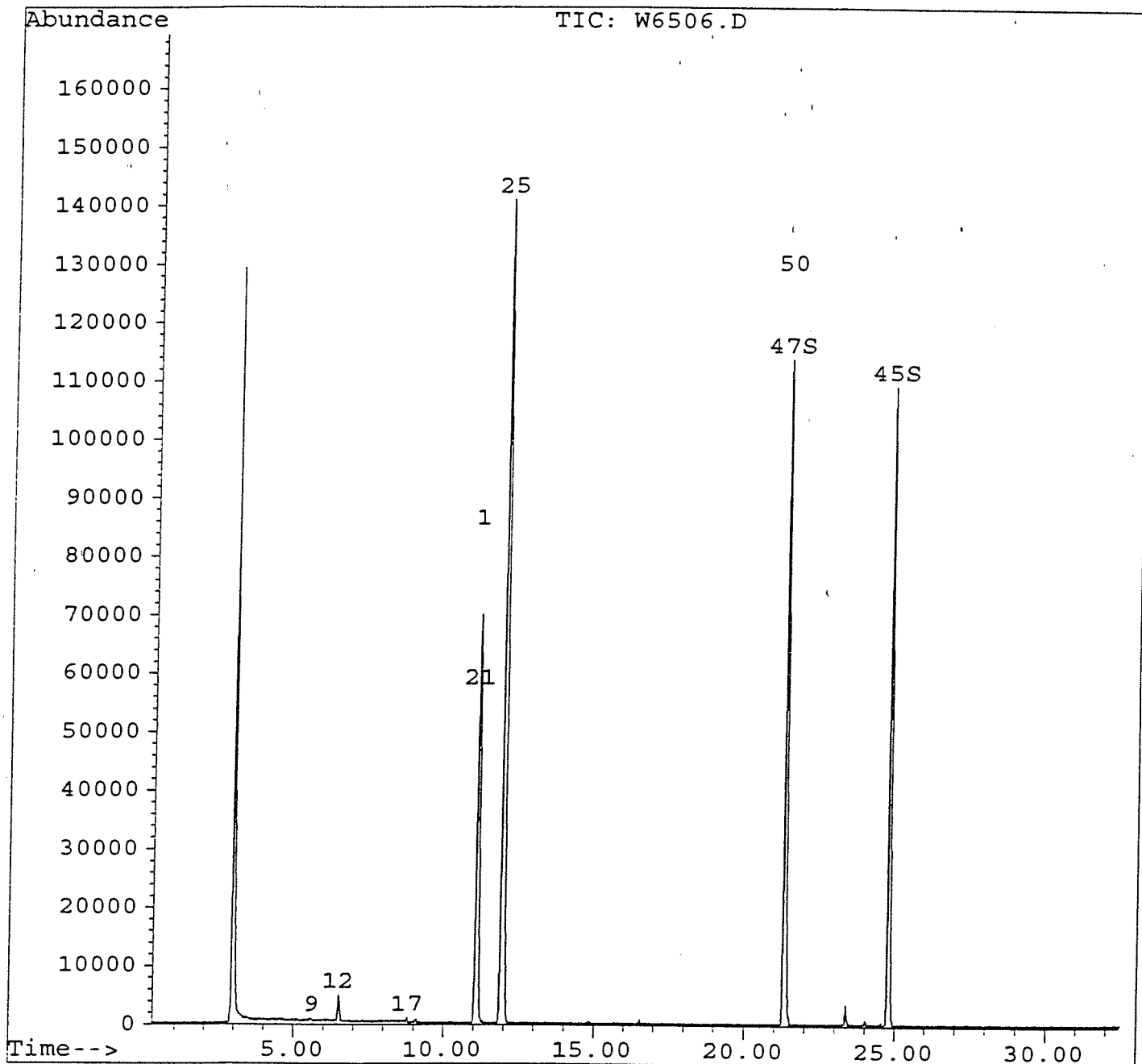
002167

Quantitation Report

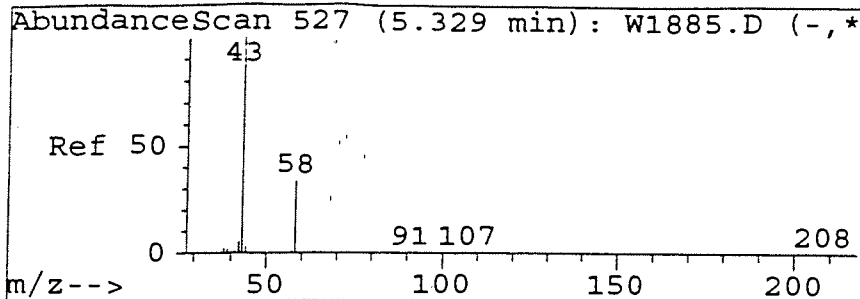
Data File : C:\HPCHEM\1\DATA\JUL17\W6506.D
Acq Time : 18 Jul 96 4:49 am
Sample : G9607215-1(5B)/B#96421
Misc : DF=1000/25UL:25ML/GW-7/ALLIED SIGNAL
Quant Time: Jul 18 5:22 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

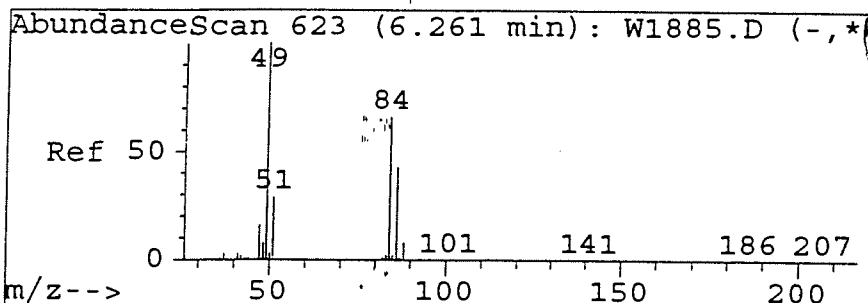
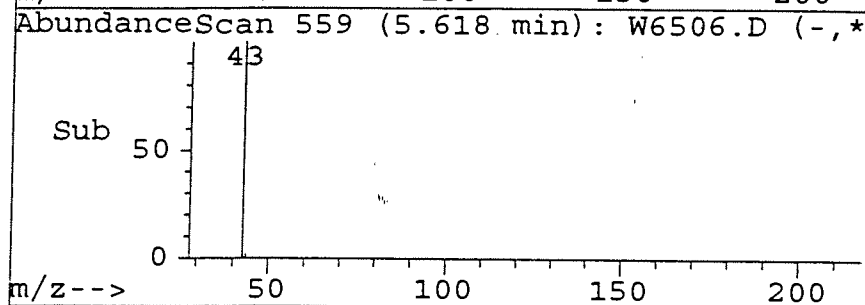
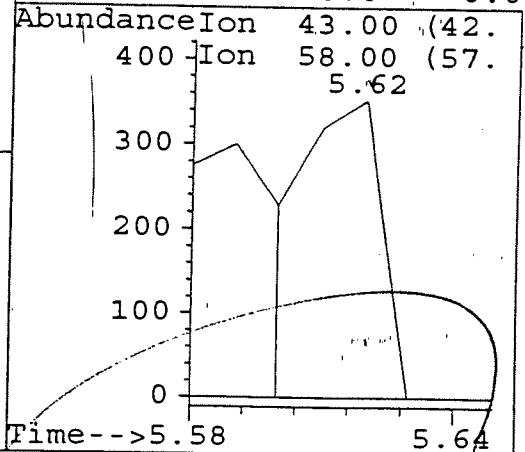
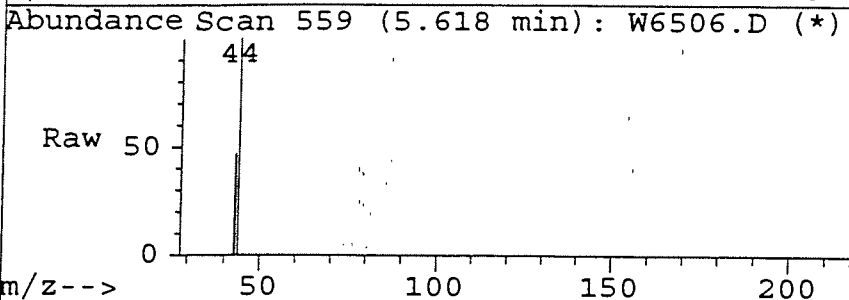


002168



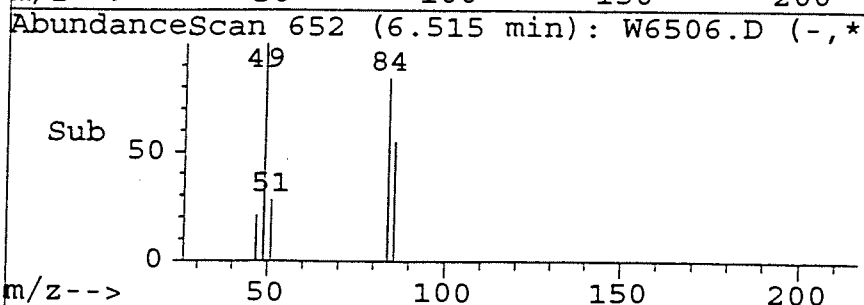
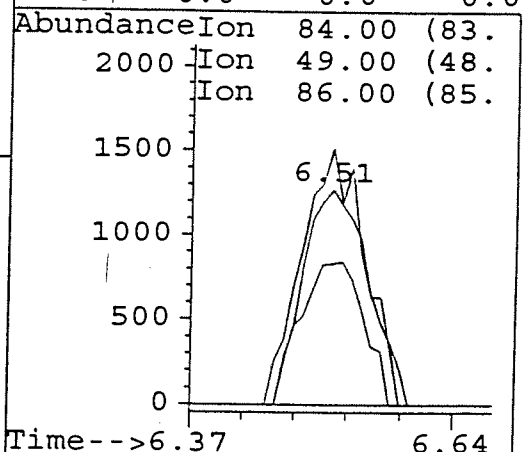
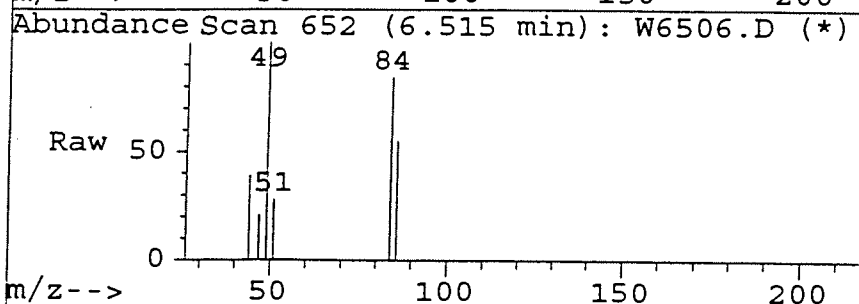
#9
Acetone
Concen: 2.05 ug/l
RT: 5.62 min Scan# 559
Delta R.T. -0.01 min
Lab File: W6506.D
Acq: 18 Jul 96 4:49 am

Tgt Ion:43	Resp:	389
Ion Ratio	Lower	Upper
43	100	
58	0.0	50.0
0	0.0	0.0
0	0.0	0.0

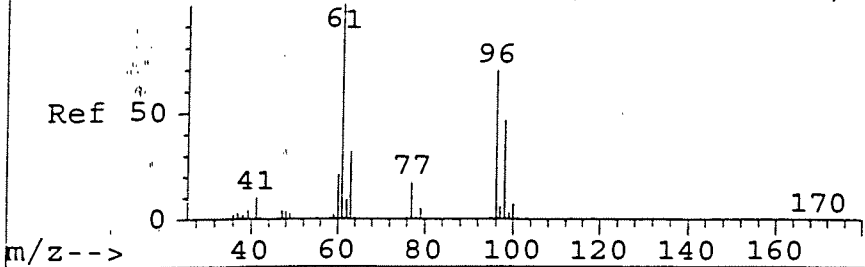


#12
Methylene Chloride
Concen: 1.85 ug/l
RT: 6.51 min Scan# 652
Delta R.T. -0.09 min
Lab File: W6506.D
Acq: 18 Jul 96 4:49 am

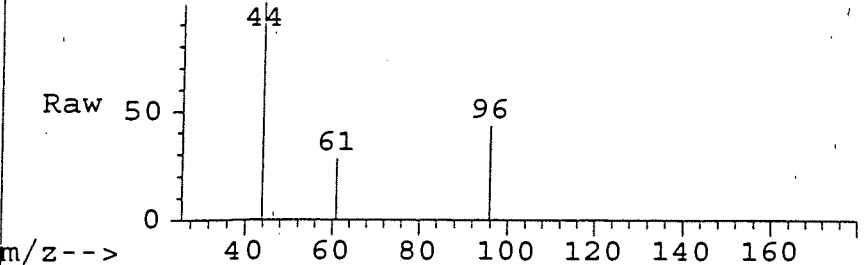
Tgt Ion:84	Resp:	5842
Ion Ratio	Lower	Upper
84	100	
49	113.9	221.6
86	63.4	157.2
0	0.0	0.0



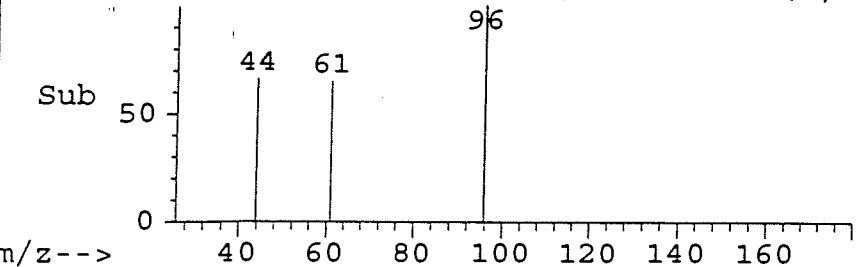
AbundanceScan 858 (8.537 min): W1885.D (-, *



AbundanceScan 887 (8.780 min): W6506.D (*)

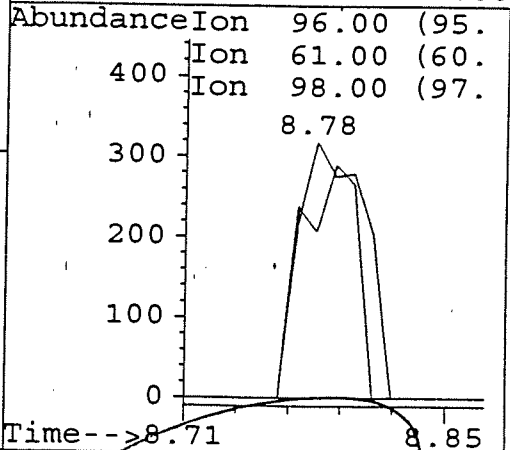


AbundanceScan 887 (8.780 min): W6506.D (-, *

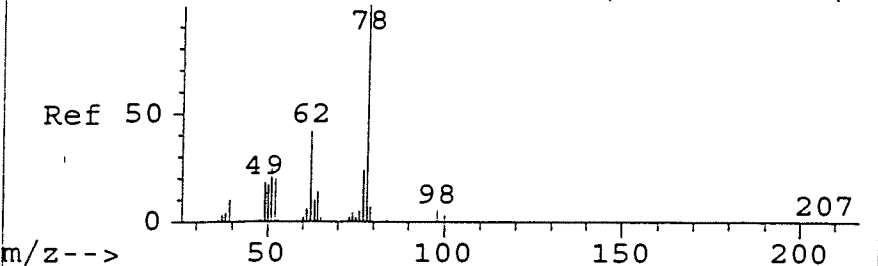


#17
1,2-Dichloroethene (cis-)
Concen: 0.15 ug/l
RT: 8.78 min Scan# 887
Delta R.T. - -0.17 min
Lab File: W6506.D
Acq: 18 Jul 96 4:49 am

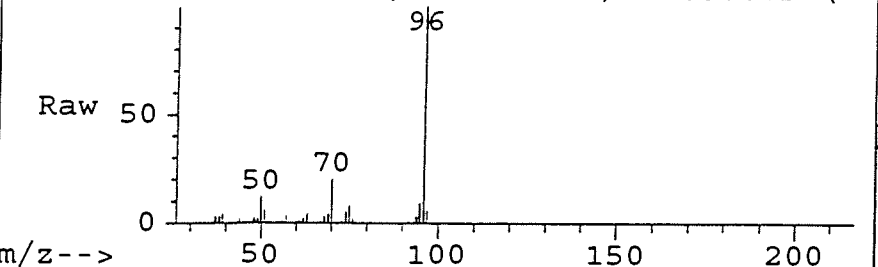
Tgt Ion:	96	Resp:	746
Ion	Ratio	Lower	Upper
96	100		
61	77.2	84.0	184.0#
98	0.0	14.7	114.7#
0	0.0	0.0	0.0



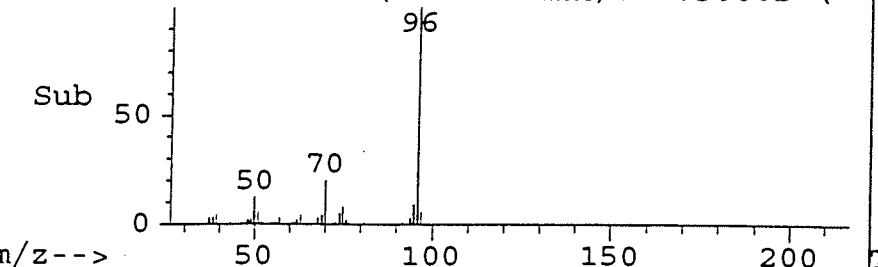
AbundanceScan 1049 (10.390 min): W1885.D (-



AbundanceScan 1124 (11.065 min): W6506.D (*)

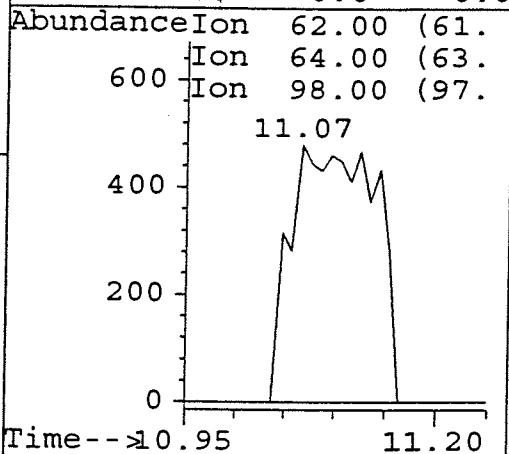


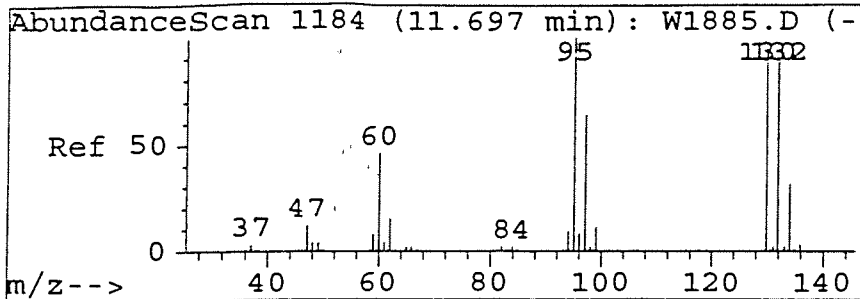
AbundanceScan 1124 (11.065 min): W6506.D (-



#21
1,2-Dichloroethane
Concen: 0.58 ug/l
RT: 11.07 min Scan# 1124
Delta R.T. 0.23 min
Lab File: W6506.D
Acq: 18 Jul 96 4:49 am

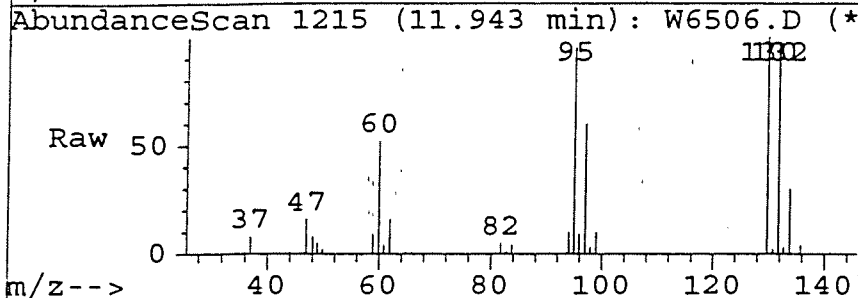
Tgt Ion:	62	Resp:	2803
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0



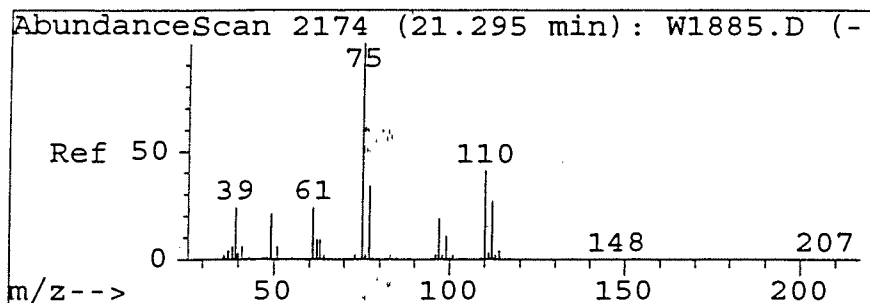
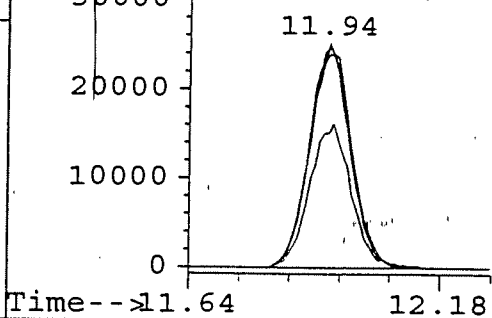
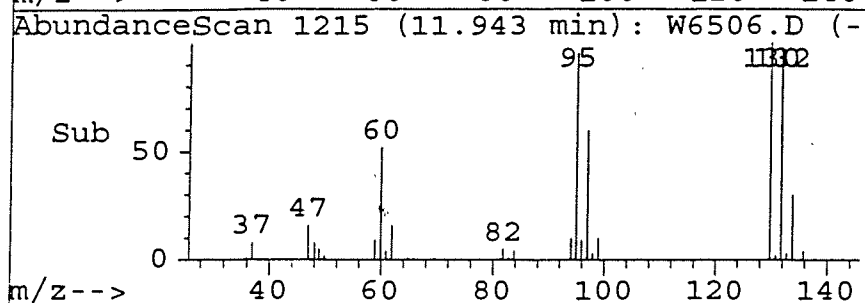


#25
Trichloroethene
Concen: 17.13 ug/l
RT: 11.94 min Scan# 1215
Delta R.T. -0.21 min
Lab File: W6506.D
Acq: 18 Jul 96 4:49 am

Tgt Ion	Ratio	Lower	Upper
130	100		
132	98.7	46.4	146.4
95	95.2	54.1	154.1
97	63.2	16.2	116.2

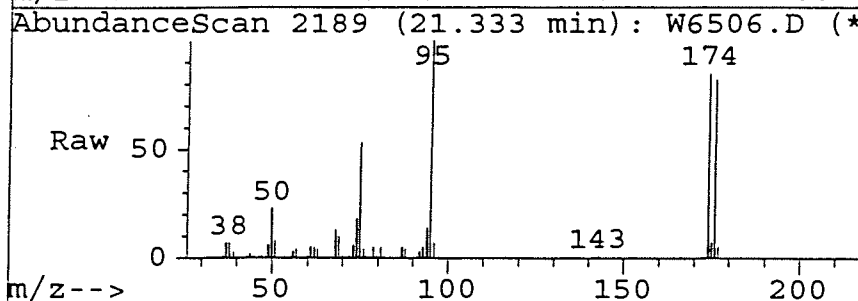


Abundance	Ion	Time
40000	Ion 130.00	(129
30000	Ion 132.00	(131
20000	Ion 95.00	(94.
10000	Ion 97.00	(96.

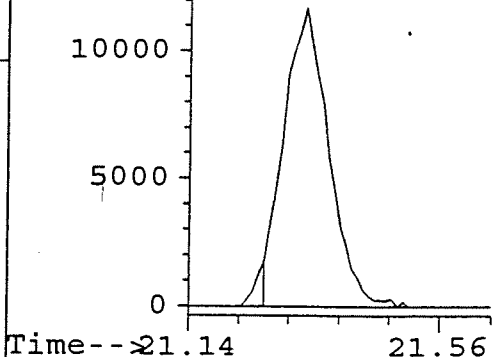
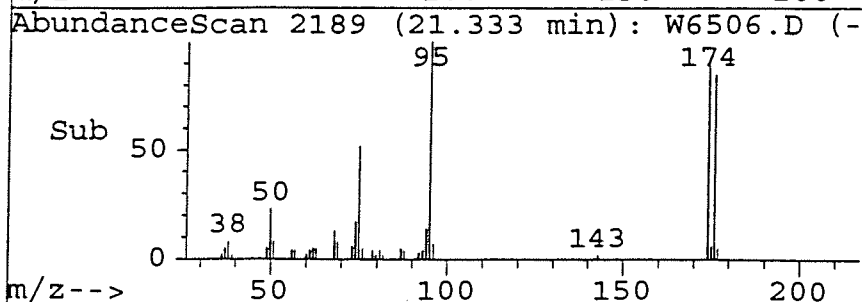


#50
1,2,3-Trichloropropane
Concen: 24.67 ug/l
RT: 21.33 min Scan# 2189
Delta R.T. -0.20 min
Lab File: W6506.D
Acq: 18 Jul 96 4:49 am

Tgt Ion	Ratio	Lower	Upper
75	100		
110	0.0	0.0	86.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



Abundance	Ion	Time
10000	Ion 75.00	(74.
5000	Ion 110.00	(109



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL17\W6506.D

Acq Time : 18 Jul 96 4:49 am

Operator: DEBBIE

Sample : G9607215-1(5B)/B#96421

Inst : VOA3

Misc : DF=1000/25UL:25ML/GW-7/ALLIED SIGNAL

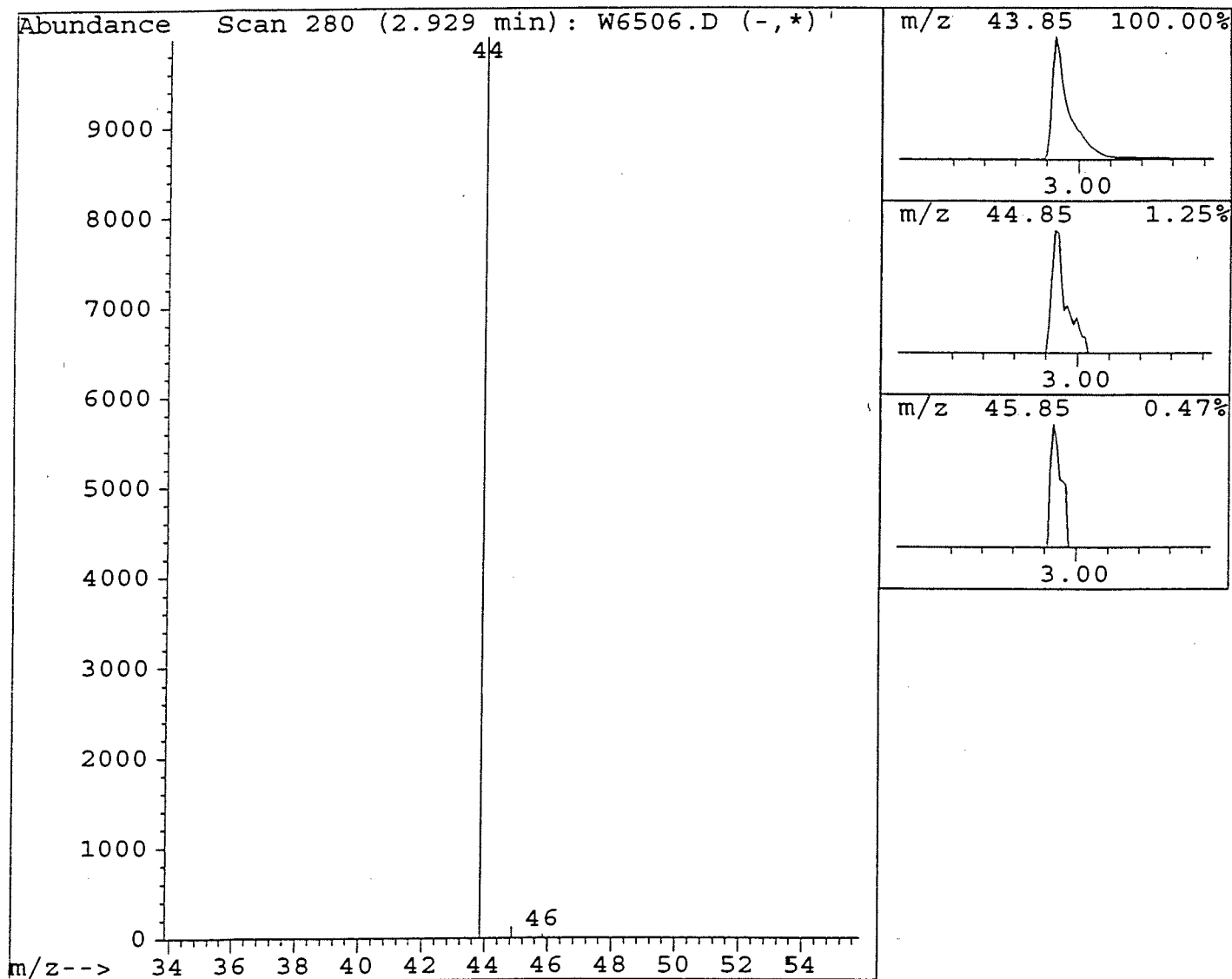
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.93	10.21 ug/l	450047	Fluorobenzene	11.10	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L			0 000000-00-0	0

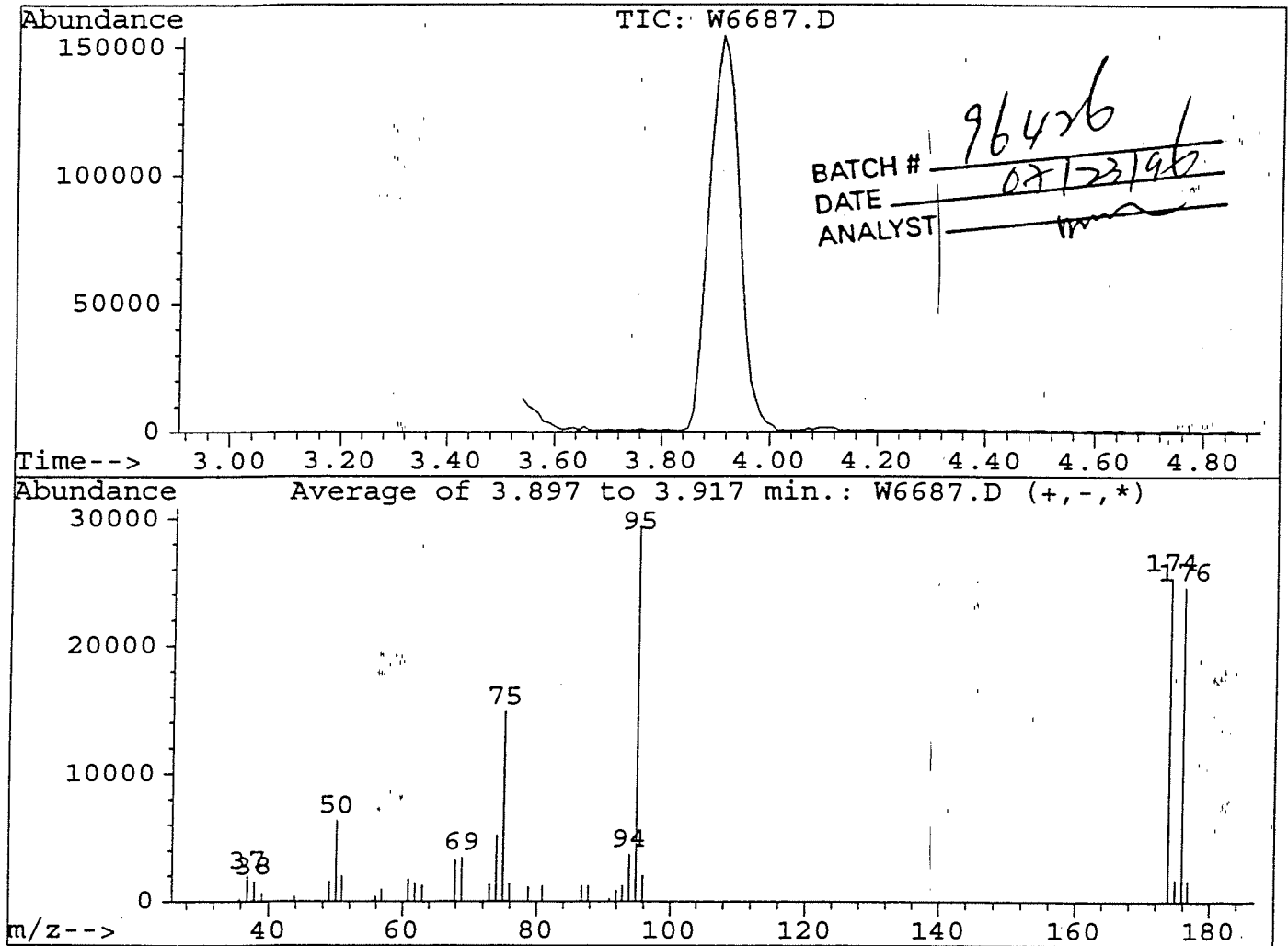


BFB

Data File : C:\HPCHEM\1\DATA\JUL23\W6687.D
 Acq Time : 23 Jul 96 9:47 am
 Sample : 50 NG BFB/B#96425
 Misc : 1UL/VO9602070 4yb

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
 Title :



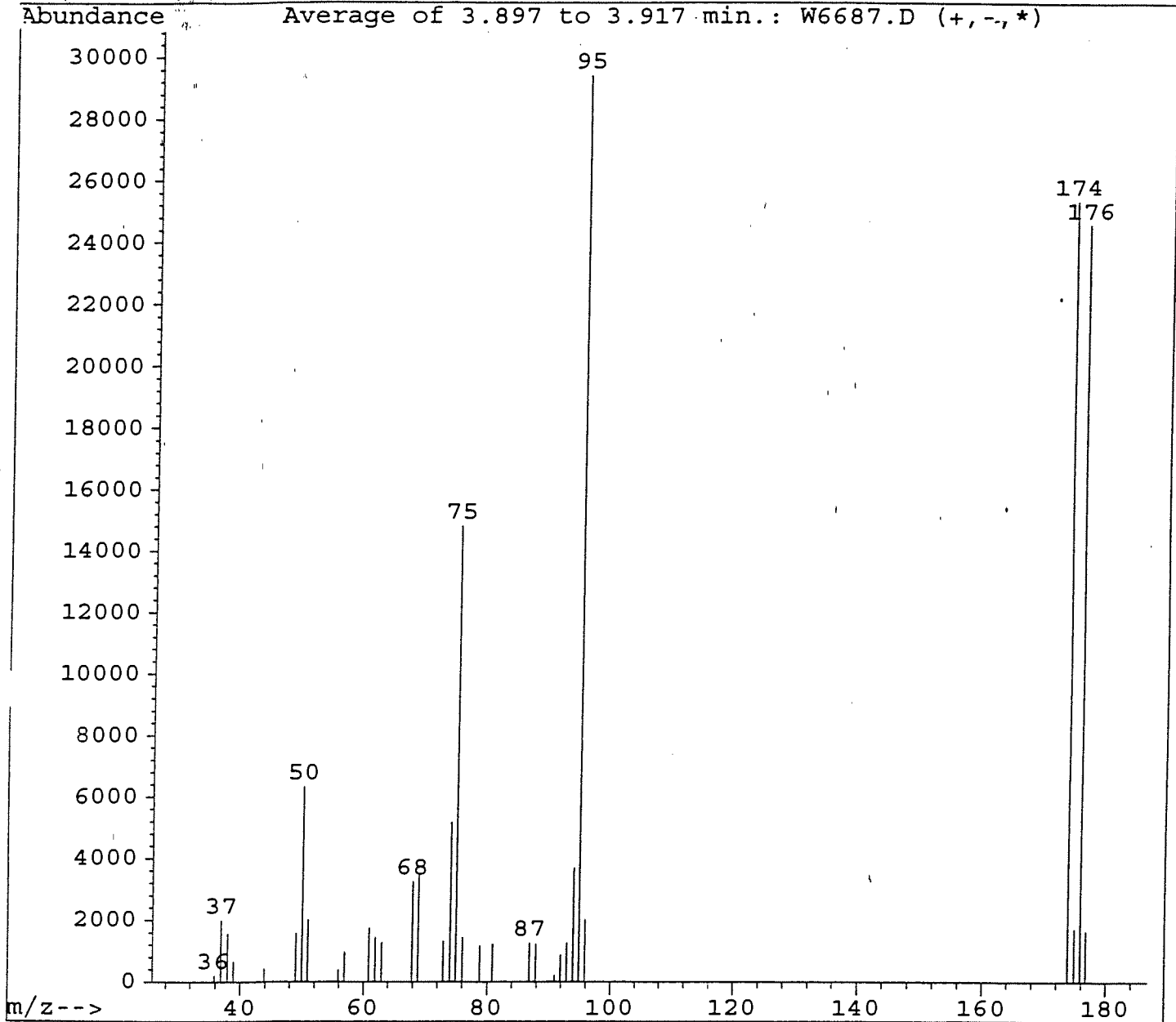
Peak Apex is scan: 39

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.6	6340	PASS
75	95	30	60	50.4	14824	PASS
95	95	100	100	100.0	29397	PASS
96	95	5	9	6.9	2016	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	86.3	25365	PASS
175	174	5	9	6.8	1713	PASS
176	174	95	101	97.0	24592	PASS
177	176	5	9	6.7	1648	PASS

BFB 624 Results

C:\HPCHEM\1\DATA\JUL23\W6687.D

Tue Jul 23 09:52:54 1996



Peak Apex is scan: 39

Average of 3 scans: 38,39,40 minus background scan 31

Target Mass	Comparison Mass	Lower Limit, %	Upper Limit, %	Relative Abundance, %	Result Pass/Fail
50	95	15	40	21.6	PASS
75	95	30	60	50.4	PASS
95	95	100	100	100.0	PASS
96	95	5	9	6.9	PASS
173	174	0	2	0.0	PASS
174	95	50	100	86.3	PASS
175	174	5	9	6.8	PASS
176	174	95	101	97.0	PASS
177	176	5	9	6.7	PASS

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Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6688.D
 Acq Time : 23 Jul 96 9:58 am
 Sample : VSTD050/8260-DAILY/B#96425
 .sc : 10ML/VO9507003,VO9603028

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Min. RRF : 0.100 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev (Min)
1	Fluorobenzene	1.000	1.000	0.0	137	-0.02
2	Dichlorodifluoromethane	0.360	0.311	13.6	118	0.07
3	Chloromethane	0.112	0.099#	11.7	119	0.05
4	Vinyl Chloride	0.132	0.131	0.7	134	0.04
5	Bromomethane	0.203	0.204	-0.8	140	0.00
6	Chloroethane	0.092	0.089#	3.2	131	0.00
7	Freon 123	0.476	0.498	-4.6	136	-0.04
8	Trichlorofluoromethane	0.485	0.547	-12.8	147	-0.02
9	Acetone	0.009	0.008#	10.1	146	-0.08
10	1,1-Dichloroethene	0.195	0.224	-14.5	152#	-0.06
11	Freon 113	0.429	0.480	-12.0	146	-0.05
12	Methylene Chloride	0.142	0.160	-13.1	157#	-0.09
13	1,2-Dichloroethene (trans-)	0.193	0.217	-12.0	150	-0.12
1	1,1-Dichloroethane	0.285	0.294	-3.3	141	-0.14
15	Methyl Ethyl Ketone	0.013	0.013#	-2.6	120	-0.39
16	2,2-Dichloropropane	0.427	0.516	-21.0	150#	-0.17
17	1,2-Dichloroethene (cis-)	0.231	0.284	-23.1	131	-0.17
18	Bromochloromethane	0.186	0.172	7.3	127	-0.18
19	Chloroform	0.477	0.543	-13.8	135	-0.17
20	1,1-Dichloropropene	0.426	0.443	-4.0	135	-0.19
21	1,2-Dichloroethane	0.217	0.201	7.3	129	-0.21
22	1,1,1-Trichloroethane	0.572	0.659	-15.2	150	-0.19
23	Carbon Tetrachloride	0.534	0.654	-22.3	156#	-0.20
24	Benzene	0.767	0.724	5.6	129	-0.05
25	Trichloroethene	0.410	0.465	-13.5	149	-0.22
26	1,2-Dichloropropane	0.264	0.237	10.2	123	-0.24
27	Dibromomethane	0.192	0.165	14.0	118	-0.24
28	Bromodichloromethane	0.485	0.477	1.5	134	-0.05
29	Methyl Isobutyl Ketone	0.053	0.044#	18.1	112	-0.22
30	cis-1,3-Dichloropropene	0.346	0.326	5.7	129	-0.26
31	trans-1,3-Dichloropropene	0.245	0.226	7.7	129	-0.29
32	1,3-Dichloropropane	0.242	0.227	6.2	129	-0.26
33	Dibromochloromethane	0.346	0.318	7.9	127	-0.26
34	Bromoform	0.173	0.163	5.5	129	-0.26
35	Toluene	0.574	0.592	-3.0	138	-0.29
36	1,1,2-Trichloroethane	0.175	0.154	11.8	122	-0.27
37	Tetrachloroethene	0.423	0.481	-13.8	148	-0.27
38	1,2-Dibromoethane	0.244	0.232	5.0	130	-0.24
39	Chlorobenzene	0.762	0.792	-4.0	140	-0.23
40	1,1,1,2-Tetrachloroethane	0.356	0.359	-0.8	138	-0.24
41	Ethylbenzene	0.380	0.405	-6.6	140	-0.04
42	m,p-Xylenes	0.460	0.498	-8.2	145	-0.03
43	o-Xylene	0.430	0.445	-3.4	140	-0.22
44	Styrene	0.655	0.686	-4.7	143	-0.21
45 S	1,2-Dichlorobenzene-d4	0.575	0.659	-14.5	164#	-0.15
46	Isopropylbenzene	1.306	1.458	-11.7	145	-0.25

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47	S	Bromofluorobenzene	0.543	0.639	-17.8	166#	-0.23
48		Bromobenzene	0.655	0.650	0.8	135	-0.23
49		1,1,2,2-Tetrachloroethane	0.200	0.183	8.5	129	-0.03
50		1,2,3-Trichloropropane	0.110	0.110	0.3	127	-0.06
51		n-Propylbenzene	1.566	1.740	-11.1	145	-0.21
52		2-Chlorotoluene	1.056	1.122	-6.3	147	-0.05
53		4-Chlorotoluene	0.939	0.974	-3.8	139	-0.01
54		1,3,5-Trimethylbenzene	0.955	1.056	-10.6	145	-0.20
55		Tert-Butylbenzene	1.063	1.233	-16.0	151#	-0.17
56		1,2,4-Trimethylbenzene	0.964	1.028	-6.7	142	-0.02
57		Sec-Butylbenzene	1.566	1.779	-13.6	146	-0.16
58		1,3-Dichlorobenzene	0.656	0.691	-5.4	143	-0.03
59		1,4-Dichlorobenzene	0.660	0.663	-0.6	136	-0.03
60		p-Isopropyltoluene	1.197	1.303	-8.8	140	-0.15
61		1,2-Dichlorobenzene	0.520	0.509	2.1	134	-0.15
62		n-Butylbenzene	1.215	1.334	-9.8	140	-0.13
63		1,2-Dibromo-3-Chloropropane	0.034	0.037#	-10.0	152#	-0.13
64		1,2,4-Trichlorobenzene	0.476	0.461	3.1	133	-0.21
65		Naphthalene	0.396	0.412	-4.2	149	-0.25
66		Hexachlorobutadiene	0.434	0.480	-10.7	141	-0.03
67		1,2,3-Trichlorobenzene	0.365	0.329	9.9	125	-0.28

(#) = Out of Range
W6399.D 524JL.M

SPCC's out = 0 CCC's out = 0
Tue Jul 23 10:43:11 1996 VOA3

002176

Quantitation Report

REVIEWED & APPROVED

Data File : C:\HPCHEM\1\DATA\JUL23\W6688.D
Acq Time : 23 Jul 96 9:58 am
Sample : VSTD050/8260-DAILY/B#96425
Misc : 10ML/VO9507003,VO9603028
Quant Time: Jul 23 10:38 1996

DATE 7/23/96
Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

ANALYST

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Internal Standards	R.T.	Q Ion	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	11.10	96	656000	10.00	ug/l	-0.02
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.78	150	432082	11.45	ug/l	114.45%
47) Bromofluorobenzene	21.32	95	419319	11.78	ug/l	117.81%
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.18	85	204094	8.64	ug/l	97
3) Chloromethane	3.54	50	64909	8.83	ug/l	96
4) Vinyl Chloride	3.71	62	86019	9.93	ug/l	96
5) Bromomethane	4.37	94	134151	10.08	ug/l	92
6) Chloroethane	4.47	64	58654	9.68	ug/l	95
7) Freon 123	4.81	83	326492	10.46	ug/l	97
8) Trichlorofluoromethane	4.85	101	358722	11.28	ug/l	99
9) Acetone	5.55	43	20103	35.98	ug/l m	100
10) 1,1-Dichloroethene	5.77	96	146647	11.45	ug/l	97
11) Freon 113	5.49	101	314956	11.20	ug/l	93
12) Methylene Chloride	6.51	84	105145	11.31	ug/l	91
13) 1,2-Dichloroethene (trans-)	6.99	96	142141	11.20	ug/l	94
14) 1,1-Dichloroethane	7.71	63	192968	10.33	ug/l	98
15) Methyl Ethyl Ketone	8.47	43	34695	41.06	ug/l m	100
16) 2,2-Dichloropropane	8.70	77	338569	12.10	ug/l	98
17) 1,2-Dichloroethene (cis-)	8.78	96	186226	12.31	ug/l	96
18) Bromochloromethane	9.38	130	112850	9.27	ug/l	82
19) Chloroform	9.07	83	356240	11.38	ug/l	99
20) 1,1-Dichloropropene	10.15	75	290333	10.40	ug/l	96
21) 1,2-Dichloroethane	10.63	62	131889	9.27	ug/l	96
22) 1,1,1-Trichloroethane	9.84	97	432203	11.52	ug/l	96
23) Carbon Tetrachloride	10.35	117	428937	12.23	ug/l	99
24) Benzene	10.68	78	475073	9.44	ug/l	100
25) Trichloroethene	11.93	130	305006	11.35	ug/l	94
26) 1,2-Dichloropropane	12.31	63	155474	8.98	ug/l	55
27) Dibromomethane	12.94	174	108329	8.60	ug/l	80
28) Bromodichloromethane	12.82	83	313049	9.85	ug/l	100
29) Methyl Isobutyl Ketone	13.58	43	114244	32.76	ug/l	92
30) cis-1,3-Dichloropropene	14.03	75	213862	9.43	ug/l	98
31) trans-1,3-Dichloropropene	15.27	75	148349	9.23	ug/l	96
32) 1,3-Dichloropropane	16.33	76	148703	9.38	ug/l	98
33) Dibromochloromethane	16.99	129	208856	9.21	ug/l	100
34) Bromoform	20.70	173	107022	9.45	ug/l	100
35) Toluene	14.84	92	388043	10.30	ug/l	100
36) 1,1,2-Trichloroethane	15.68	97	101051	8.82	ug/l	100
37) Tetrachloroethene	16.51	164	315437	11.38	ug/l	97
38) 1,2-Dibromoethane	17.50	107	152223	9.50	ug/l	100

(#)=qualifier out of range (m)=manual integration

W6688.D 524JL.M Tue Jul 23 10:38:33 1996

VOA3 002177Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6688.D
Acq Time : 23 Jul 96 9:58 am
Sample : VSTD050/8260-DAILY/B#96425
Misc : 10ML/VO9507003,VO9603028
Quant Time: Jul 23 10:38 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Chlorobenzene	18.51	112	519800	10.40	ug/l	100
40) 1,1,1,2-Tetrachloroethane	18.61	131	235188	10.08	ug/l	97
41) Ethylbenzene	18.65	106	265744	10.66	ug/l	99
42) m,p-Xylenes	18.84	106	653648	21.65	ug/l	92
43) o-Xylene	19.85	106	291980	10.34	ug/l	92
44) Styrene	19.93	104	450153	10.47	ug/l	99
46) Isopropylbenzene	20.70	105	956260	11.17	ug/l	96
48) Bromobenzene	21.77	77	426705	9.92	ug/l	93
49) 1,1,2,2-Tetrachloroethane	21.12	83	120219	9.15	ug/l	99
50) 1,2,3-Trichloropropane	21.47	75	71843	9.97	ug/l	80
51) n-Propylbenzene	21.71	91	1141643	11.11	ug/l	93
52) 2-Chlorotoluene	22.11	91	736138	10.63	ug/l	91
53) 4-Chlorotoluene	22.23	91	639244	10.38	ug/l	89
54) 1,3,5-Trimethylbenzene	22.08	105	692624	11.06	ug/l	96
55) Tert-Butylbenzene	22.90	119	808656	11.60	ug/l	97
56) 1,2,4-Trimethylbenzene	22.99	105	674199	10.67	ug/l	96
57) Sec-Butylbenzene	23.38	105	1167260	11.36	ug/l	97
58) 1,3-Dichlorobenzene	23.85	146	453216	10.54	ug/l	99
59) 1,4-Dichlorobenzene	24.07	146	435250	10.06	ug/l	99
60) p-Isopropyltoluene	23.68	119	854474	10.88	ug/l	98
61) 1,2-Dichlorobenzene	24.83	146	333716	9.79	ug/l	96
62) n-Butylbenzene	24.53	91	875318	10.98	ug/l	97
63) 1,2-Dibromo-3-Chloropropan	26.33	75	24270	11.00	ug/l	67
64) 1,2,4-Trichlorobenzene	28.03	180	302179	9.69	ug/l	96
65) Naphthalene	28.57	128	270517	10.42	ug/l	96
66) Hexachlorobutadiene	28.33	225	314775	11.07	ug/l	98
67) 1,2,3-Trichlorobenzene	29.14	180	215802	9.01	ug/l	99

002178

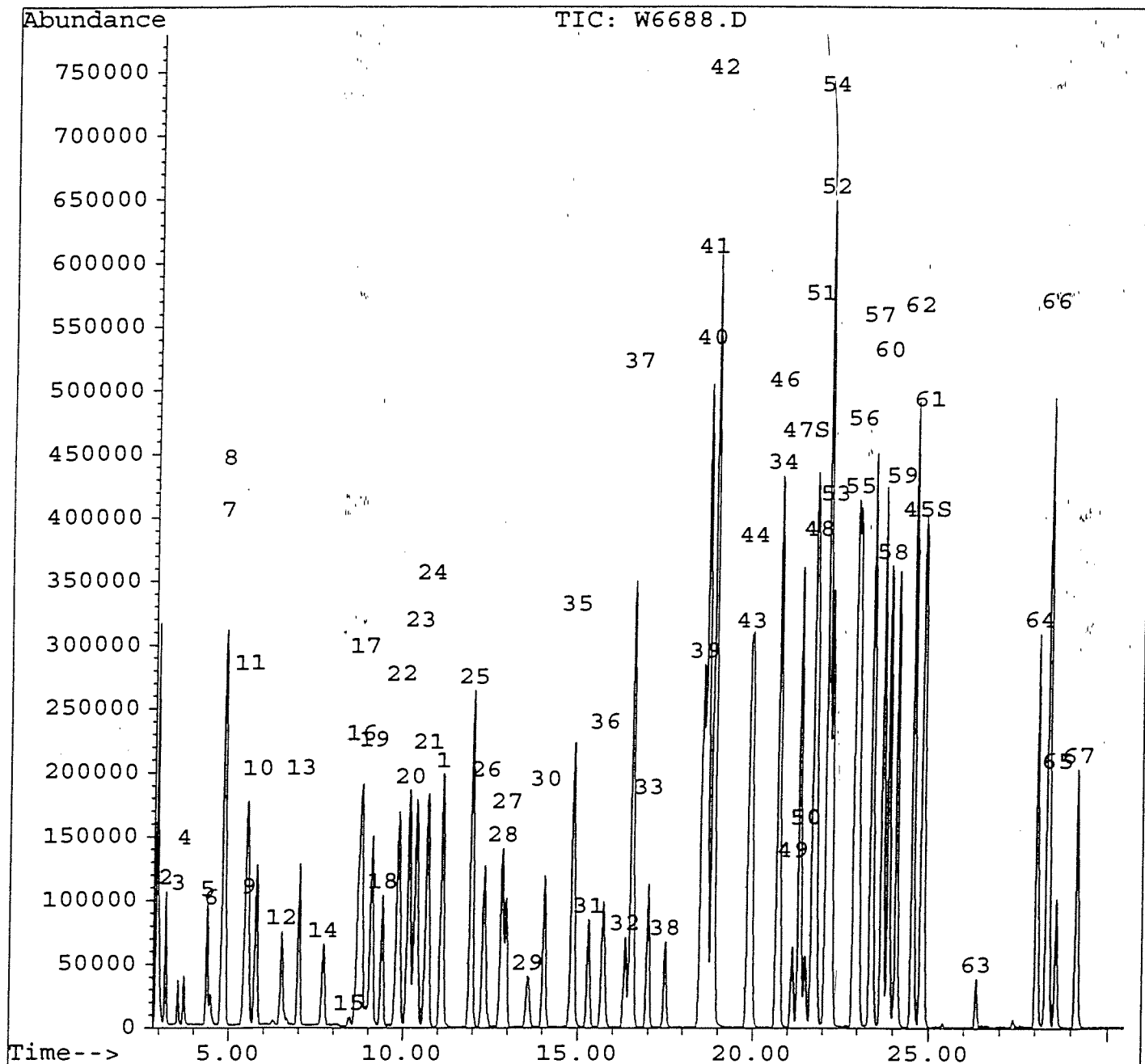
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6688.D
 Acq Time : 23 Jul 96 9:58 am
 Sample : VSTD050/8260-DAILY/B#96425
 Misc : 10ML/VO9507003,VO9603028
 Quant Time: Jul 23 10:38 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96,ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



002179

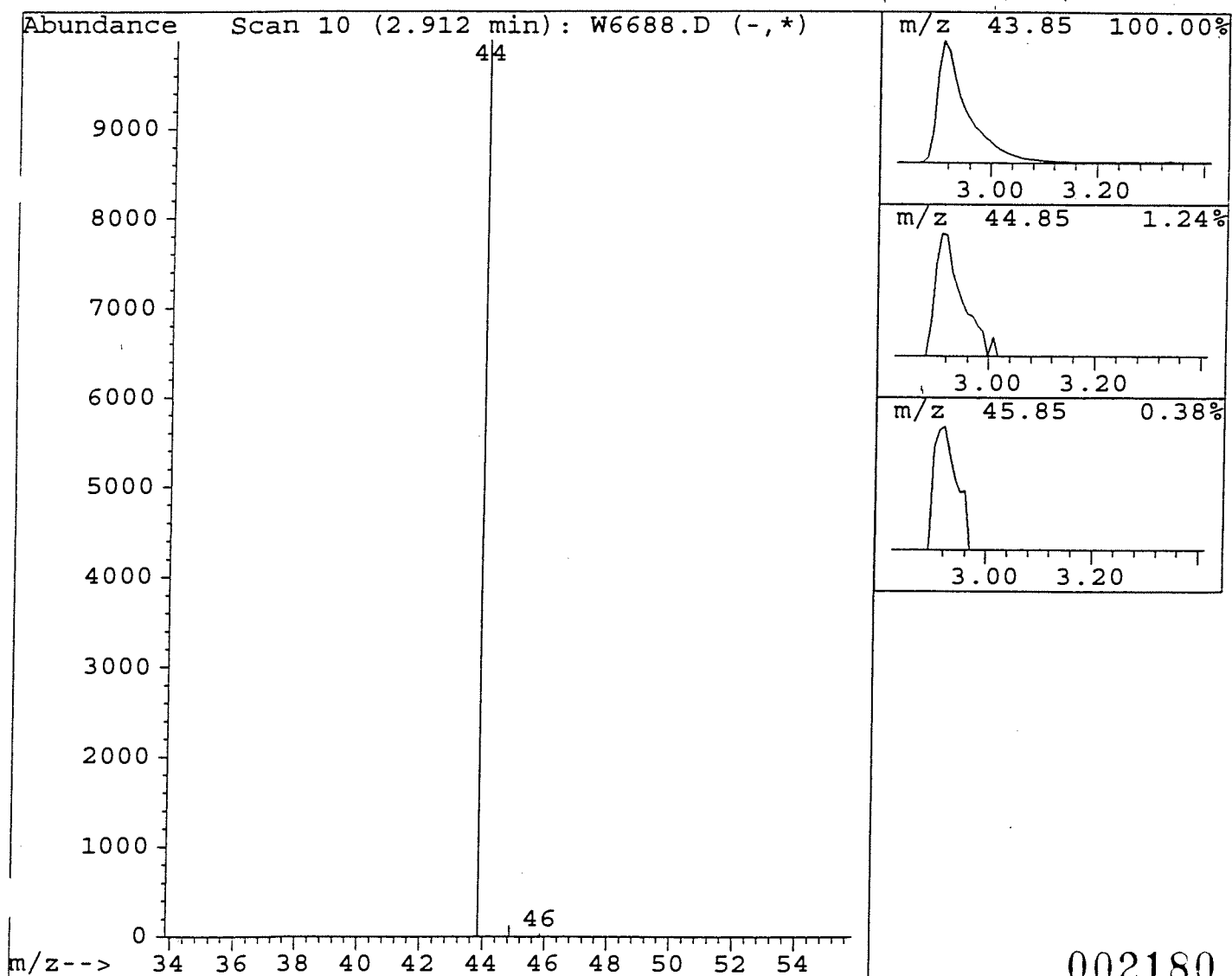
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6688.D
Acq Time : 23 Jul 96 9:58 am
Sample : VSTD050/8260-DAILY/B#96425
Misc : 10ML/VO9507003,VO9603028

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96,ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
2.91	9.08 ug/l	1173912	Fluorobenzene	11.10
Hit# of 0		Tentative ID	Ref# CAS#	Qual
1 No Hits From C:\DATABASE\NBS75K.L			0 000000-00-0	0



002180

Quantitation Report
Data File : C:\HPCHEM\1\DATA\JUL23\W6689.D
Acq Time : 23 Jul 96 10:35 am
Sample : 50PPB-QCCS-1/B#96425
Misc : 10ML/VO9507015,
Quant Time : Jul 23 11:08 1996

BATCH # 96426
DATE 07/23/96
Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00
ANALYST

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 527.2
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration
REVIEWED & APPROVED BY [Signature] DATE 7/23

Internal Standards R.T. QIon Response Conc Units Dev (Min)

1) Fluorobenzene 11.09 96 391871 10.00 ug/l -0.03

System Monitoring Compounds

%Recovery

45) 1,2-Dichlorobenzene-d4 24.77 150 215725 9.57 ug/l 95.66
47) Bromofluorobenzene 21.31 95 210991 9.92 ug/l 99.24

Target Compounds

Qvalue

2) Dichlorodifluoromethane	3.19	85	141032	10.00 ug/l	97
3) Chloromethane	3.55	50	40785	9.29 ug/l	95
4) Vinyl Chloride	3.71	62	51386	9.93 ug/l	98
5) Bromomethane	4.37	94	76204	9.59 ug/l	92
6) Chloroethane	4.47	64	34233	9.45 ug/l	92
7) Freon 123	4.83	83	186939	10.03 ug/l	97
8) Trichlorofluoromethane	4.85	101	197986	10.42 ug/l	99
9) Acetone	5.58	43	11096	33.24 ug/l	100
10) 1,1-Dichloroethene	5.77	96	74792	9.78 ug/l	94
11) Freon 113	5.48	101	168824	10.05 ug/l	95
12) Methylene Chloride	6.50	84	56856	10.24 ug/l	93
13) 1,2-Dichloroethene (trans-	6.99	96	75225	9.92 ug/l	97
14) 1,1-Dichloroethane	7.69	63	105514	9.46 ug/l	99
15) Methyl Ethyl Ketone	8.46	43	20993	41.59 ug/l	100
16) 2,2-Dichloropropane	8.70	77	178248	10.66 ug/l	98
17) 1,2-Dichloroethene (cis-)	8.77	96	109857	12.16 ug/l	95
18) Bromochloromethane	9.38	130	68332	9.39 ug/l	84
19) Chloroform	9.06	83	201294	10.77 ug/l	99
20) 1,1-Dichloropropene	10.14	75	164091	9.84 ug/l	98
21) 1,2-Dichloroethane	10.62	62	80552	9.48 ug/l	97
22) 1,1,1-Trichloroethane	9.85	97	223942	9.99 ug/l	96
23) Carbon Tetrachloride	10.35	117	215457	10.29 ug/l	99
24) Benzene	10.68	78	274217	9.12 ug/l	100
25) Trichloroethene	11.93	130	156345	9.74 ug/l	95
26) 1,2-Dichloropropane	12.30	63	91781	8.88 ug/l	51
27) Dibromomethane	12.93	174	67897	9.02 ug/l	81
28) Bromodichloromethane	12.81	83	170915	9.00 ug/l	96
29) Methyl Isobutyl Ketone	13.58	43	67789	32.54 ug/l	91
30) cis-1,3-Dichloropropene	14.03	75	117477	8.67 ug/l	97
31) trans-1,3-Dichloropropene	15.26	75	83311	8.67 ug/l	98
32) 1,3-Dichloropropane	16.32	76	83427	8.81 ug/l	97
33) Dibromochloromethane	16.98	129	119877	8.84 ug/l	99
34) Bromoform	20.70	173	60421	8.93 ug/l	100
35) Toluene	14.83	92	205026	9.11 ug/l	98
36) 1,1,2-Trichloroethane	15.67	97	59621	8.72 ug/l	99
37) Tetrachloroethene	16.49	164	166123	10.03 ug/l	95
38) 1,2-Dibromoethane	17.48	107	86014	8.99 ug/l	99

(#) = qualifier out of range (m) = manual integration

W6689.D 524JL.M

Tue Jul 23 11:08:41 1996

VOA3

002181

Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6689.D
Acq Time : 23 Jul 96 10:35 am
Sample : 50PPB-QCCS-1/B#96425
Misc : 10ML/VO9507015,
Quant Time: Jul 23 11:08 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Chlorobenzene	18.50	112	275655	9.24	ug/l	99
40) 1,1,1,2-Tetrachloroethane	18.61	131	128621	9.23	ug/l	96
41) Ethylbenzene	18.64	106	141432	9.50	ug/l	97
42) m,p-Xylenes	18.83	106	337264	18.70	ug/l	94
43) o-Xylene	19.85	106	152918	9.07	ug/l	94
44) Styrene	19.93	104	236100	9.20	ug/l	97
46) Isopropylbenzene	20.69	105	493644	9.65	ug/l	97
48) Bromobenzene	21.78	77	231326	9.01	ug/l	94
49) 1,1,2,2-Tetrachloroethane	21.10	83	65892	8.39	ug/l	98
50) 1,2,3-Trichloropropane	21.47	75	40649	9.45	ug/l	88
51) n-Propylbenzene	21.70	91	591412	9.64	ug/l	94
52) 2-Chlorotoluene	22.10	91	384276	9.29	ug/l	92
53) 4-Chlorotoluene	22.22	91	354254	9.63	ug/l	85
54) 1,3,5-Trimethylbenzene	22.08	105	352186	9.41	ug/l	96
55) Tert-Butylbenzene	22.90	119	406640	9.76	ug/l	98
56) 1,2,4-Trimethylbenzene	22.98	105	347650	9.21	ug/l	96
57) Sec-Butylbenzene	23.37	105	595846	9.71	ug/l	97
58) 1,3-Dichlorobenzene	23.84	146	231187	9.00	ug/l	99
59) 1,4-Dichlorobenzene	24.07	146	237721	9.20	ug/l	99
60) p-Isopropyltoluene	23.67	119	458375	9.77	ug/l	99
61) 1,2-Dichlorobenzene	24.82	146	183825	9.02	ug/l	97
62) n-Butylbenzene	24.52	91	452473	9.50	ug/l	97
63) 1,2-Dibromo-3-Chloropropan	26.31	75	12088	9.17	ug/l	76
64) 1,2,4-Trichlorobenzene	28.02	180	162293	8.71	ug/l	96
65) Naphthalene	28.56	128	139753	9.01	ug/l	96
66) Hexachlorobutadiene	28.32	225	160923	9.47	ug/l	83
67) 1,2,3-Trichlorobenzene	29.13	180	126138	8.82	ug/l	98

002182

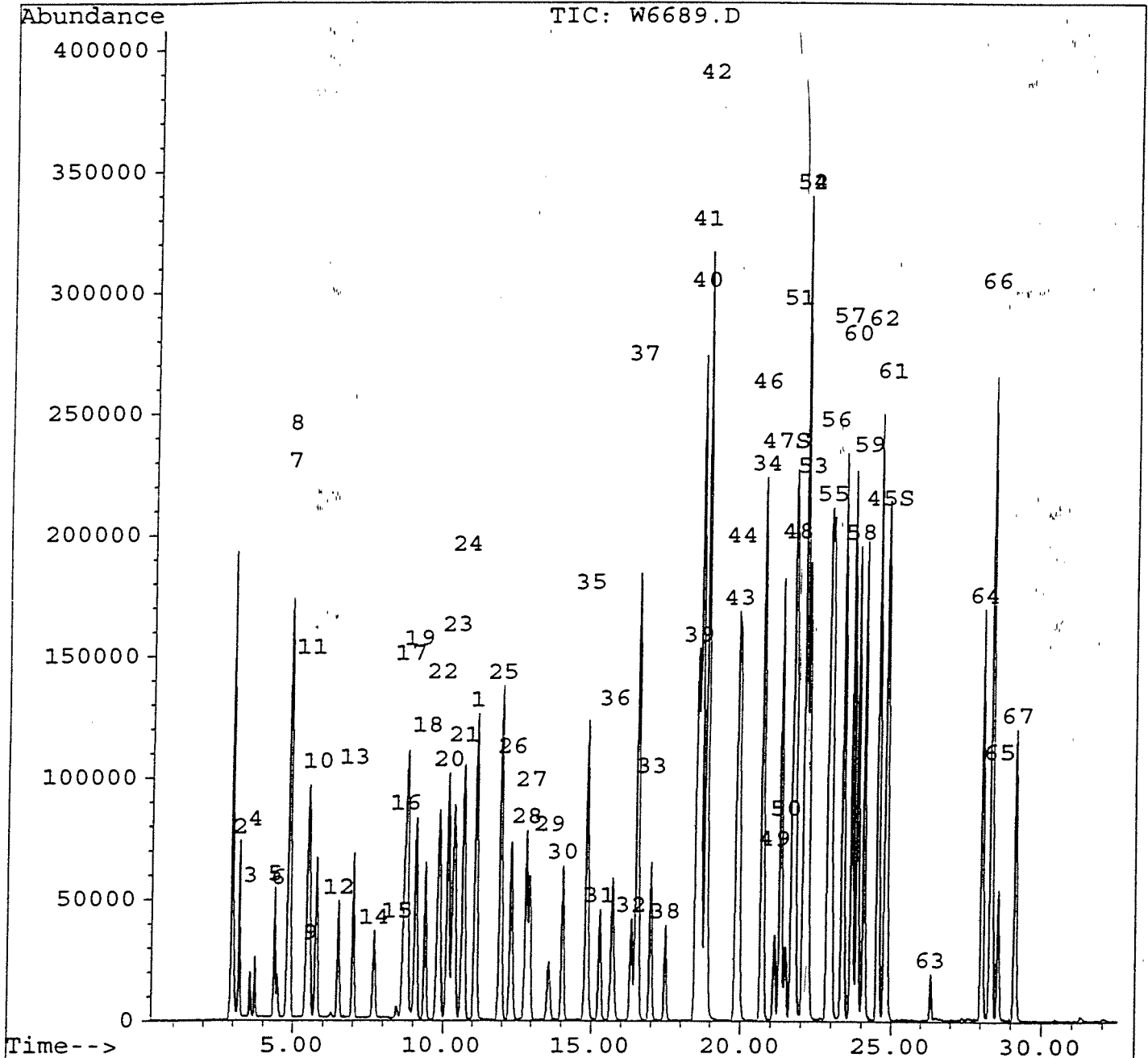
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6689.D
 Acq Time : 23 Jul 96 10:35 am
 Sample : 50PPB-QCCS-1/B#96425
 Misc : 10ML/VO9507015,
 Quant Time: Jul 23 11:08 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration



002183

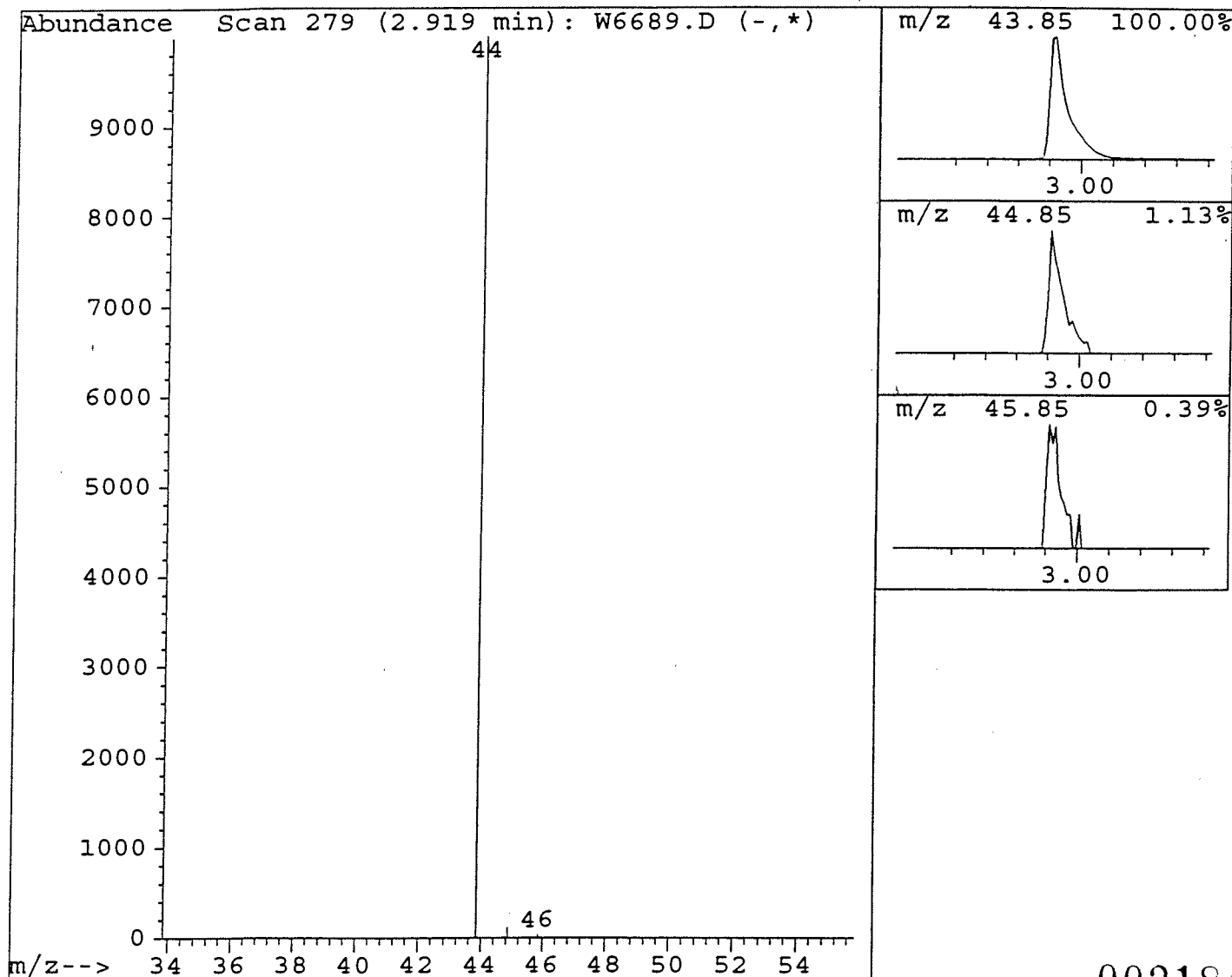
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6689.D
Acq Time : 23 Jul 96 10:35 am
Sample : 50PPB-QCCS-1/B#96425
Misc : 10ML/VO9507015,

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JL.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.92	9.57 ug/l	758407	Fluorobenzene	11.09	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 No Hits From C:\DATABASE\NBS75K.L			0	000000-00-0	0



002184

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6692.D
Acq Time : 23 Jul 96 12:21 pm
Sample : METHOD BLANK/B#96426
Misc : 10ML/VO9607019=IS+SS
Quant Time: Jul 23 12:54 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration *1=07-1766*

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Mir)
1) Fluorobenzene	11.06	96	385361	10.00	ug/l	-0.06

System Monitoring Compounds					%Recovery
45) 1,2-Dichlorobenzene-d4	24.78	150	202991	9.15	ug/l 91.53
47) Bromofluorobenzene	21.32	95	205751	9.84	ug/l 98.41

Target Compounds					Qvalue
9) Acetone	5.53	43	462	1.41 3.98	ug/l # 100
12) Methylene Chloride	6.44	84	21716	3.98	ug/l # 92
21) 1,2-Dichloroethane	11.06	62	4946	0.59 23.33	ug/l # 48
50) 1,2,3-Trichloropropane	21.32	75	98728	23.33	ug/l # 39
65) Naphthalene	28.60	128	4924	0.32 0.32	ug/l # 81

07/23/96 = lab contamination

BATCH #

DATE

ANALYST

REVIEWED & APPROVED

BY *JS* DATE *7/23/96*

002185

(#) = qualifier out of range (m) = manual integration

W6692.D 524JLS.M

Tue Jul 23 12:54:38 1996

VOA3

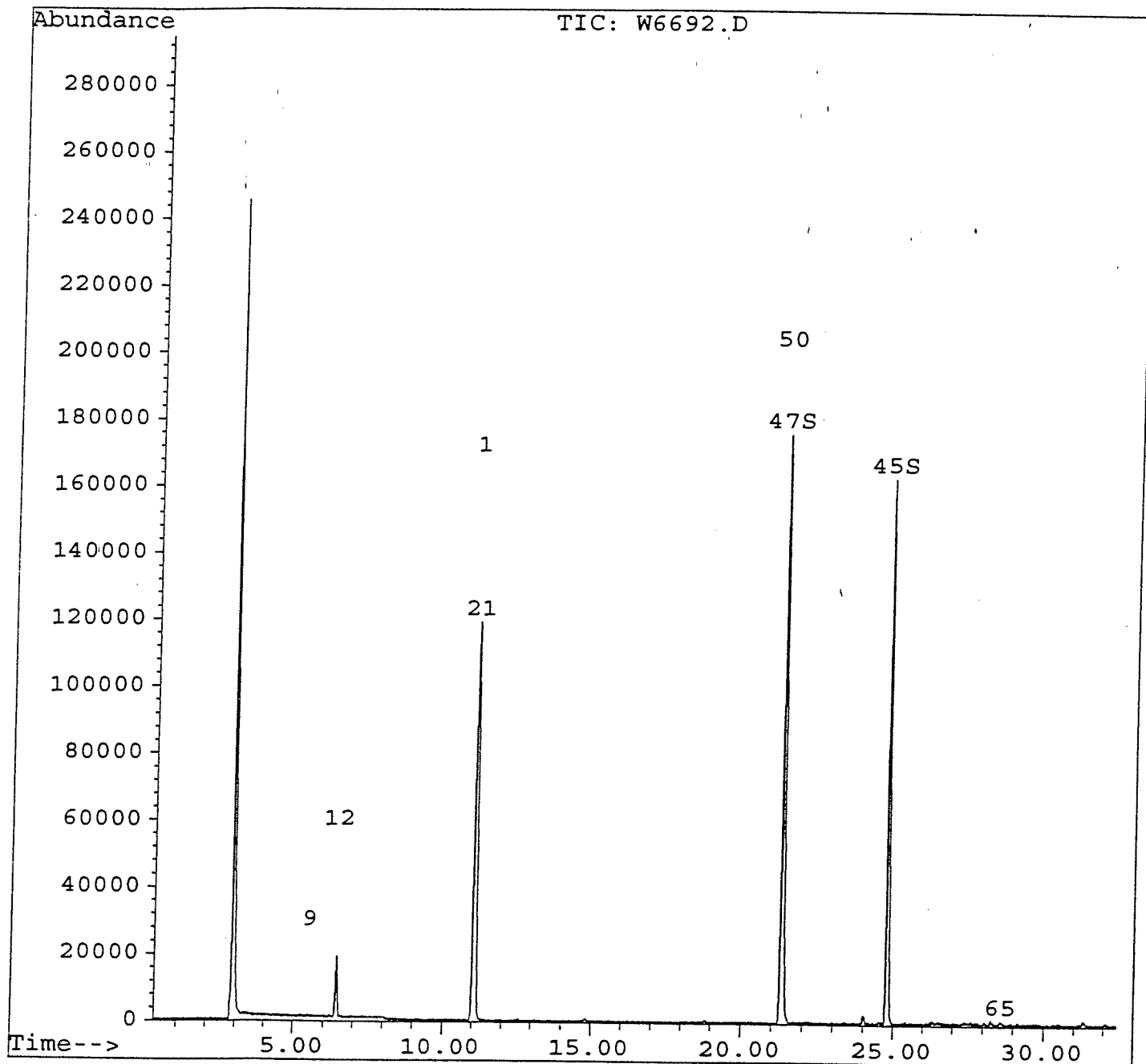
Page 1

Quantitation Report

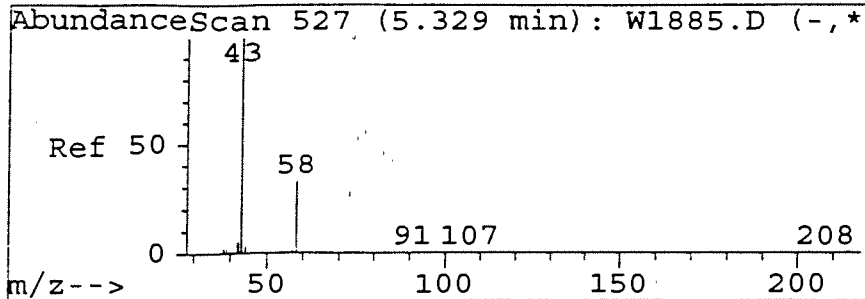
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Acq Time : 23 Jul 96 12:21 pm
Sample : METHOD BLANK/B#96426
Misc : 10ML/VO9607019=IS+SS
Quant Time: Jul 23 12:54 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

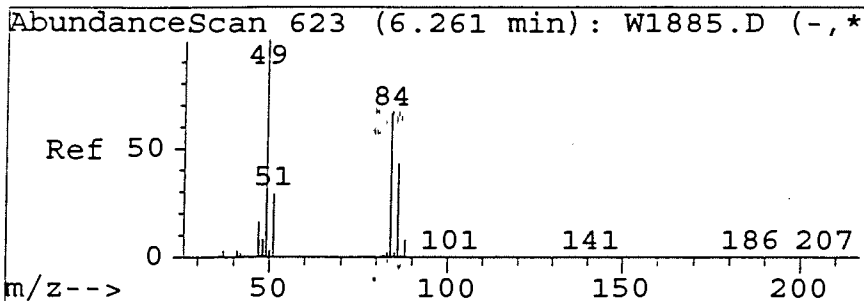
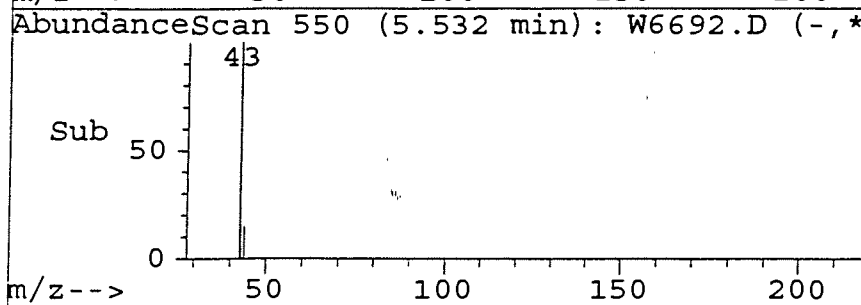
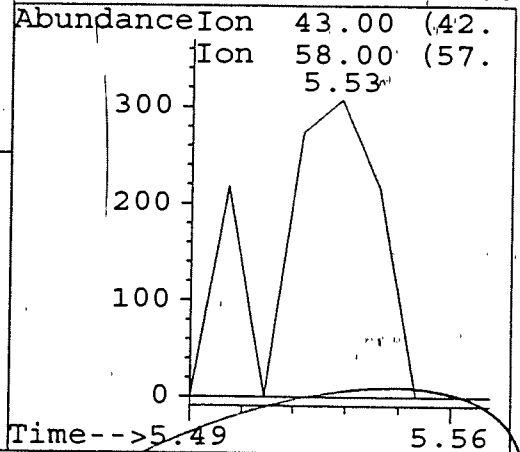
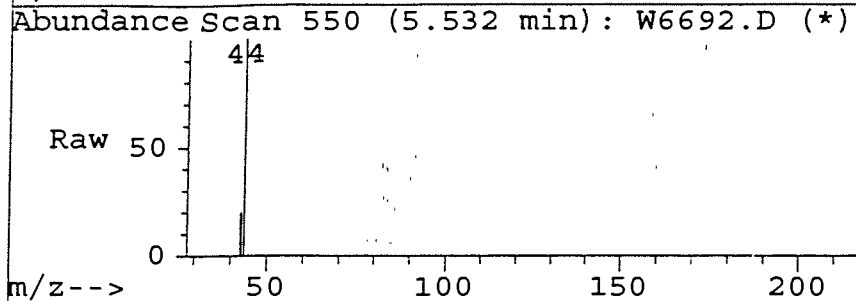


002186



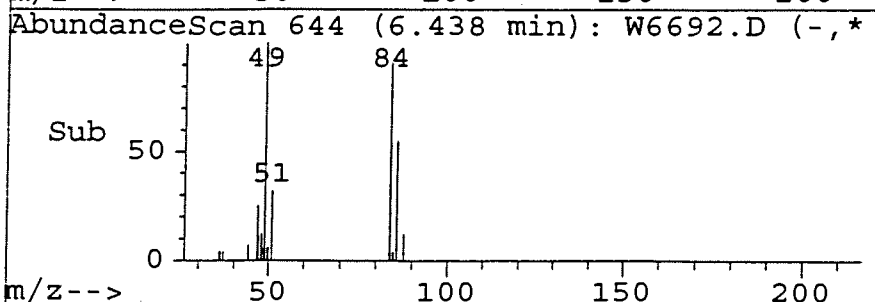
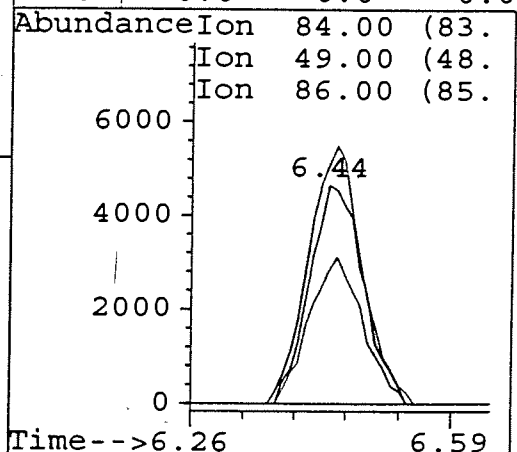
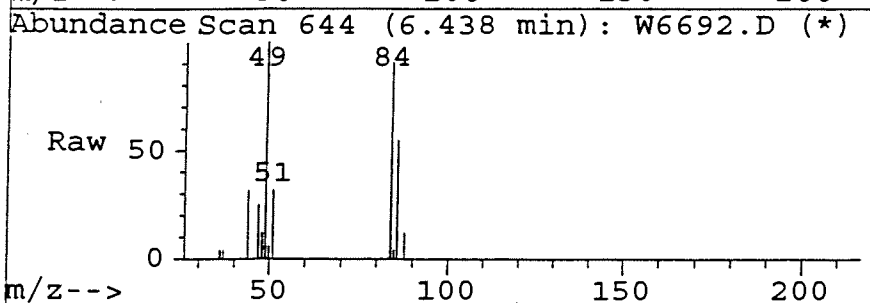
#9
Acetone
Concen: 1.41 ug/l
RT: 5.53 min Scan# 550
Delta R.T. - -0.10 min
Lab File: W6692.D
Acq: 23 Jul 96 12:21 pm

Tgt Ion:43	Resp:	462
Ion Ratio	Lower	Upper
43	100	
58	0.0	50.0
0	0.0	0.0
0	0.0	0.0

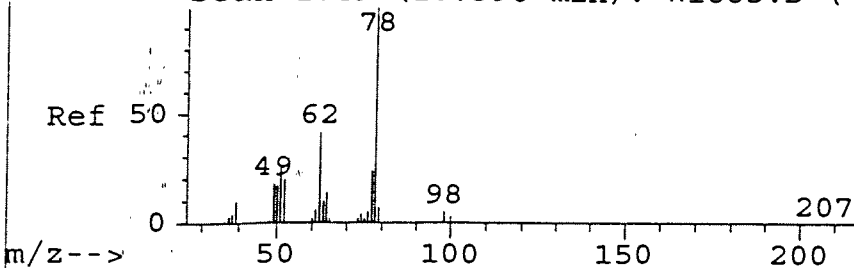


#12
Methylene Chloride
Concen: 3.98 ug/l
RT: 6.44 min Scan# 644
Delta R.T. -0.16 min
Lab File: W6692.D
Acq: 23 Jul 96 12:21 pm

Tgt Ion:84	Resp:	21716
Ion Ratio	Lower	Upper
84	100	
49	118.4	221.6
86	66.5	157.2
0	0.0	0.0



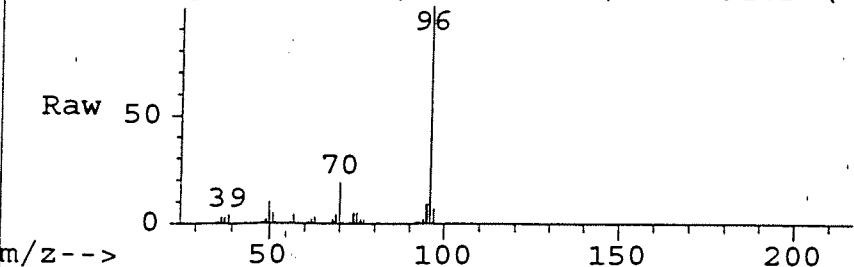
AbundanceScan 1049 (10.390 min): W1885.D (-



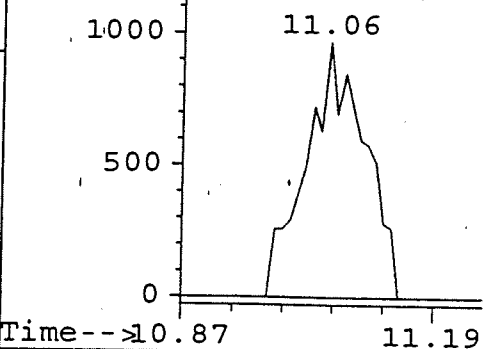
#21
1,2-Dichloroethane.
Concen: 0.59 ug/l
RT: 11.06 min Scan# 1123
Delta R.T. -0.22 min
Lab File: W6692.D
Acq: 23 Jul 96 12:21 pm

Tgt Ion:	62	Resp:	4946
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0

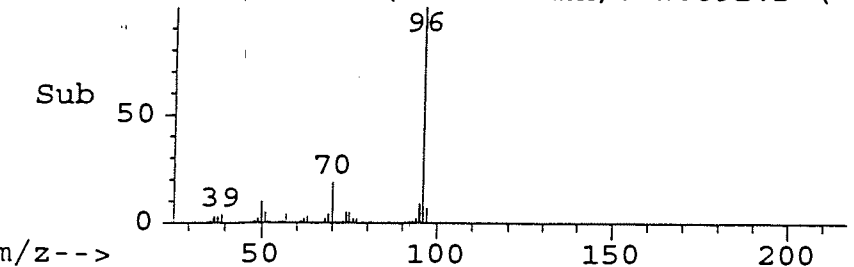
AbundanceScan 1123 (11.055 min): W6692.D (*)



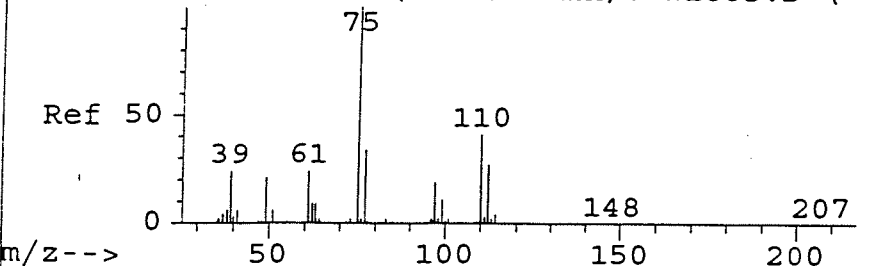
AbundanceIon 62.00 (61.
Ion 64.00 (63.
Ion 98.00 (97.



AbundanceScan 1123 (11.055 min): W6692.D (-



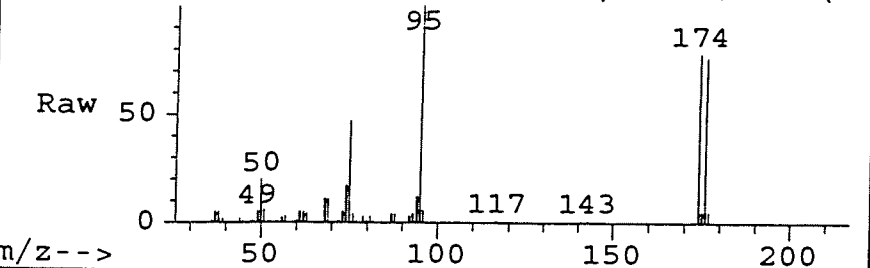
AbundanceScan 2174 (21.295 min): W1885.D (-



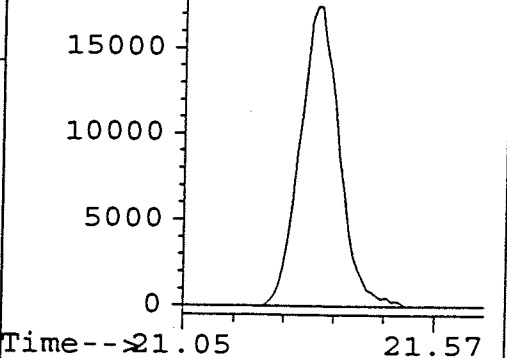
#50
1,2,3-Trichloropropane
Concen: 23.33 ug/l
RT: 21.32 min Scan# 2188
Delta R.T. -0.21 min
Lab File: W6692.D
Acq: 23 Jul 96 12:21 pm

Tgt Ion:	75	Resp:	98728
Ion	Ratio	Lower	Upper
75	100		
110	0.0	0.0	86.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0

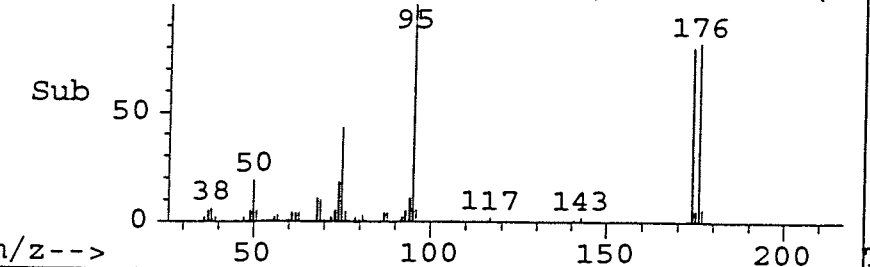
AbundanceScan 2188 (21.323 min): W6692.D (*)

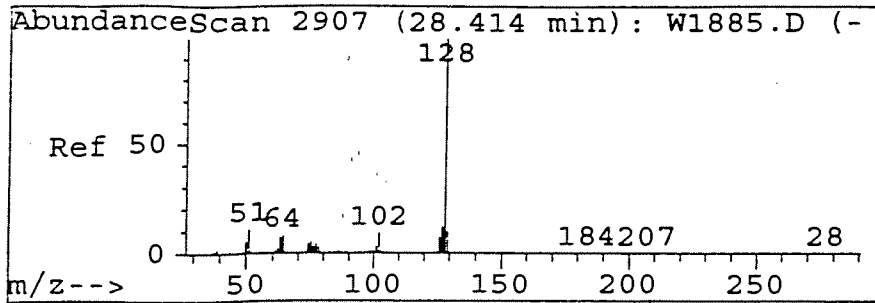


AbundanceIon 75.00 (74.
Ion 110.00 (109
21.32

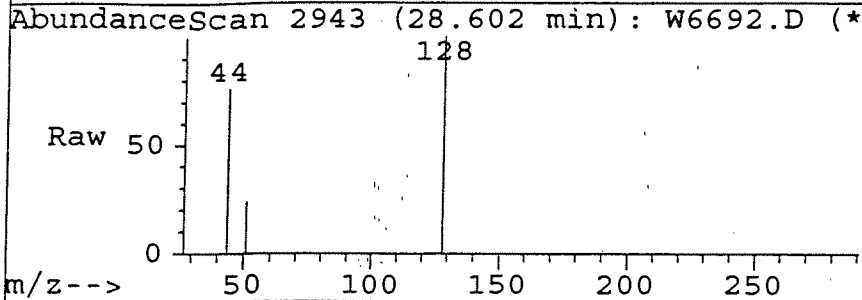


AbundanceScan 2188 (21.323 min): W6692.D (-

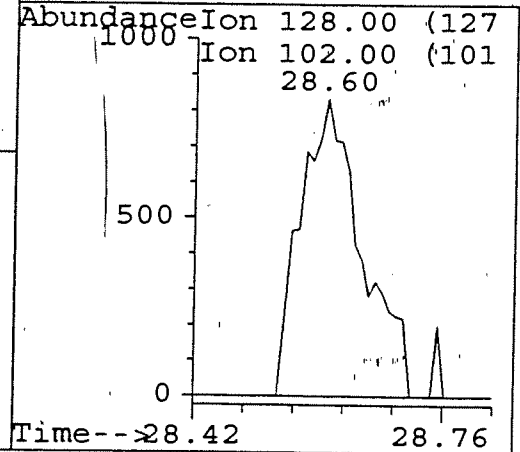
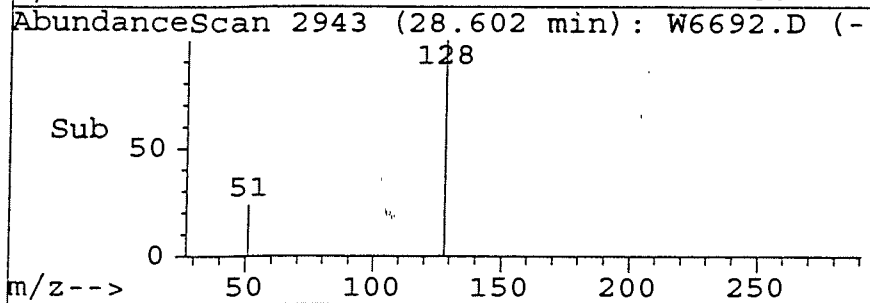




#65
Naphthalene
Concen: 0.32 ug/l
RT: 28.60 min Scan# 2943
Delta R.T. - -0.22 min
Lab File: W6692.D
Acq: 23 Jul 96 12:21 pm



Tgt Ion:	128	Resp:	4924
Ion	Ratio	Lower	Upper
128	100		
102	0.0	0.0	81.5
0	0.0	0.0	0.0
0	0.0	0.0	0.0



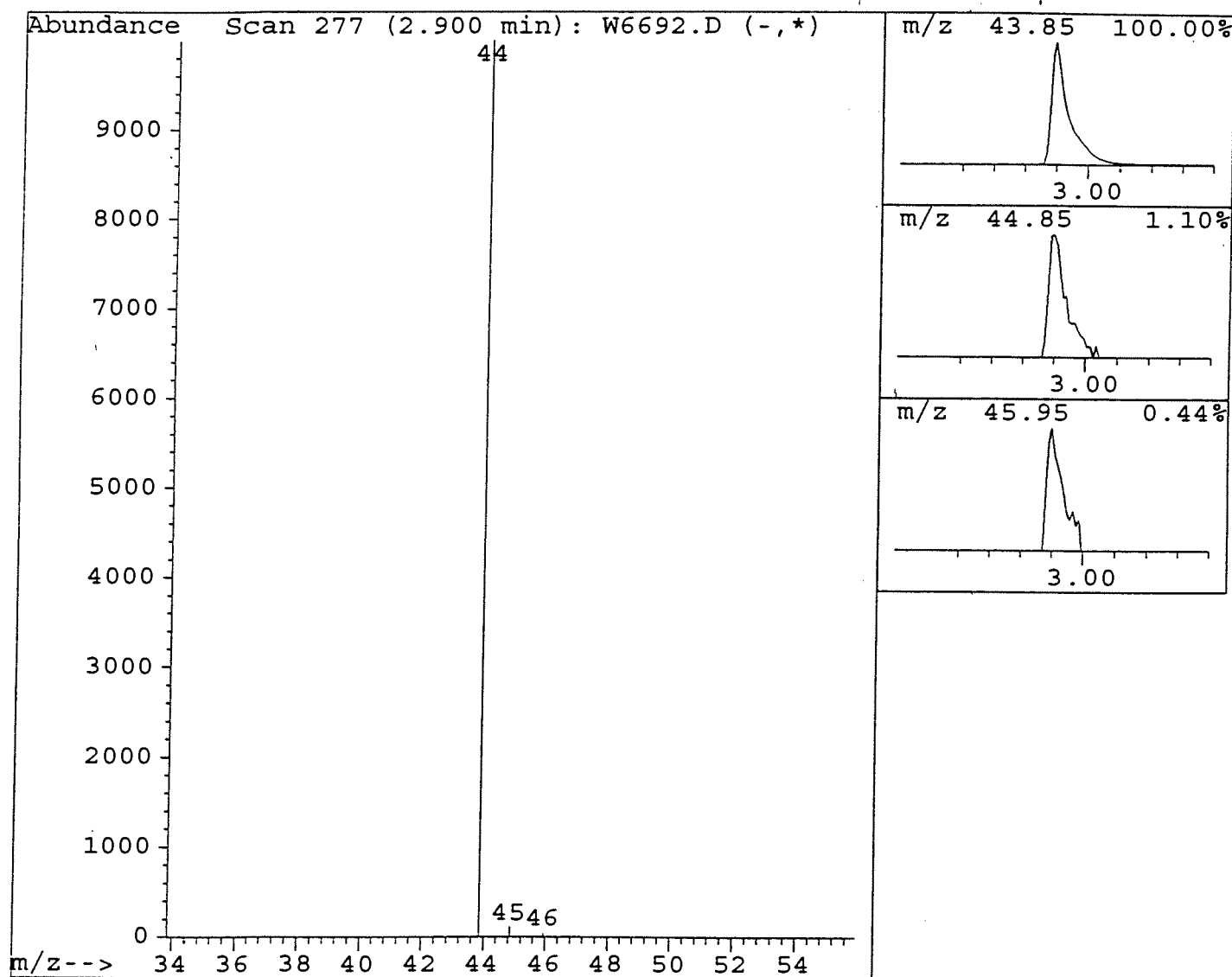
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6692.D
Acq Time : 23 Jul 96 12:21 pm
Sample : METHOD BLANK/B#96426
Misc : 10ML/VO9607019=IS+SS

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.90	11.39 ug/l	885015	Fluorobenzene	11.06	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L			0 000000-00-0	0



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Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6693.D
Acq Time : 23 Jul 96 12:56 pm
Sample : G9607215-6(1C)/B#96426
Misc : 25ML/TRIP BLK/ALLIED SIGNAL
Quant Time: Jul 23 13:29 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Mi
1) Fluorobenzene	11.11	96	355065	10.00	ug/l	0.0
					%Recover	
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.79	150	186058	9.11	ug/l	91.0
47) Bromofluorobenzene	21.33	95	189233	9.82	ug/l	98.2
					Ovalu	
Target Compounds						
8) Trichlorofluoromethane	4.86	101	30763	1.79	ug/l	9
9) Acetone	5.63	43	246	0.81	ug/l	# 10
11) Freon 113	5.51	101	7435	0.49	ug/l	9
12) Methylene Chloride	6.52	84	7276	1.45	ug/l	9
21) 1,2-Dichloroethane	11.11	62	4246	0.55	ug/l	# 4
50) 1,2,3-Trichloropropane	21.33	75	84305	21.62	ug/l	# 3
65) Naphthalene	28.62	128	3683	0.26	ug/l	# 8

*CHiller confirm a SX was run twice on
different bt vial, different day
use as ref*

BATCH # 96426
DATE 07/23/96
ANALYST mm

002191

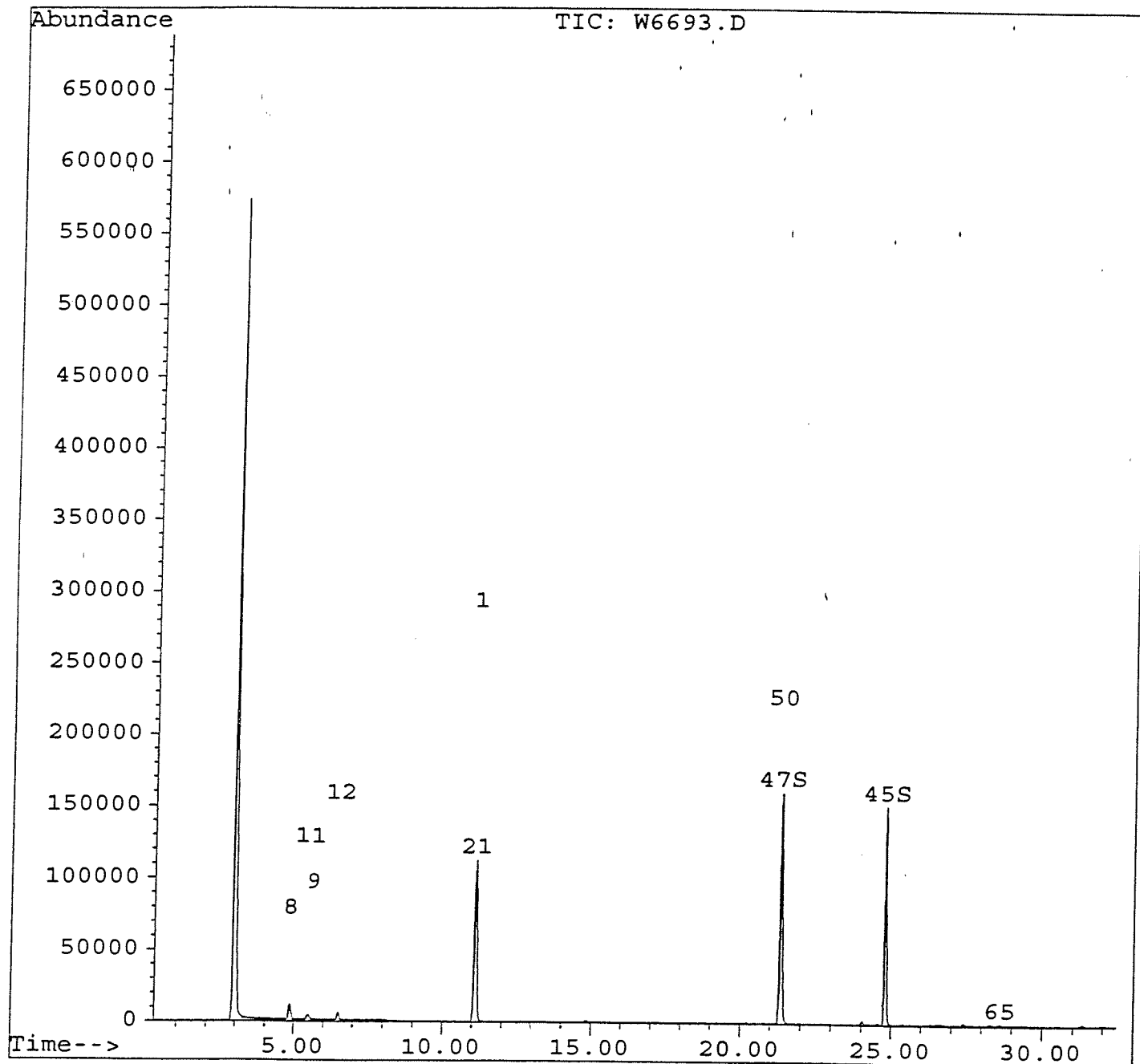
(#) = qualifier out of range (m) = manual integration

Quantitation Report

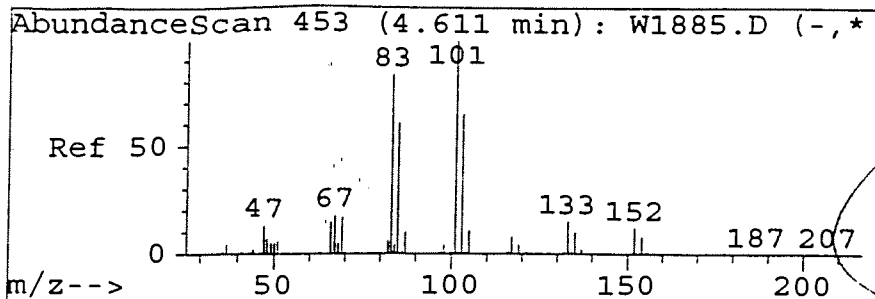
Data File : C:\HPCHEM\1\DATA\JUL23\W6693.D
Acq Time : 23 Jul 96 12:56 pm
Sample : G9607215-6(1C)/B#96426
Misc : 25ML/TRIP BLK/ALLIED SIGNAL
Quant Time: Jul 23 13:29 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

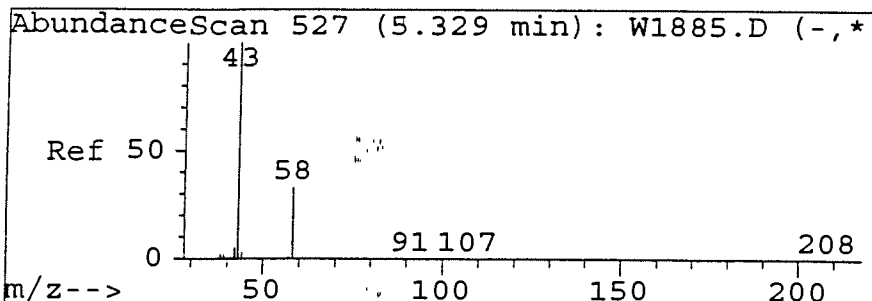
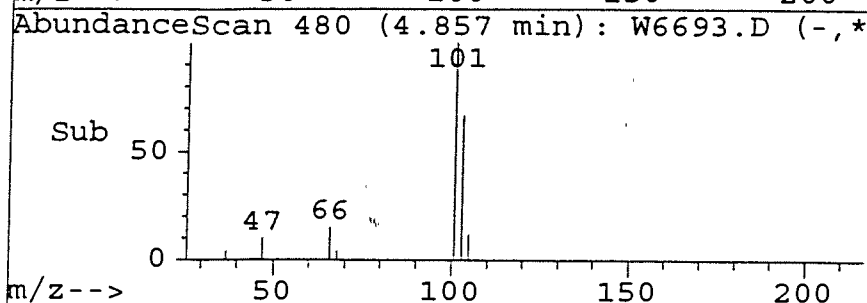
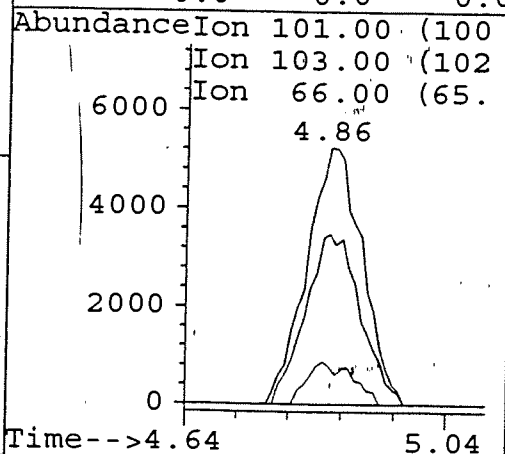
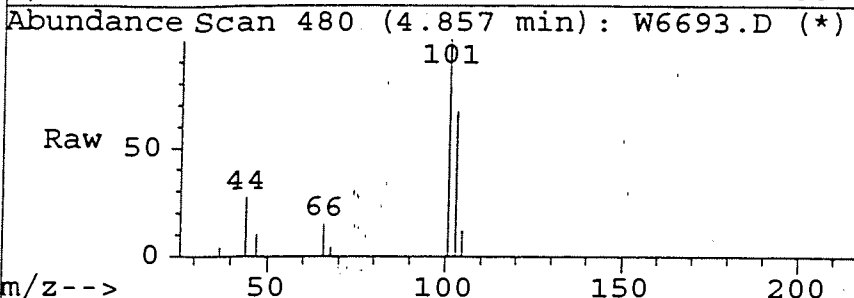


002192



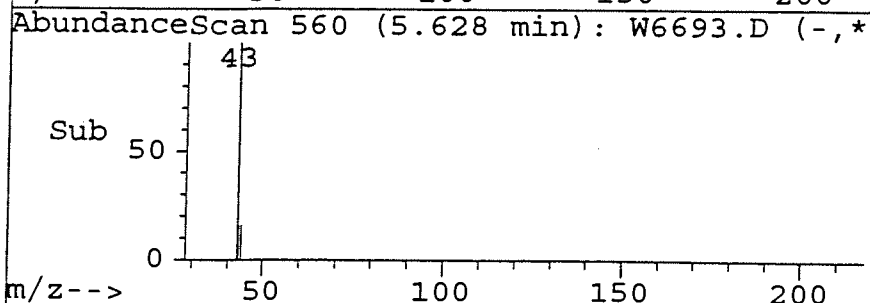
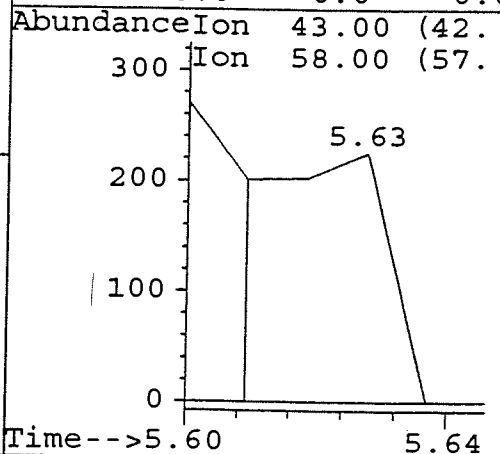
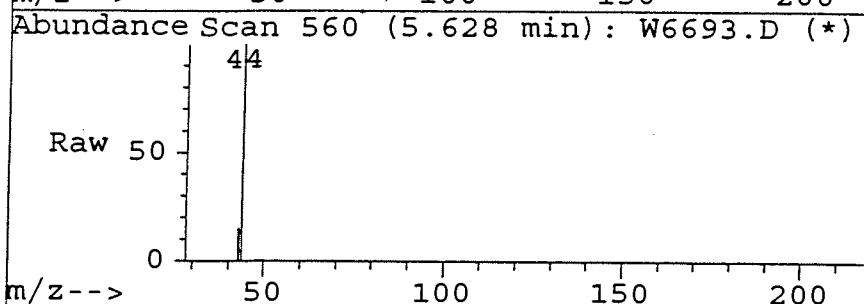
#8
Trichlorofluoromethane
Concen: 1.79 ug/l
RT: 4.86 min Scan# 480
Delta R.T. - -0.01 min
Lab File: W6693.D
Acq: 23 Jul 96 12:56 pm

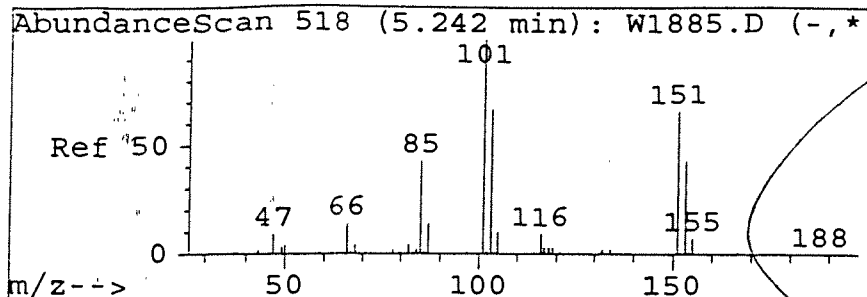
Tgt Ion:	101	Resp:	30763
Ion	Ratio	Lower	Upper
101	100		
103	65.7	15.6	115.6
66	13.7	0.0	65.8
0	0.0	0.0	0.0



#9
Acetone
Concen: 0.81 ug/l
RT: 5.63 min Scan# 560
Delta R.T. -0.00 min
Lab File: W6693.D
Acq: 23 Jul 96 12:56 pm

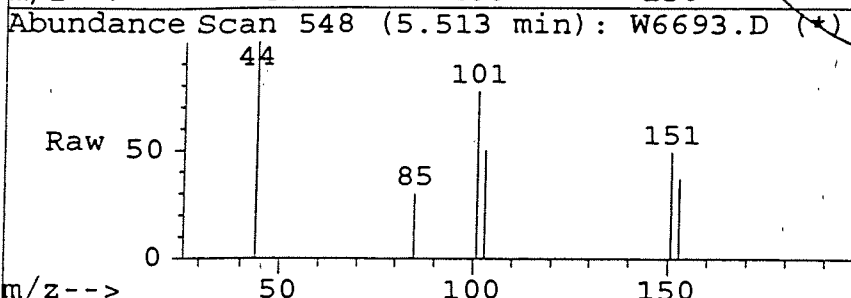
Tgt Ion:	43	Resp:	246
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	50.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



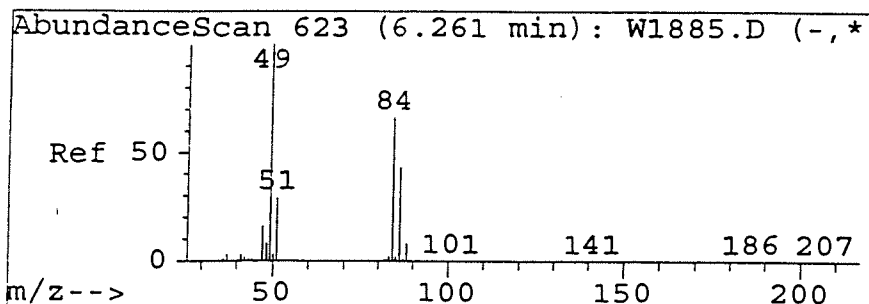
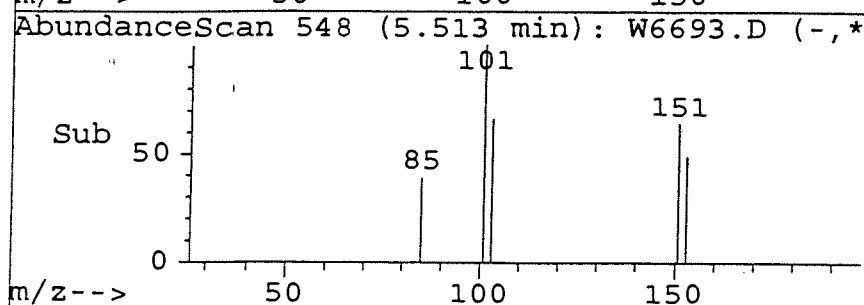
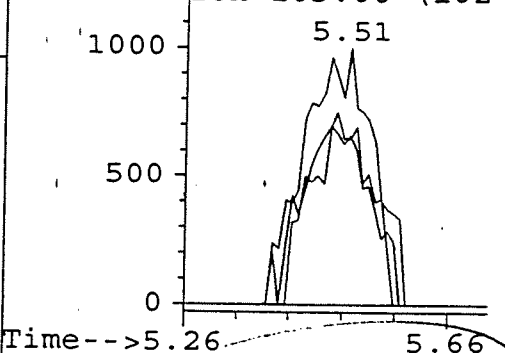


#11
 Freon 113
 Concen: 0.49 ug/l
 RT: 5.51 min Scan# 548
 Delta R.T. -0.03 min
 Lab File: W6693.D
 Acq: 23 Jul 96 12:56 pm

Tgt Ion:101	Resp:	7435
Ion Ratio	Lower	Upper
101	100	
151	68.0	45.9 85.9
103	61.7	46.7 86.7
0	0.0	0.0 0.0

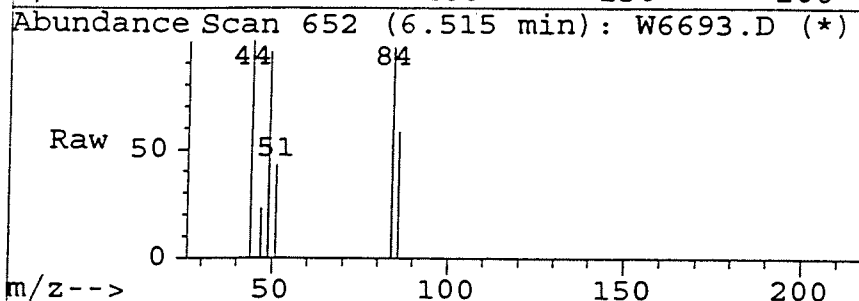


AbundanceIon 101.00 (100
 Ion 151.00 (150
 Ion 103.00 (102

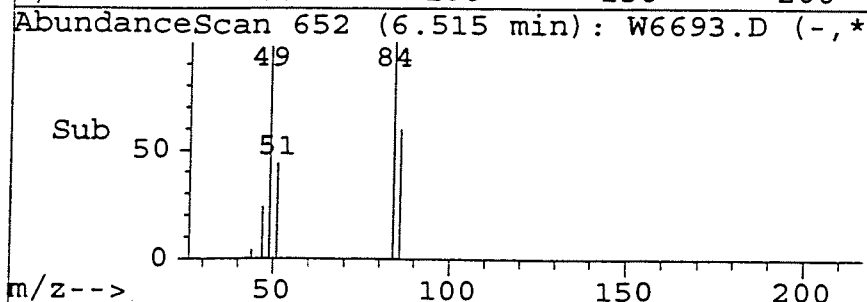
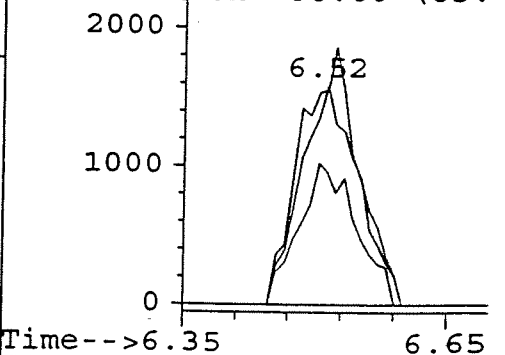


#12
 Methylene Chloride
 Concen: 1.45 ug/l
 RT: 6.52 min Scan# 652
 Delta R.T. -0.08 min
 Lab File: W6693.D
 Acq: 23 Jul 96 12:56 pm

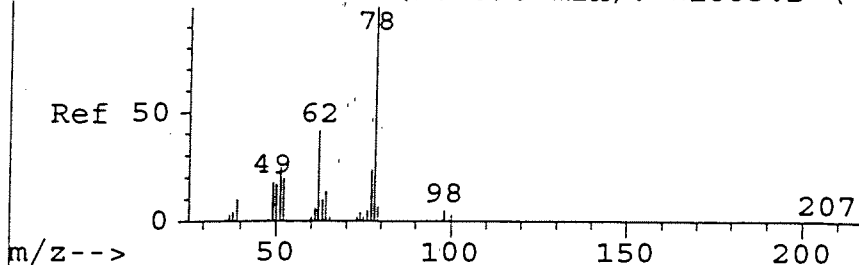
Tgt	Ion:84	Resp:	7276
Ion	Ratio	Lower	Upper
84	100		
49	117.1	41.6	221.6
86	63.9	0.0	157.2
0	0.0	0.0	0.0



AbundanceIon 84.00 (83.
 Ion 49.00 (48.
 Ion 86.00 (85.



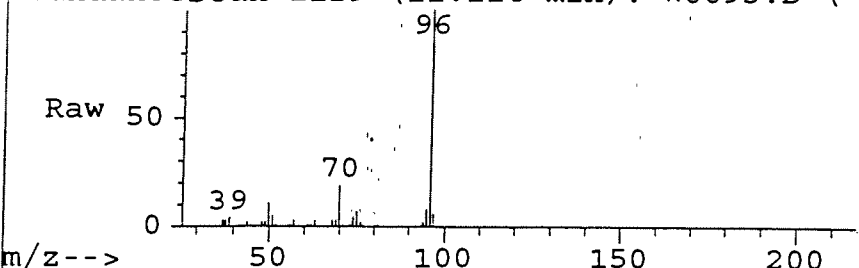
AbundanceScan 1049 (10.390 min): W1885.D (-



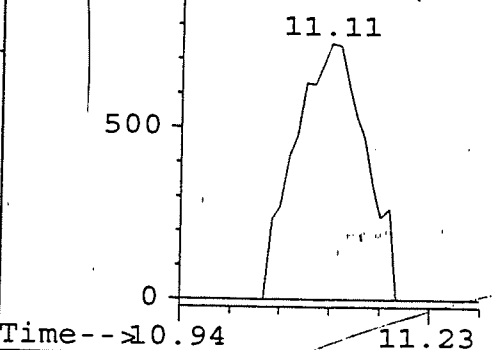
#21
1,2-Dichloroethane
Concen: 0.55 ug/l
RT: 11.11 min Scan# 1129
Delta R.T. - 0.27 min
Lab File: W6693.D
Acq: 23 Jul 96 12:56 pm

Tgt Ion:	62	Resp:	4246
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0

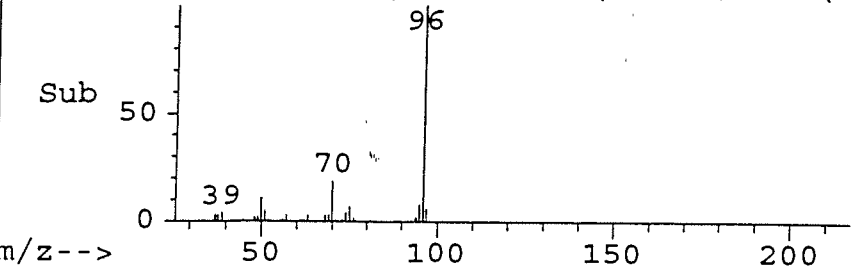
AbundanceScan 1129 (11.114 min): W6693.D (*



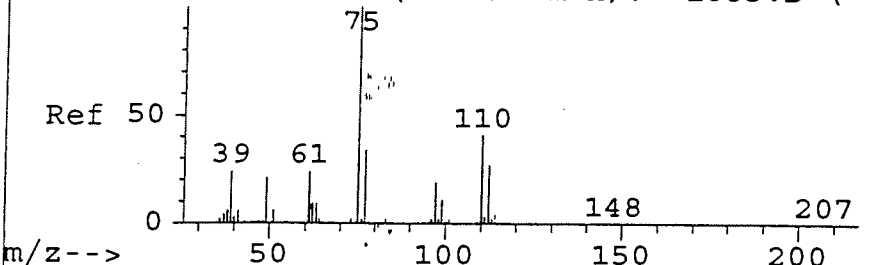
Abundance	Ion	62.00	(61.
1000	Ion	64.00	(63.
	Ion	98.00	(97.



AbundanceScan 1129 (11.114 min): W6693.D (-



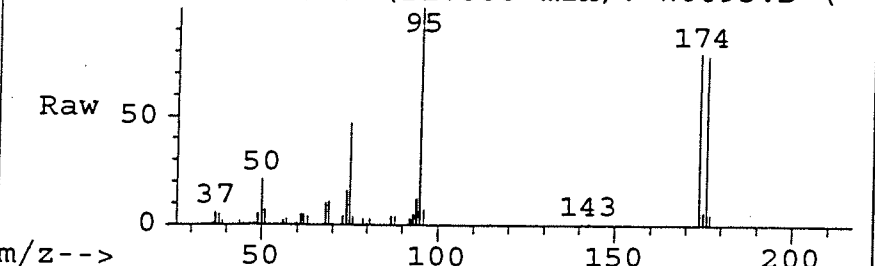
AbundanceScan 2174 (21.295 min): W1885.D (-



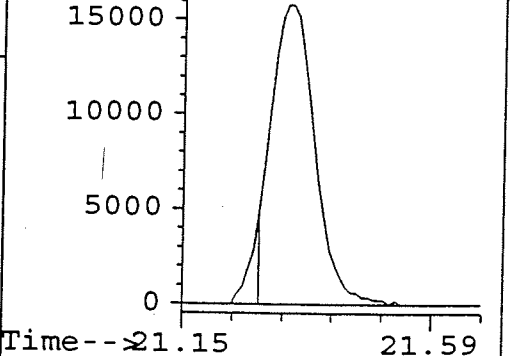
#50
1,2,3-Trichloropropane
Concen: 21.62 ug/l
RT: 21.33 min Scan# 2189
Delta R.T. -0.20 min
Lab File: W6693.D
Acq: 23 Jul 96 12:56 pm

Tgt Ion:	75	Resp:	84305
Ion	Ratio	Lower	Upper
75	100		
110	0.0	0.0	86.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0

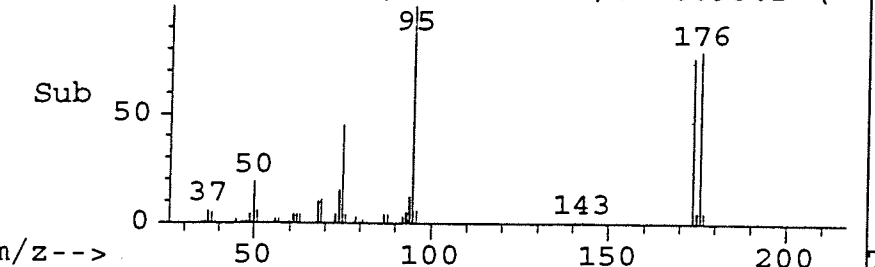
AbundanceScan 2189 (21.333 min): W6693.D (*



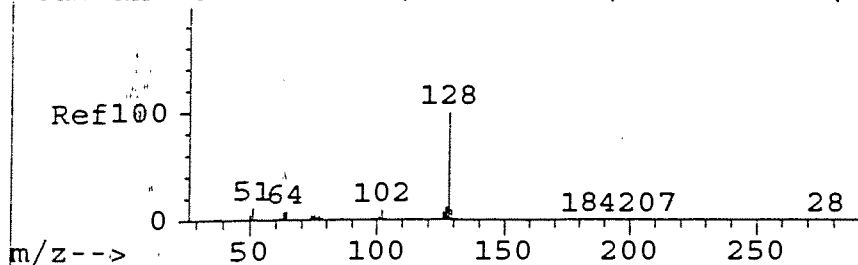
Abundance	Ion	75.00	(74.
	Ion	110.00	(109



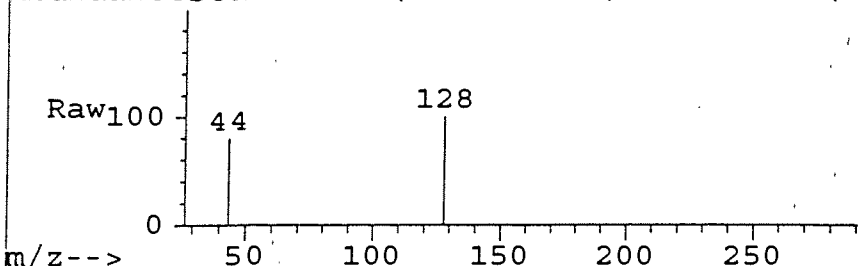
AbundanceScan 2189 (21.333 min): W6693.D (-



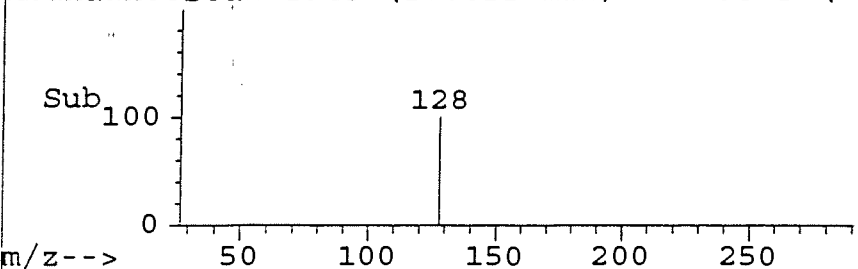
AbundanceScan 2907 (28.414 min): W1885.D (-



AbundanceScan 2945 (28.622 min): W6693.D (*)



AbundanceScan 2945 (28.622 min): W6693.D (-



#65

Naphthalene

Concen: 0.26 ug/l

RT: 28.62 min Scan# 2945

Delta R.T. -0.20 min

Lab File: W6693.D

Acq: 23 Jul 96 12:56 pm

Tgt Ion:128 Resp: 3683

Ion Ratio Lower Upper

128 100

102 0.0 0.0 81.5

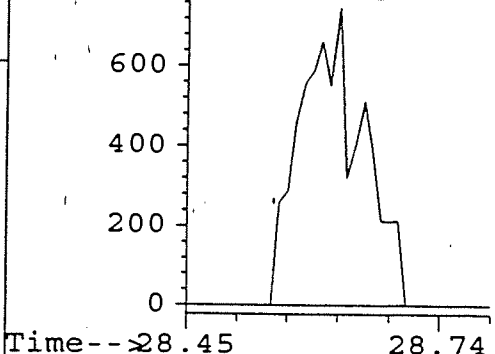
0 0.0 0.0 0.0

0 0.0 0.0 0.0

AbundanceIon 128.00 (127

Ion 102.00 (101

28.62



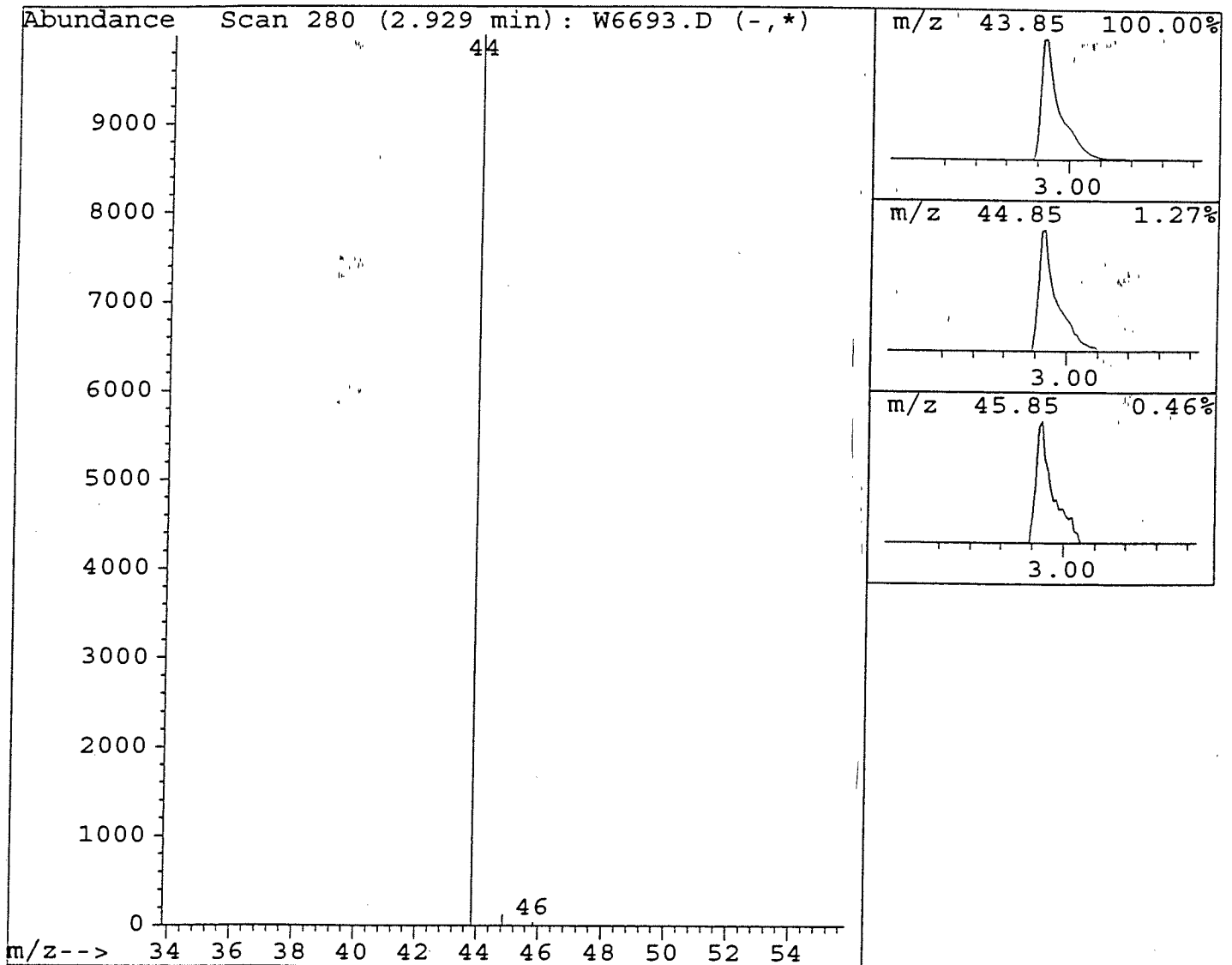
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6693.D
 Acq Time : 23 Jul 96 12:56 pm
 Sample : G9607215-6(1C)/B#96426
 Misc : 25ML/TRIP BLK/ALLIED SIGNAL

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.93	32.22 ug/l	2306478	Fluorobenzene	11.11	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L		0	000000-00-0	0



002197

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6694.D
 Acq Time : 23 Jul 96 1:31 pm
 Sample : G9607215-3 (5D)/B#96426
 Misc : DF=500/50UL:25ML/GW-10/ALLIED SIGNAL
 Quant Time: Jul 23 14:04 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Mir)
1) Fluorobenzene	11.08	96	382814	10.00	ug/l	-0.04
System Monitoring Compounds						%Recovery
45) 1,2-Dichlorobenzene-d4	24.80	150	204774	9.30	ug/l	92.95
47) Bromofluorobenzene	21.33	95	205311	9.88	ug/l	98.85
Target Compounds						Qvalue
9) Acetone	5.56	43	395	1.21	ug/l	# 100
11) Freon 113	5.46	101	6306	0.38	ug/l	91
12) Methylene Chloride	6.49	84	8206	1.51	ug/l	94
17) 1,2-Dichloroethene (cis-)	8.76	96	3393	0.38	ug/l	98
19) Chloroform	9.05	83	4737	0.26	ug/l	91
21) 1,2-Dichloroethane	11.08	62	4669	0.56	ug/l	# 48
22) 1,1,1-Trichloroethane	9.81	97	3934	0.18	ug/l	# 64
25) Trichloroethene	11.93	130	347349	22.14	ug/l	11000 96
37) Tetrachloroethene	16.52	164	3345	0.21	ug/l	93
50) 1,2,3-Trichloropropane	21.33	75	100601	23.93	ug/l	# 39
65) Naphthalene	28.60	128	2943	0.19	ug/l	# 81

Report TCE ONLY

BATCH # 96426
 DATE 07/23/96
 ANALYST mm

REVIEWED & APPROVED

BY _____ DATE _____

002198

(#) = qualifier out of range (m) = manual integration

W6694.D 524JLS.M

Tue Jul 23 14:05:03 1996

VOA3

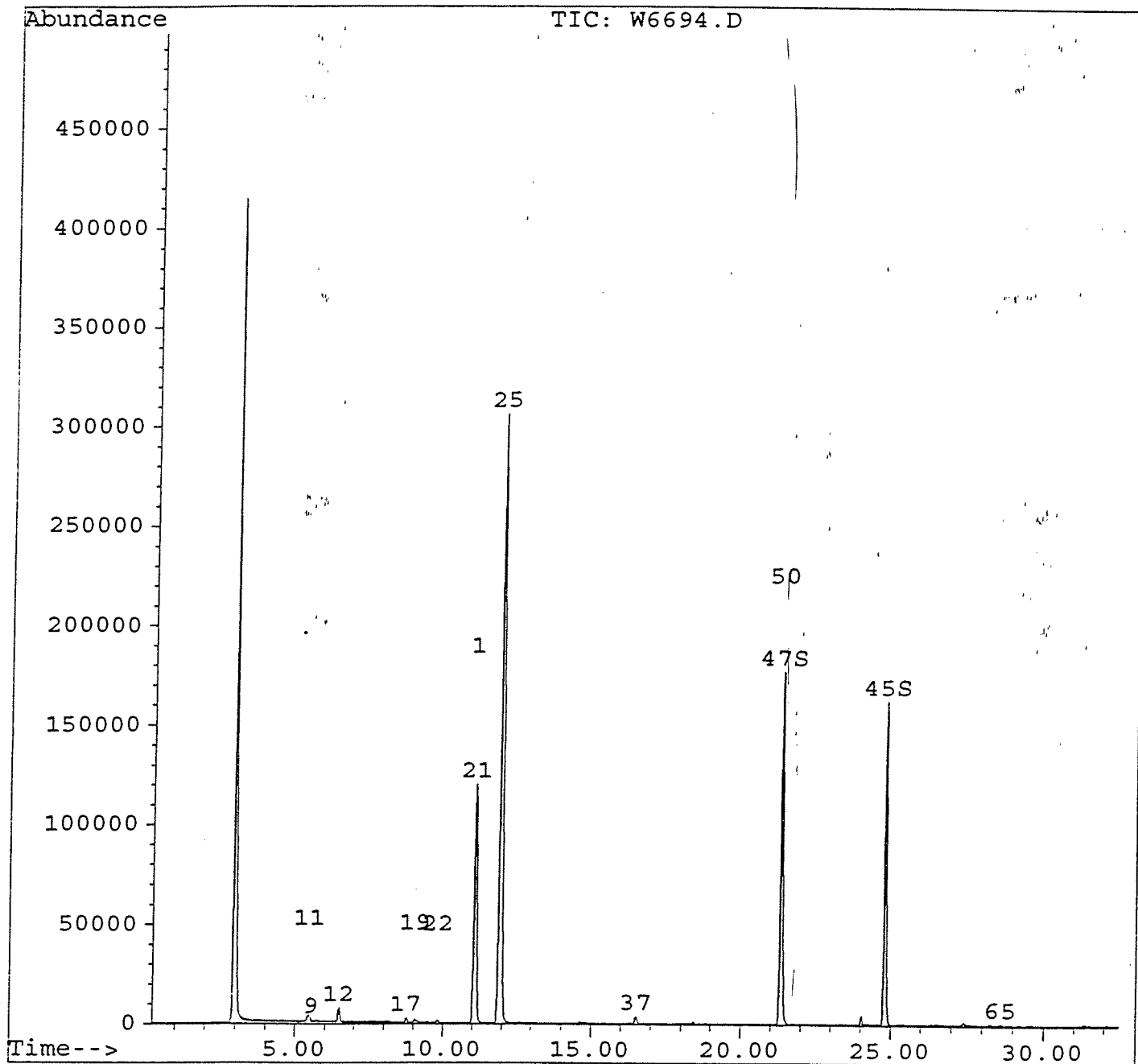
Page 1

Quantitation Report

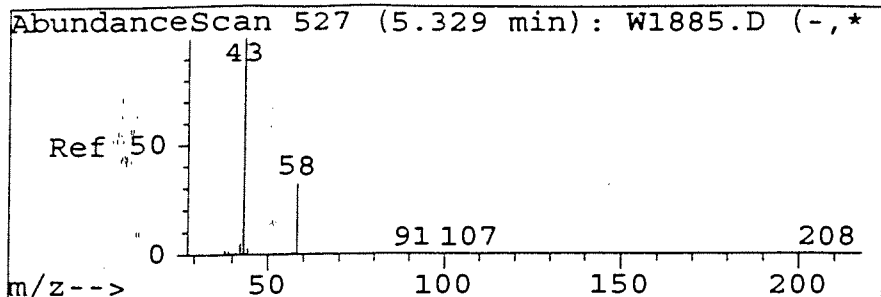
Data File : C:\HPCHEM\1\DATA\JUL23\W6694.D
Acq Time : 23 Jul 96 1:31 pm
Sample : G9607215-3(5D)/B#96426
Misc : DF=500/50UL:25ML/GW-10/ALLIED SIGNAL
Quant Time: Jul 23 14:04 1996

Operator: DEBBIE
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
Last Update : Tue Jul 16 10:03:38 1996
Response via : Multiple Level Calibration

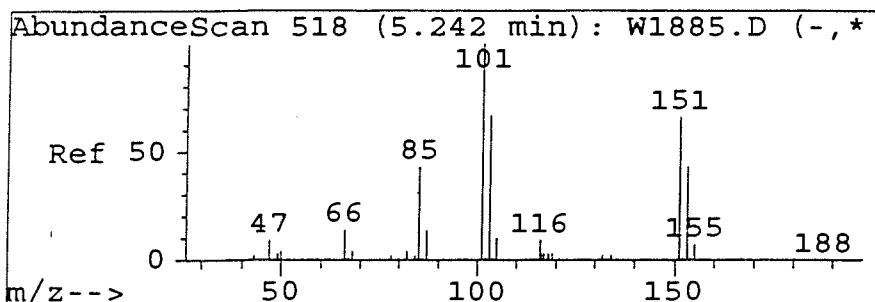
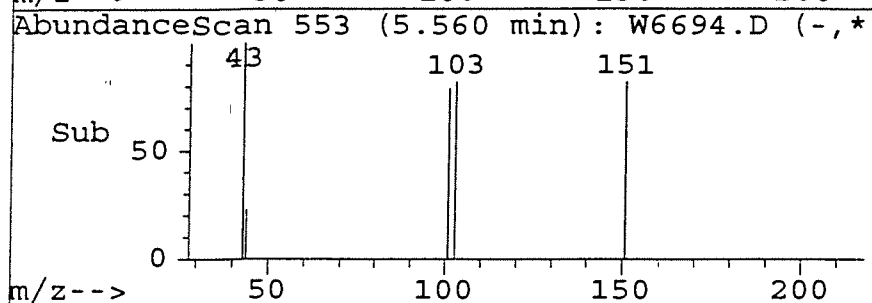
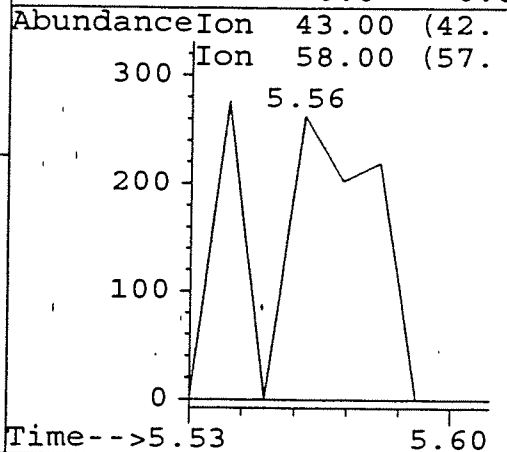
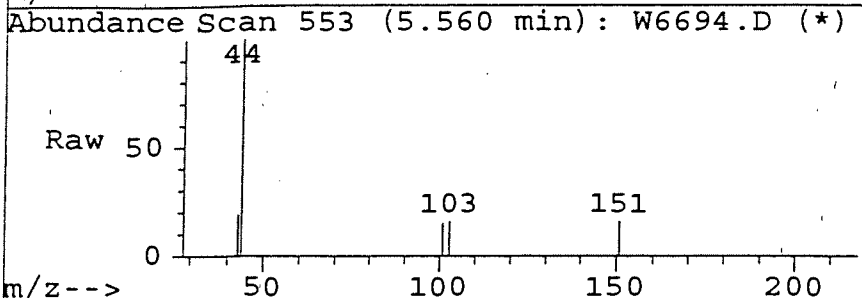


002199



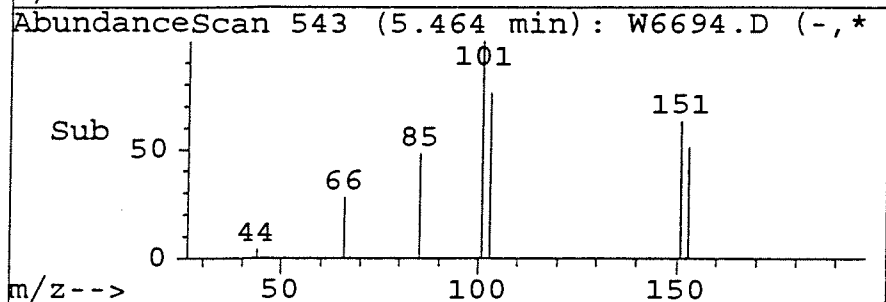
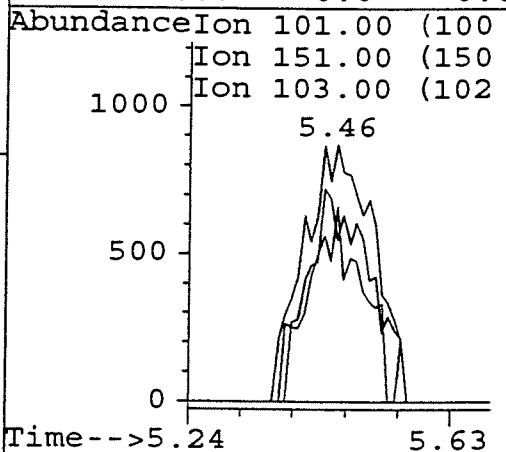
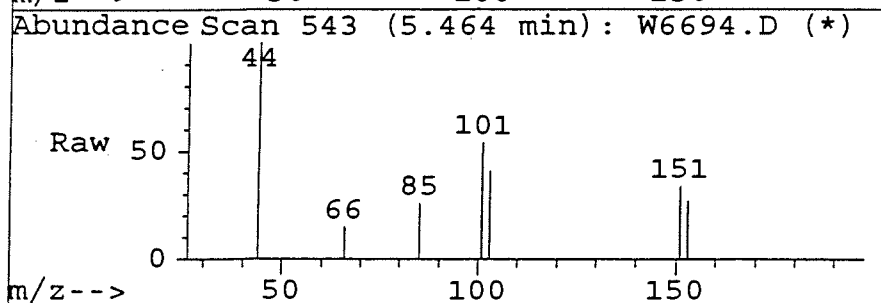
#9
Acetone
Concen: 1.21 ug/l
RT: 5.56 min Scan# 553
Delta R.T. -0.07 min
Lab File: W6694.D
Acq: 23 Jul 96 1:31 pm

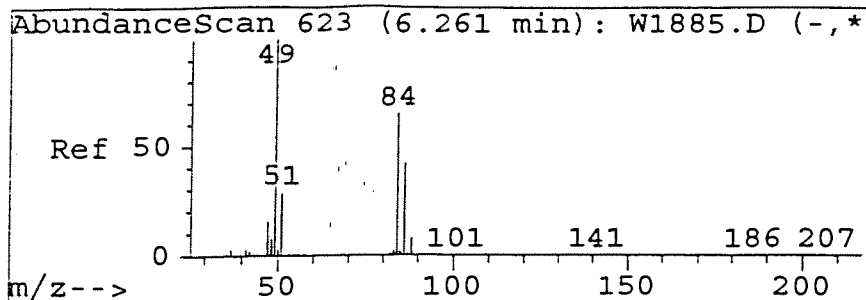
Tgt Ion:	43	Resp:	395
Ion	Ratio	Lower	Upper
43	100		
58	0.0	0.0	50.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#11
Freon 113
Concen: 0.38 ug/l
RT: 5.46 min Scan# 543
Delta R.T. -0.08 min
Lab File: W6694.D
Acq: 23 Jul 96 1:31 pm

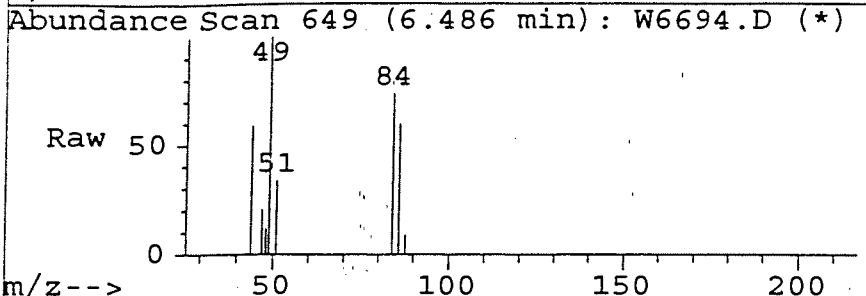
Tgt Ion:	101	Resp:	6306
Ion	Ratio	Lower	Upper
101	100		
151	73.1	45.9	85.9
103	58.8	46.7	86.7
0	0.0	0.0	0.0



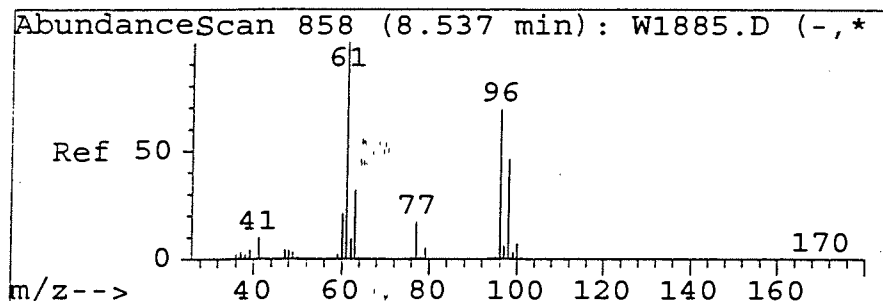
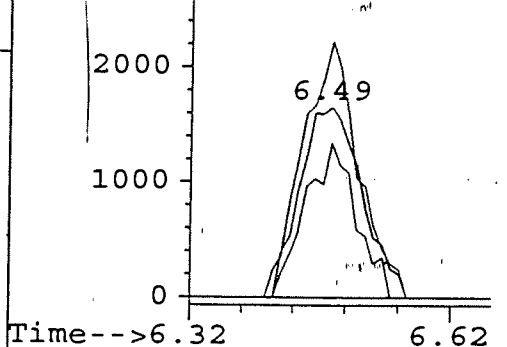
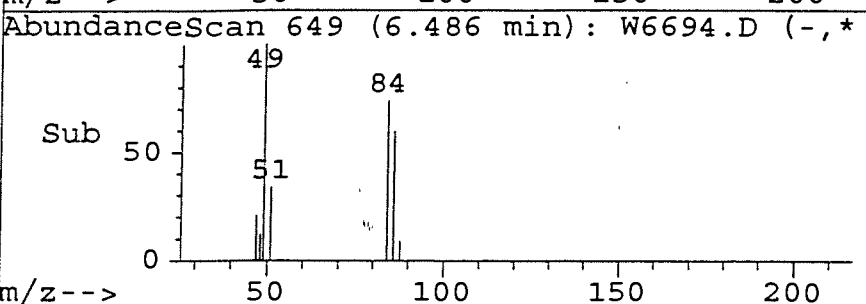


#12
Methylene Chloride
Concen: 1.51 ug/l
RT: 6.49 min Scan# 649
Delta R.T. -0.11 min
Lab File: W6694.D
Acq: 23 Jul 96 1:31 pm

Tgt Ion:84	Resp:	8206
Ion Ratio	Lower	Upper
84	100	
49	121.5	41.6 221.6
86	67.0	0.0 157.2
0	0.0	0.0 0.0

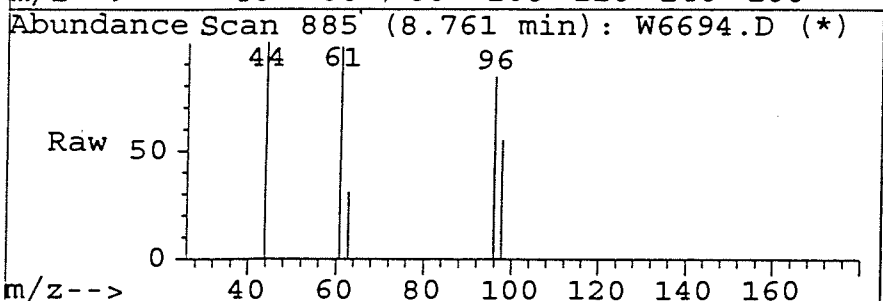


Abundance	Ion	84.00 (83.
3000	Ion	49.00 (48.
	Ion	86.00 (85.

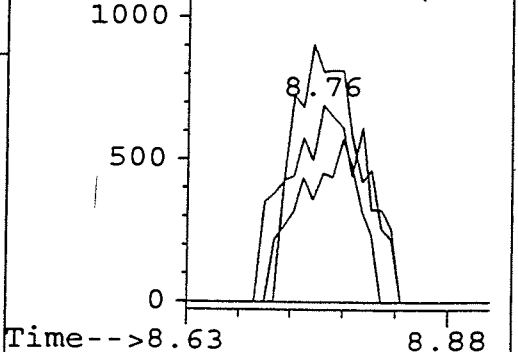
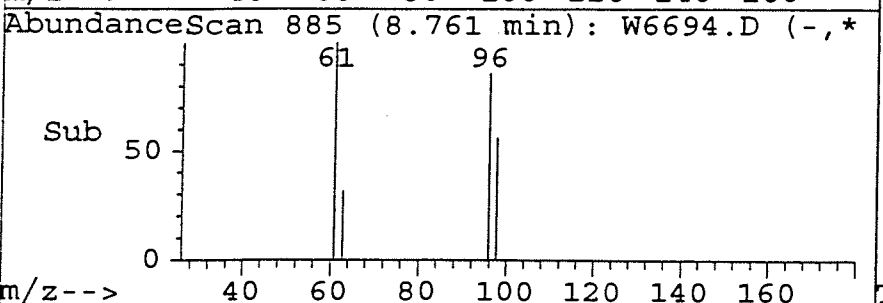


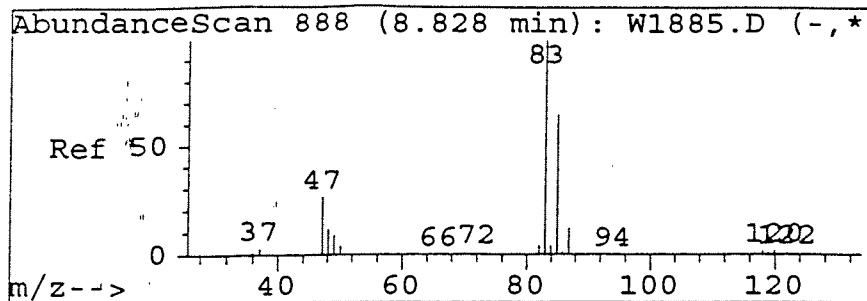
#17
1,2-Dichloroethene (cis-)
Concen: 0.38 ug/l
RT: 8.76 min Scan# 885
Delta R.T. -0.19 min
Lab File: W6694.D
Acq: 23 Jul 96 1:31 pm

Tgt Ion:96	Resp:	3393
Ion Ratio	Lower	Upper
96	100	
61	133.8	84.0 184.0
98	69.6	14.7 114.7
0	0.0	0.0 0.0



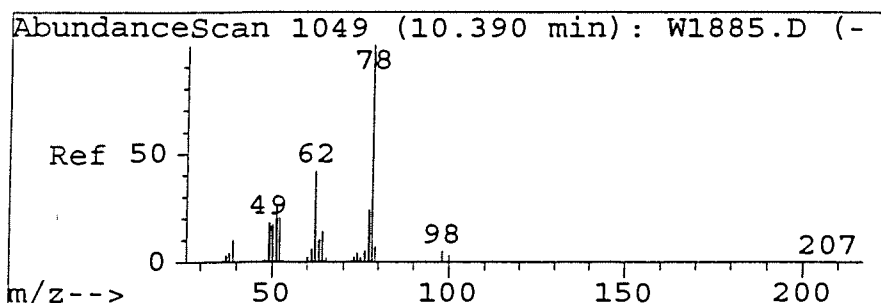
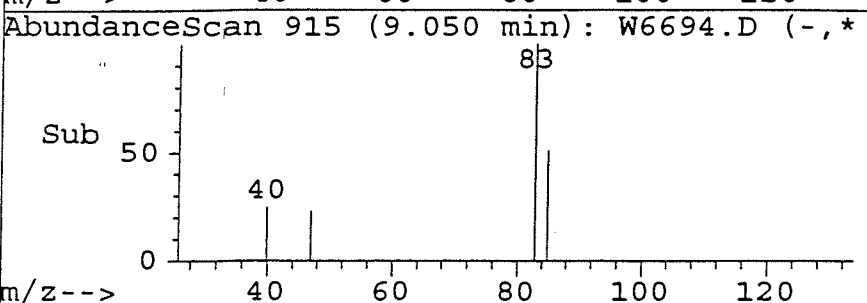
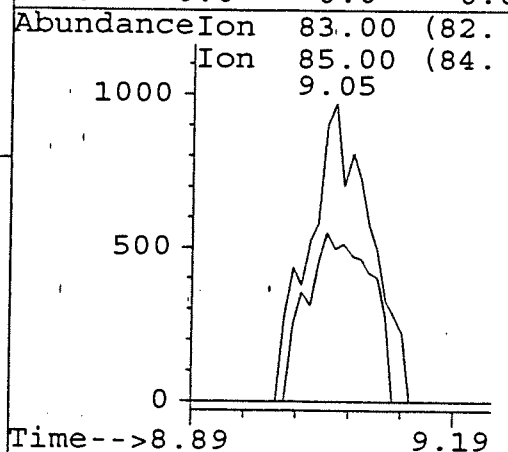
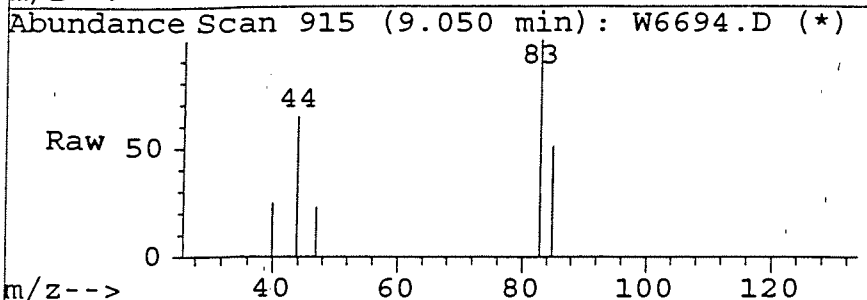
Abundance	Ion	96.00 (95.
1000	Ion	61.00 (60.
	Ion	98.00 (97.





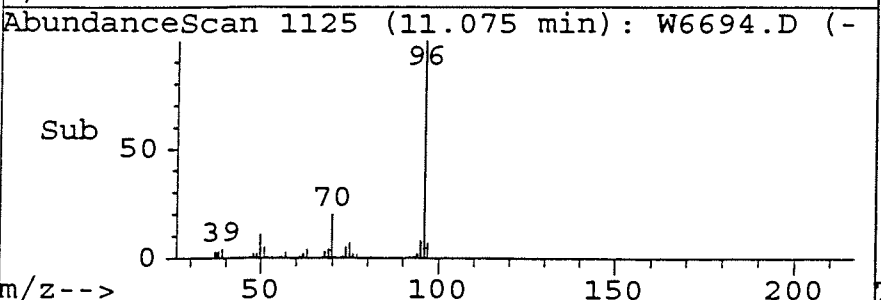
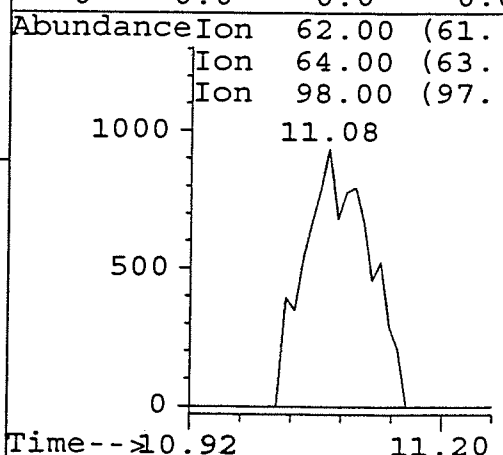
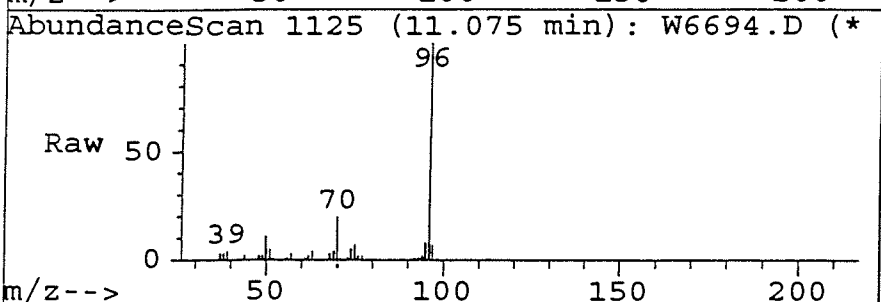
#19
Chloroform
Concen: 0.26 ug/l
RT: 9.05 min Scan# 915
Delta R.T. -0.19 min
Lab File: W6694.D
Acq: 23 Jul 96 1:31 pm

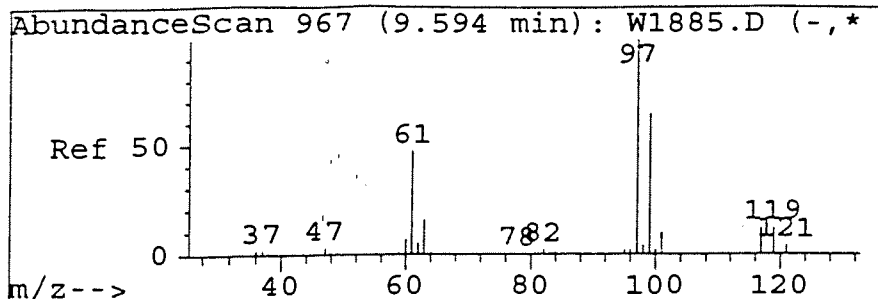
Tgt	Ion:83	Resp:	4737
Ion	Ratio	Lower	Upper
83	100		
85	60.4	17.3	117.3
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#21
1,2-Dichloroethane
Concen: 0.56 ug/l
RT: 11.08 min Scan# 1125
Delta R.T. 0.24 min
Lab File: W6694.D
Acq: 23 Jul 96 1:31 pm

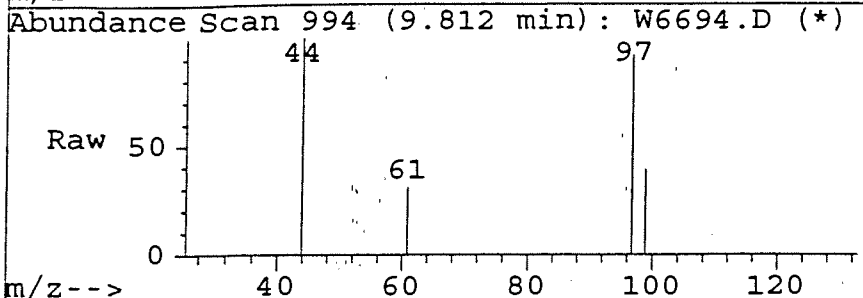
Tgt	Ion:62	Resp:	4669
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0



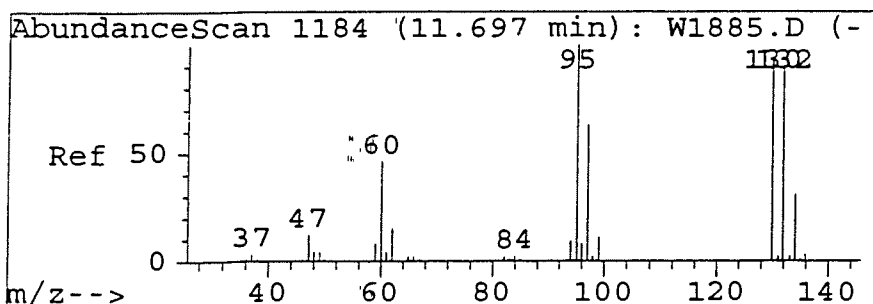
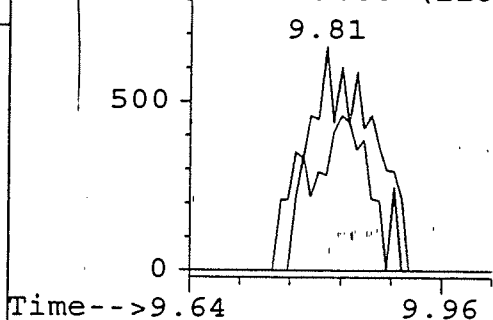
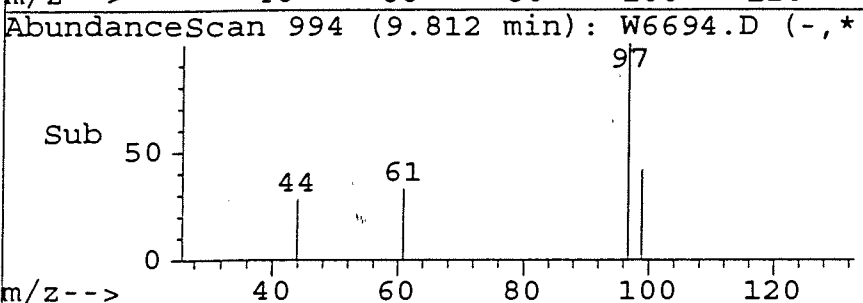


#22
1,1,1-Trichloroethane
Concen: 0.18 ug/l
RT: 9.81 min Scan# 994
Delta R.T. -0.22 min
Lab File: W6694.D
Acq: 23 Jul 96 1:31 pm

Tgt Ion:97	Resp:	3934
Ion Ratio	Lower	Upper
97 100		
99 36.5	18.2	118.2
117 0.0	0.0	57.5
119 0.0	0.0	60.9

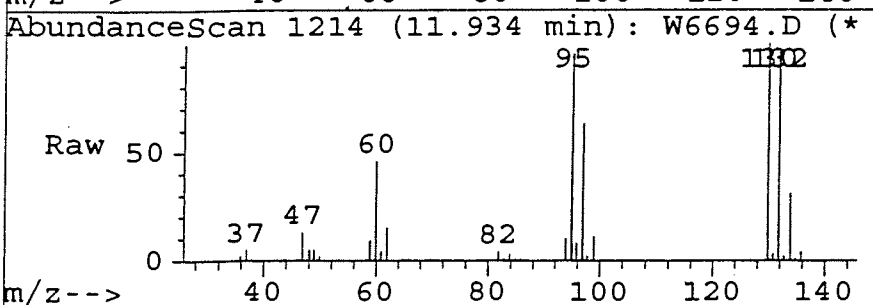


Abundance	Ion	97.00 (96.
1000	Ion	99.00 (98.
	Ion	117.00 (116
	Ion	119.00 (118

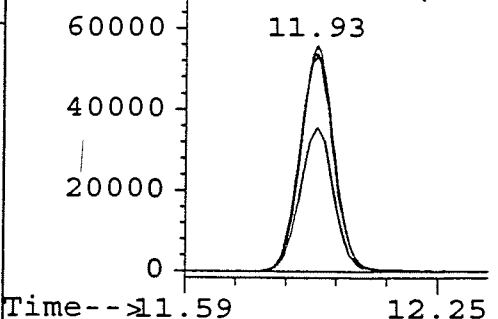
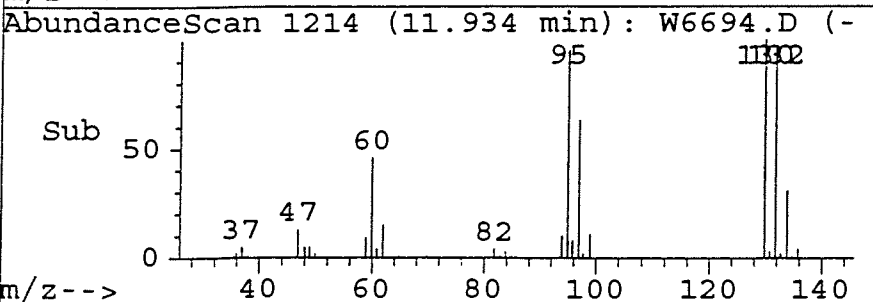


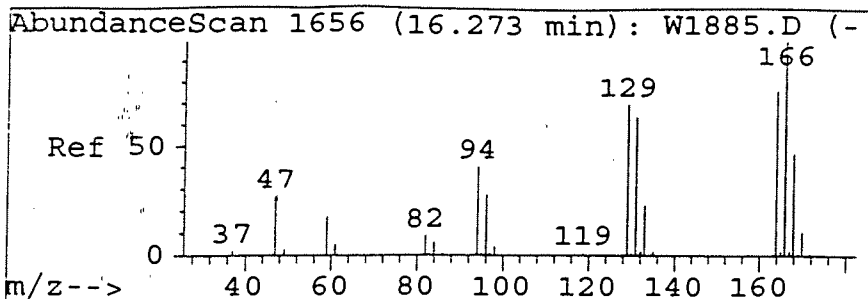
#25
Trichloroethene
Concen: 22.14 ug/l
RT: 11.93 min Scan# 1214
Delta R.T. -0.22 min
Lab File: W6694.D
Acq: 23 Jul 96 1:31 pm

Tgt	Ion:130	Resp:	347349
Ion	Ratio	Lower	Upper
130	100		
132	97.7	46.4	146.4
95	96.5	54.1	154.1
97	63.7	16.2	116.2

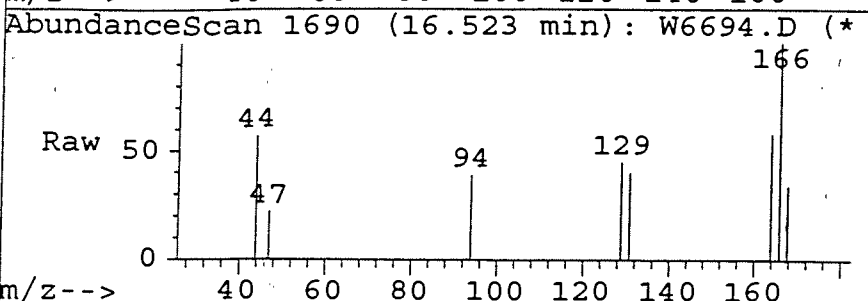


Abundance	Ion	130.00 (129
80000	Ion	132.00 (131
	Ion	95.00 (94.
	Ion	97.00 (96.

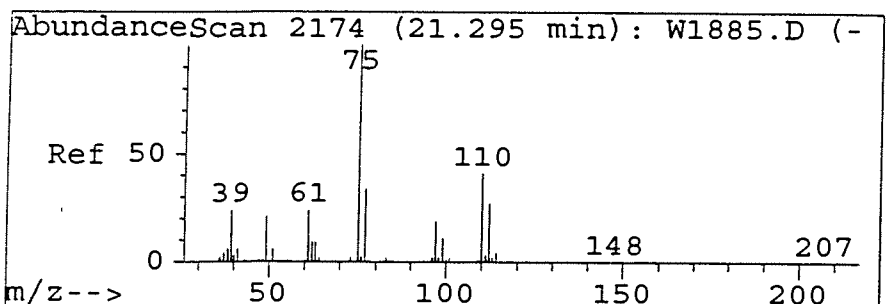
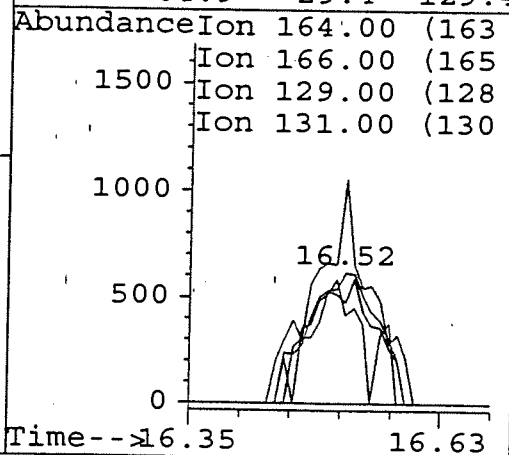
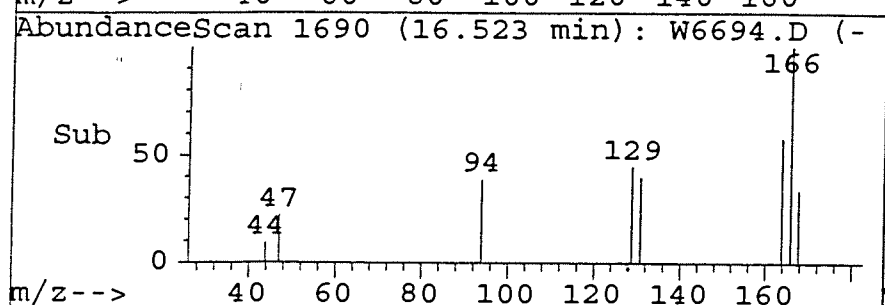




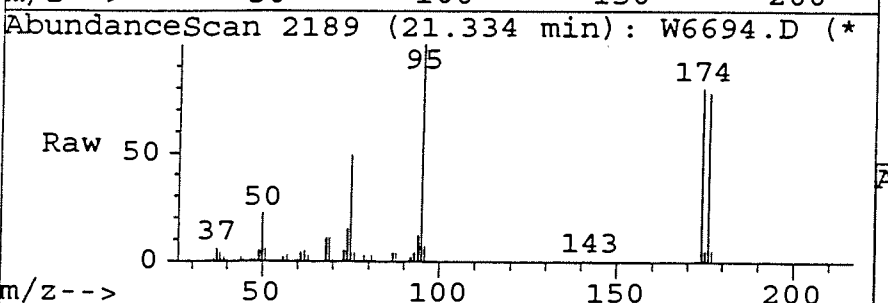
#37
Tetrachloroethene
Concen: 0.21 ug/l
RT: 16.52 min Scan# 1690
Delta R.T. -0.26 min
Lab File: W6694.D
Acq: 23 Jul 96 1:31 pm



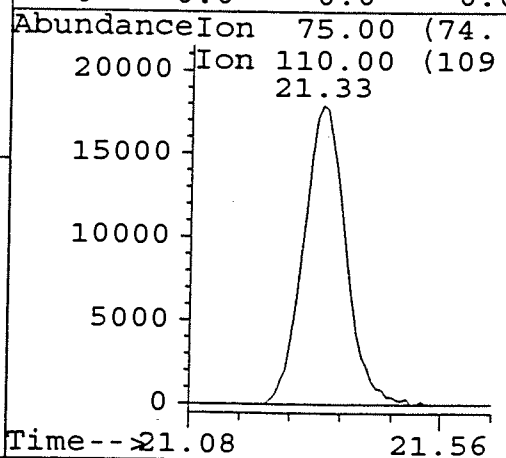
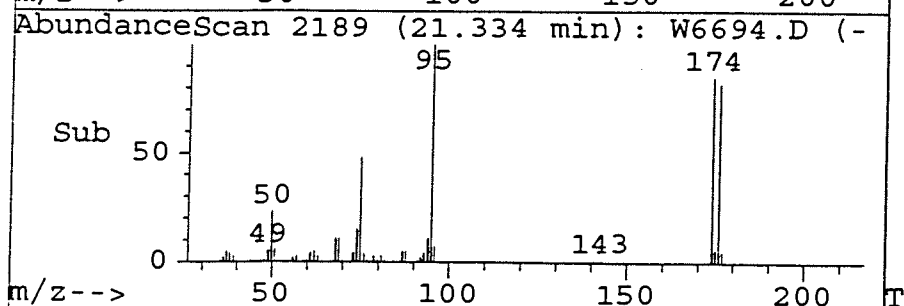
Tgt Ion	Ratio	Lower	Upper
164	100		
166	134.9	81.6	181.6
129	86.2	33.6	133.6
131	64.9	29.4	129.4



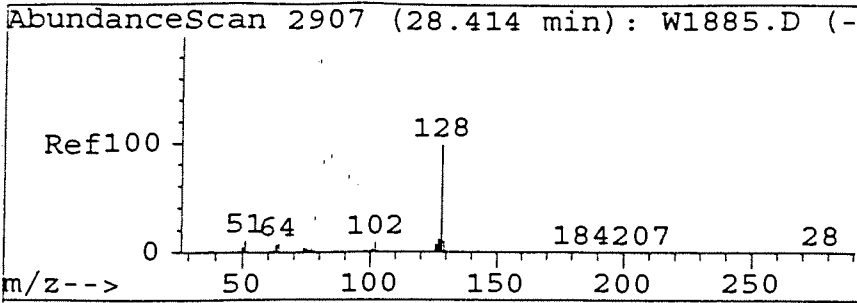
#50
1,2,3-Trichloropropane
Concen: 23.93 ug/l
RT: 21.33 min Scan# 2189
Delta R.T. -0.20 min
Lab File: W6694.D
Acq: 23 Jul 96 1:31 pm



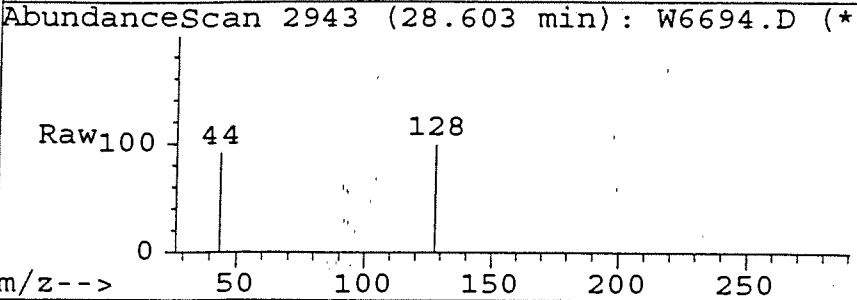
Tgt Ion	Ratio	Lower	Upper
75	100		
110	0.0	0.0	86.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



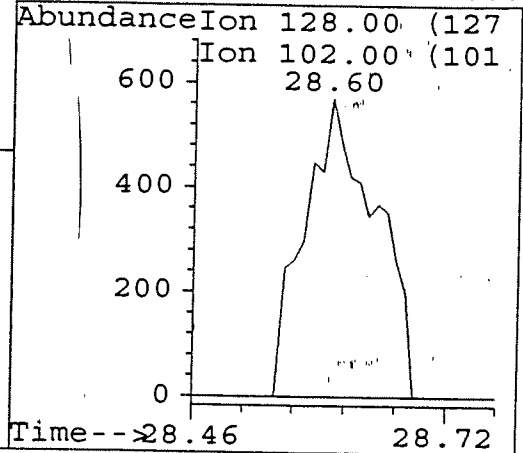
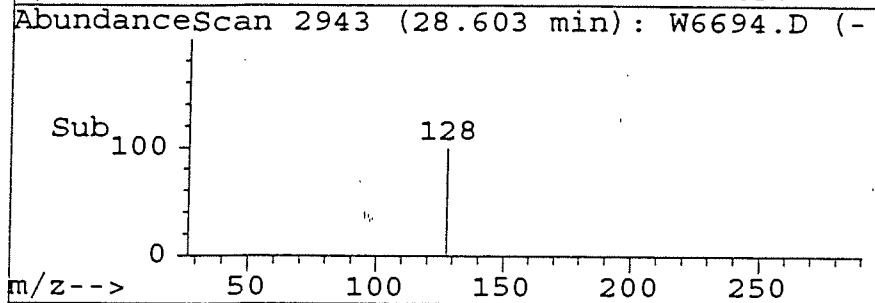
002204



#65
 Naphthalene
 Concen: 0.19 ug/l
 RT: 28.60 min Scan# 2943
 Delta R.T. - -0.22 min
 Lab File: W6694.D
 Acq: 23 Jul 96 1:31 pm



Tgt Ion:	128	Resp:	2943
Ion	Ratio	Lower	Upper
128	100		
102	0.0	0.0	81.5
0	0.0	0.0	0.0
0	0.0	0.0	0.0



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6694.D

Acq Time : 23 Jul 96 1:31 pm

Sample : G9607215-3 (5D)/B#96426

Misc : DF=500/50UL:25ML/GW-10/ALLIED SIGNAL

Operator: DEBBIE

Inst : VOA3

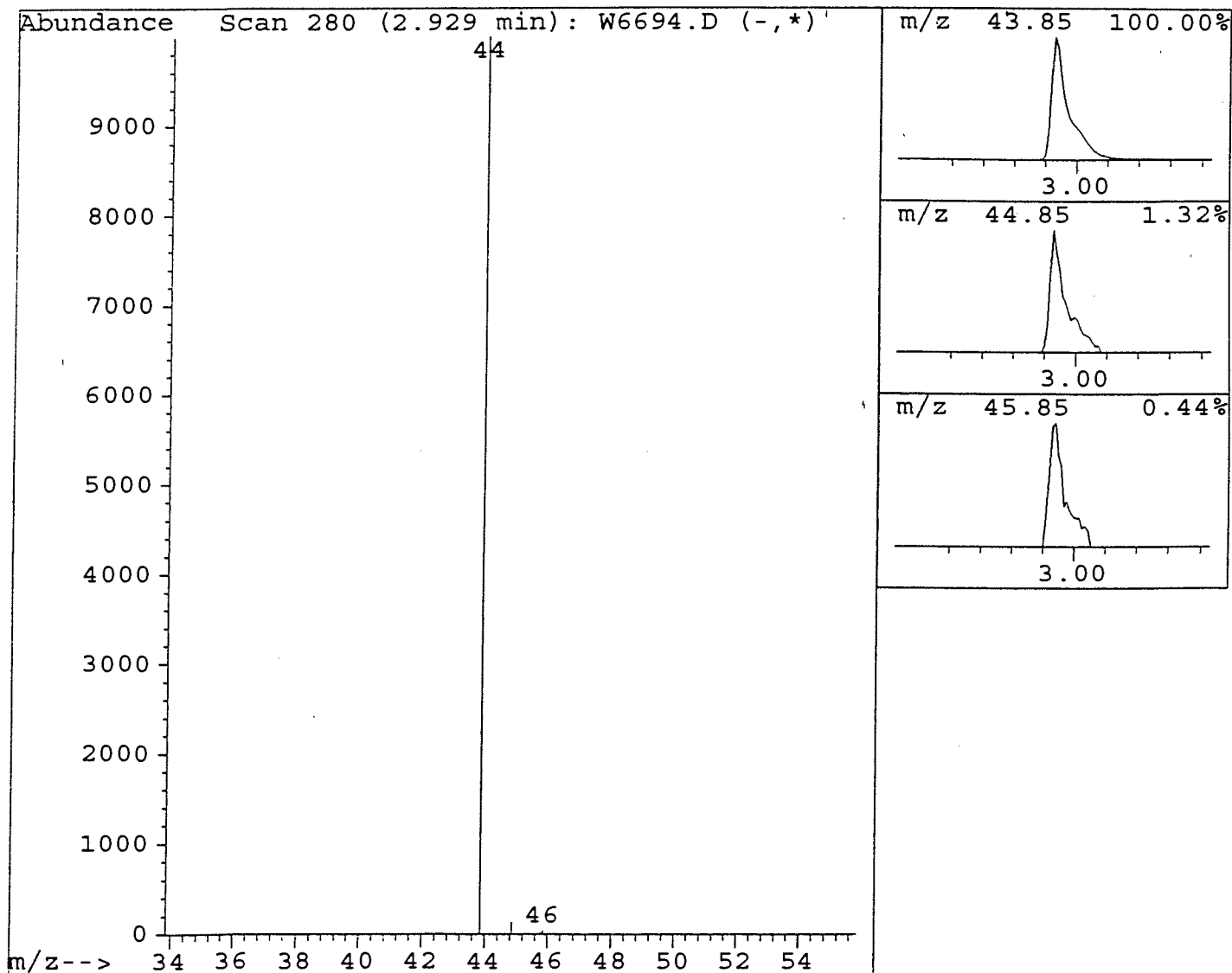
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.93	19.69 ug/l	1535154	Fluorobenzene	11.08	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	No Hits From C:\DATABASE\NBS75K.L		0	000000-00-0	0



002206

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6700.D
 Acq Time : 23 Jul 96 5:09 pm
 Sample : G9607215-1(5D)/B#96426
 Misc : DF=20/1.25ML:25ML/GW-10/ALLIED SIGNAL
 Quant Time: Jul 23 17:42 1996

Operator: DEBBIE
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M
 Title : 5-PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3
 Last Update : Tue Jul 16 10:03:38 1996
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M:
1) Fluorobenzene	11.13	96	340666	10.00	ug/l	0.0
System Monitoring Compounds						
45) 1,2-Dichlorobenzene-d4	24.80	150	174097	8.88	ug/l	88.8
47) Bromofluorobenzene	21.35	95	174262	9.43	ug/l	94.2
Target Compounds						
10) 1,1-Dichloroethene	5.78	96	13839	2.08	ug/l	9
11) Freon 113	5.49	101	4562	0.31	ug/l	7
12) Methylene Chloride	6.52	84	4498	0.93	ug/l	8
14) 1,1-Dichloroethane	7.73	63	29169	3.01	ug/l	9
17) 1,2-Dichloroethene (cis-)	8.80	96	76344	9.72	ug/l	9
19) Chloroform	9.09	83	110522	6.80	ug/l	10
21) 1,2-Dichloroethane	11.11	62	4581	0.62	ug/l	4
22) 1,1,1-Trichloroethane	9.87	97	60993	3.13	ug/l	9
23) Carbon Tetrachloride	10.37	117	6155	0.34	ug/l	9
24) Benzene	10.72	78	4148	0.16	ug/l	10
25) Trichloroethene	11.97	130	6426019	460.36	ug/l	9
37) Tetrachloroethene	16.55	164	25877	1.80	ug/l	9
50) 1,2,3-Trichloropropane	21.68	75	679	0.18	ug/l	3
65) Naphthalene	28.62	128	4089	0.30	ug/l	8

See TCE on 7/18 W6506

BATCH # 96426

DATE 07/23/96

ANALYST [Signature]

REVIEWED & APPROVED
 BY [Signature] DATE 7/23/96

002207

(#) = qualifier out of range (m) = manual integration

W6700.D 524JLS.M

Tue Jul 23 17:43:08 1996

VOA3

Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6700.D

Acq Time : 23 Jul 96 5:09 pm

Sample : G9607215-1(5D)/B#96426

Misc : DF=20/1.25ML:25ML/GW-10/ALLIED SIGNAL

Quant Time: Jul 23 17:42 1996

Operator: DEBBIE

Inst : VOA3

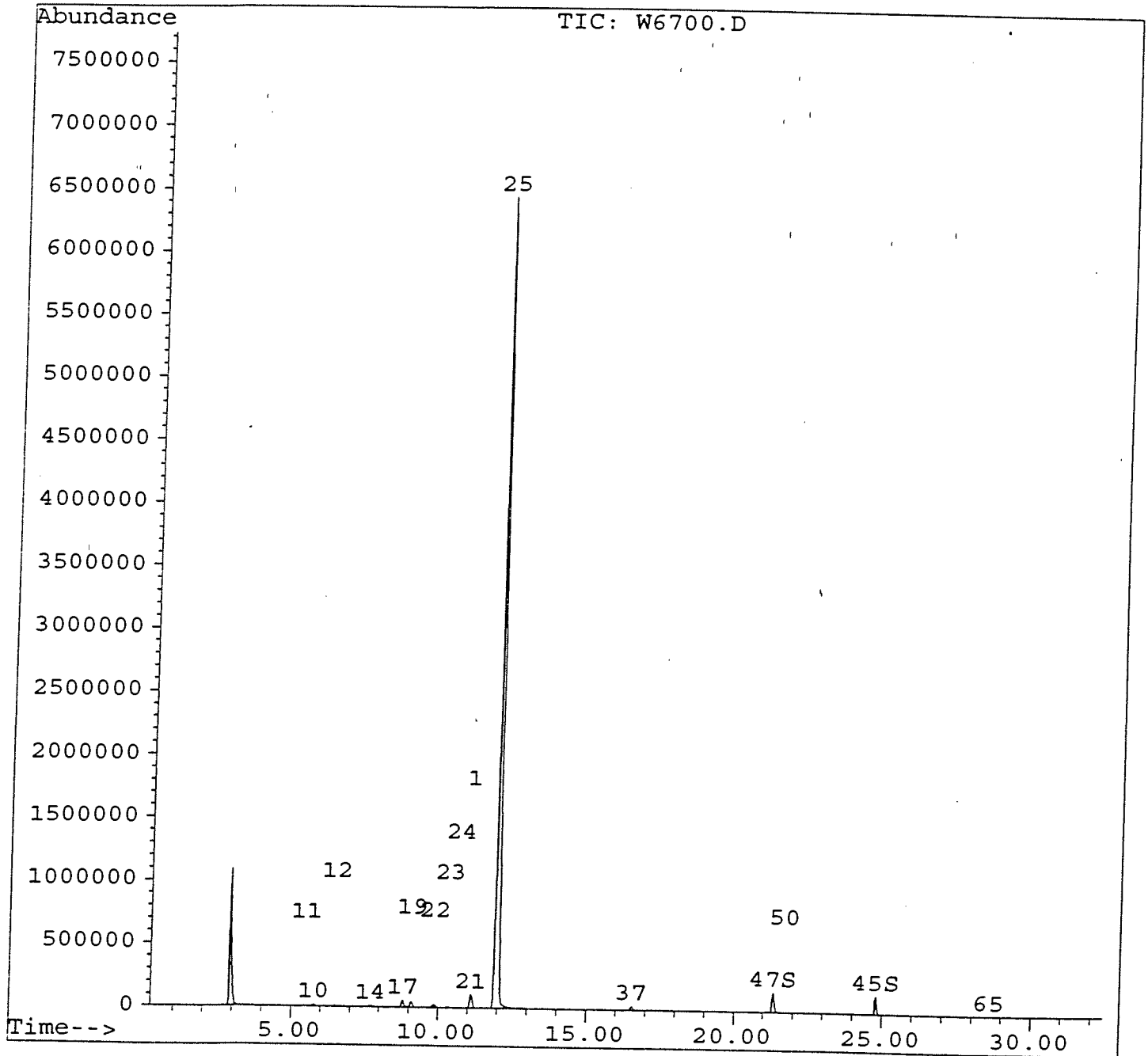
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

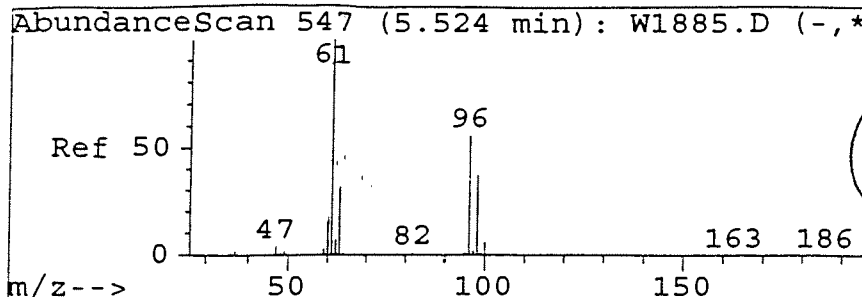
Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Last Update : Tue Jul 16 10:03:38 1996

Response via : Multiple Level Calibration

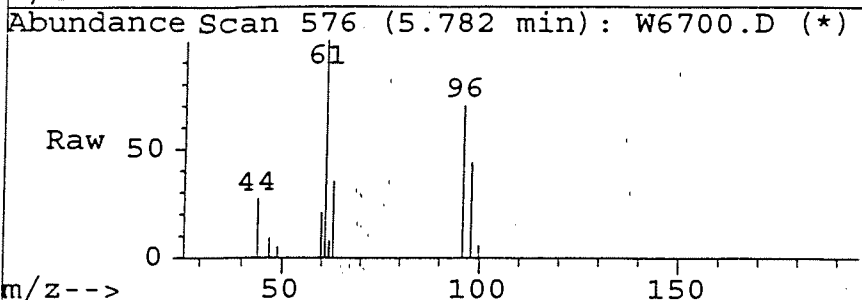


002208

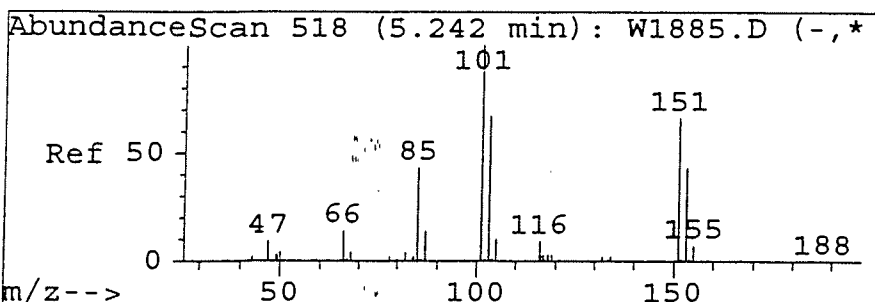
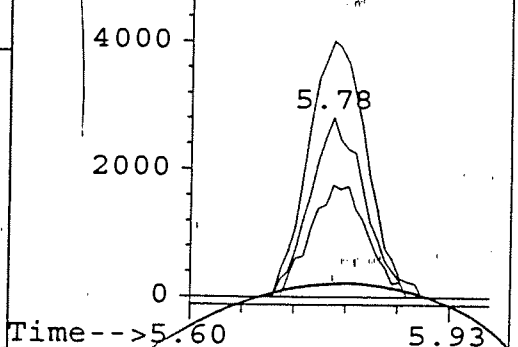


#10
1,1-Dichloroethene
Concen: 2.08 ug/l
RT: 5.78 min Scan# 576
Delta R.T. -0.05 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

Tgt Ion:96	Resp:	13839
Ion Ratio	Lower	Upper
96	100	
61	154.4	102.5 202.5
98	66.2	12.4 112.4
0	0.0	0.0 0.0

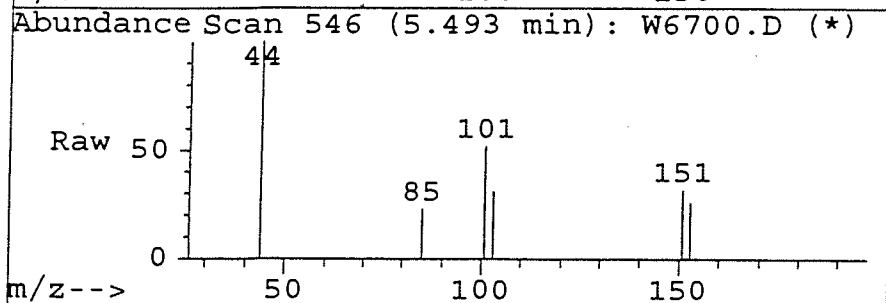


AbundanceIon	96.00 (95.
Ion	61.00 (60.
Ion	98.00 (97.

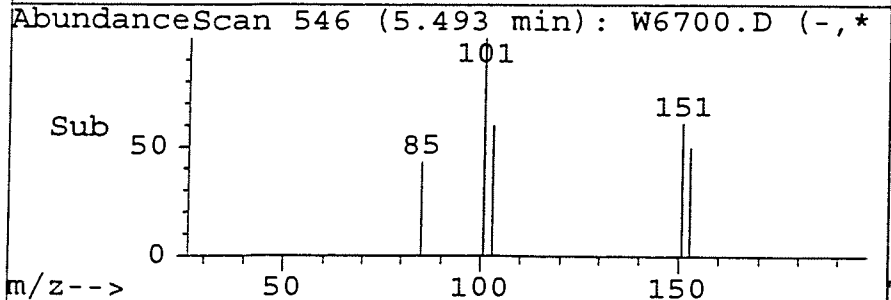
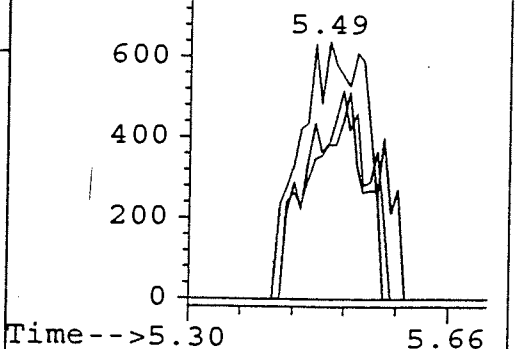


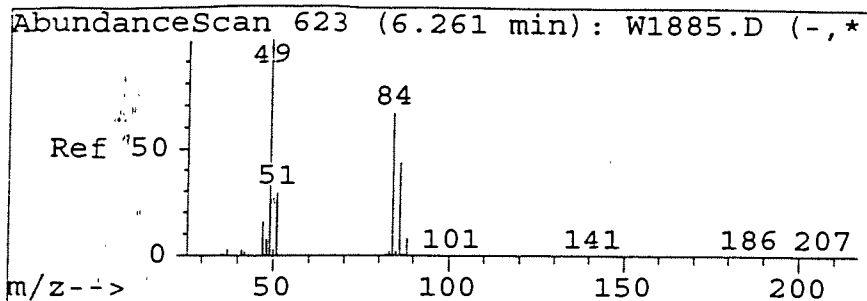
#11
Freon 113
Concen: 0.31 ug/l
RT: 5.49 min Scan# 546
Delta R.T. -0.05 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

Tgt Ion:101	Resp:	4562
Ion Ratio	Lower	Upper
101	100	
151	38.0	45.9 85.9#
103	58.1	46.7 86.7
0	0.0	0.0 0.0



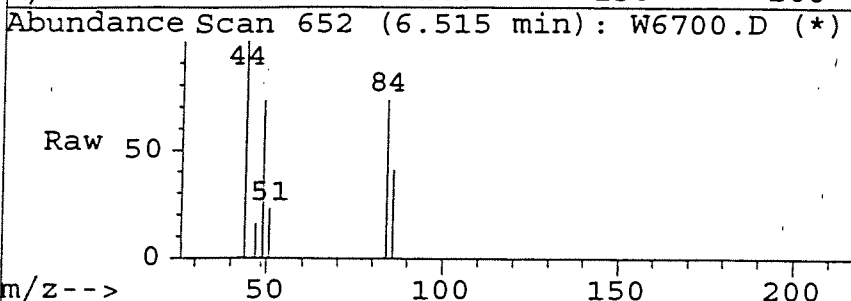
AbundanceIon	101.00 (100
Ion	151.00 (150
Ion	103.00 (102



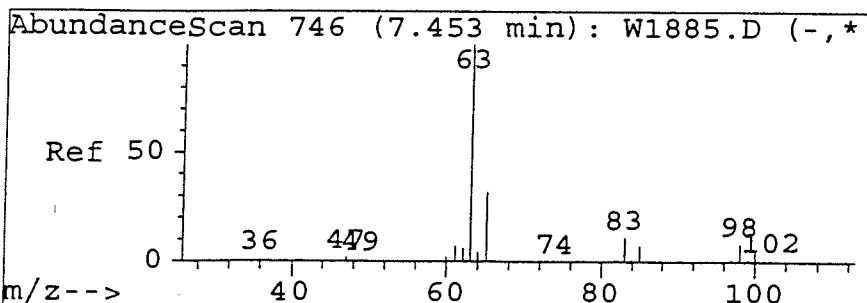
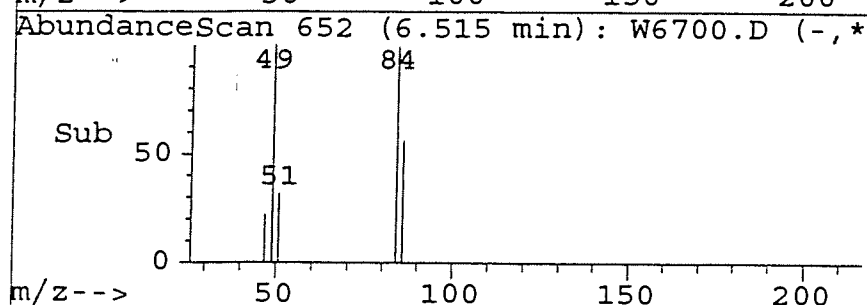
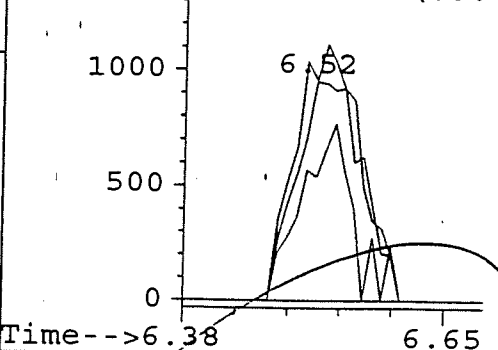


#12
Methylene Chloride
Concen: 0.93 ug/l
RT: 6.52 min Scan# 652
Delta R.T. -0.08 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

Tgt	Ion:84	Resp:	4498
Ion	Ratio	Lower	Upper
84	100		
49	114.2	41.6	221.6
86	63.1	0.0	157.2
0	0.0	0.0	0.0

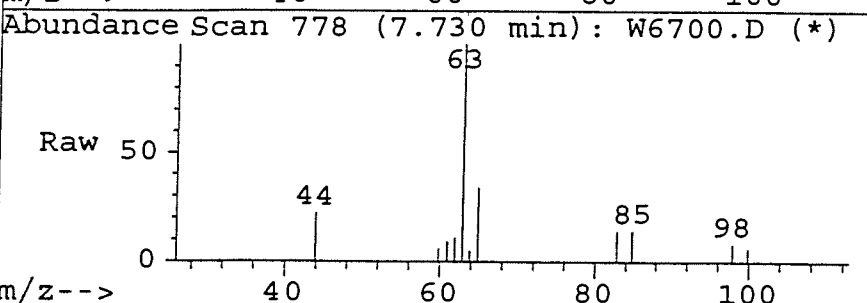


AbundanceIon	84.00	(83.
1500-Ion	49.00	(48.
Ion	86.00	(85.

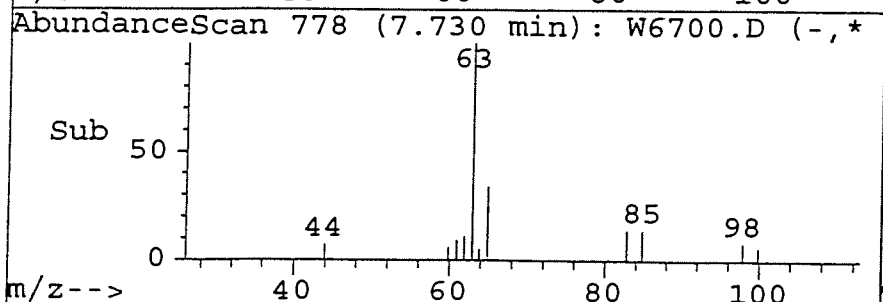
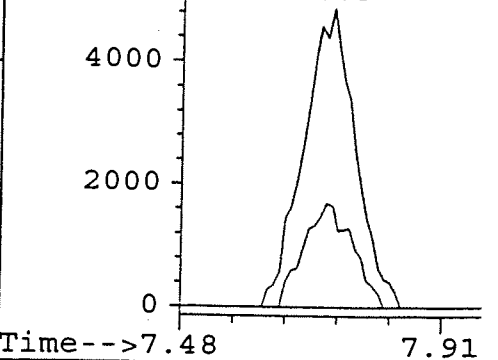


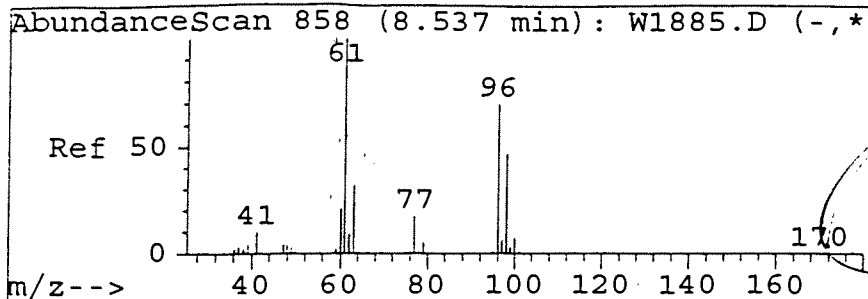
#14
1,1-Dichloroethane
Concen: 3.01 ug/l
RT: 7.73 min Scan# 778
Delta R.T. -0.12 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

Tgt	Ion:63	Resp:	29169
Ion	Ratio	Lower	Upper
63	100		
65	32.9	0.0	81.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0



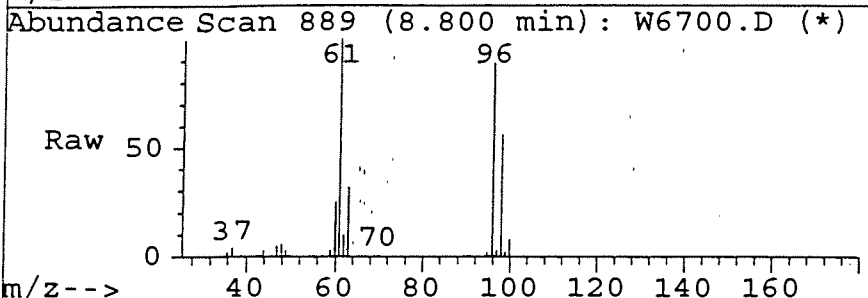
AbundanceIon	63.00	(62.
Ion	65.00	(64.
	7.73	



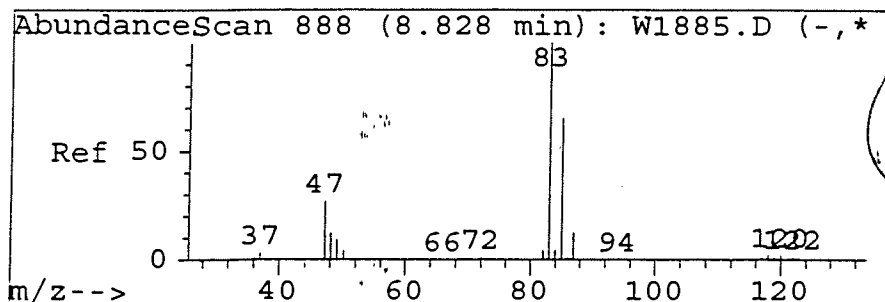
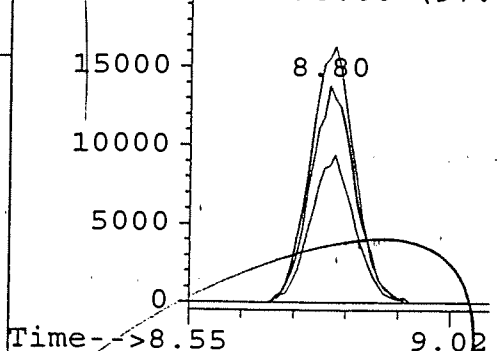
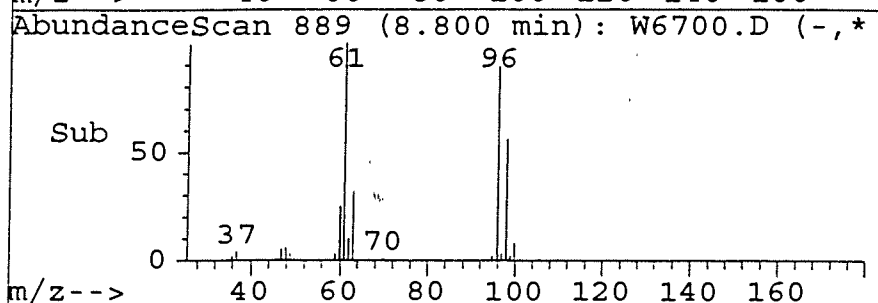


#17
1,2-Dichloroethene (cis-)
Concen: 9.72 ug/l
RT: 8.80 min Scan# 889
Delta R.T. -0.15 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

Tgt Ion:96	Resp:	76344
Ion	Ratio	Lower Upper
96	100	
61	118.9	84.0 184.0
98	67.0	14.7 114.7
0	0.0	0.0 0.0

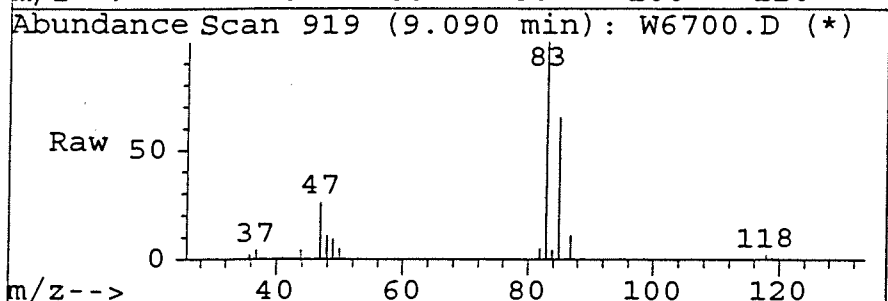


Abundance	Ion	96.00 (95.
20000	Ion	61.00 (60.
	Ion	98.00 (97.

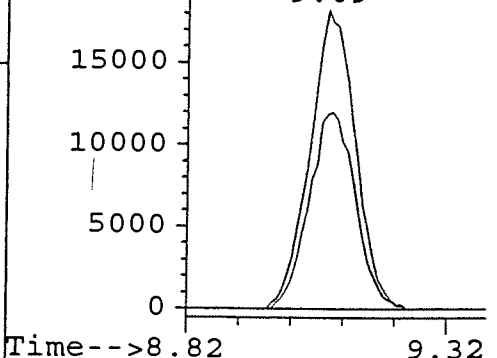
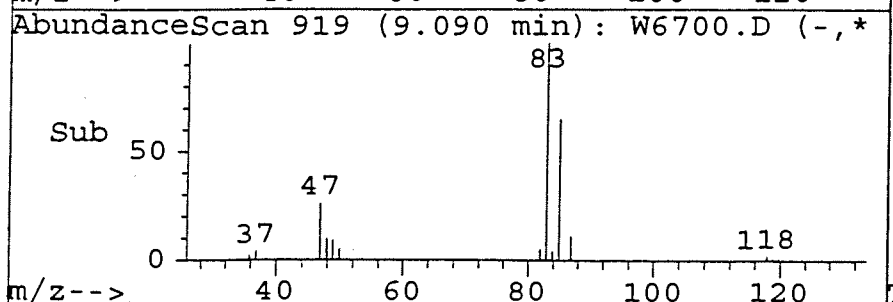


#19
Chloroform
Concen: 6.80 ug/l
RT: 9.09 min Scan# 919
Delta R.T. -0.15 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

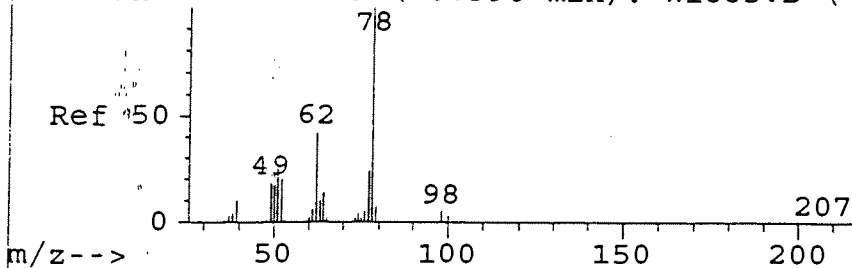
Tgt Ion:83	Resp:	110522
Ion	Ratio	Lower Upper
83	100	
85	67.2	17.3 117.3
0	0.0	0.0 0.0
0	0.0	0.0 0.0



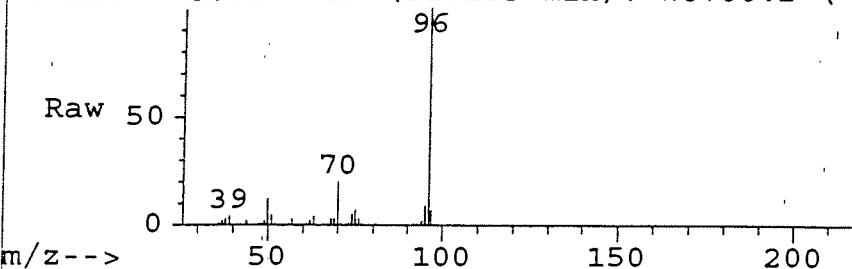
Abundance	Ion	83.00	(82.
20000	Ion	85.00	(84.
		9.09	



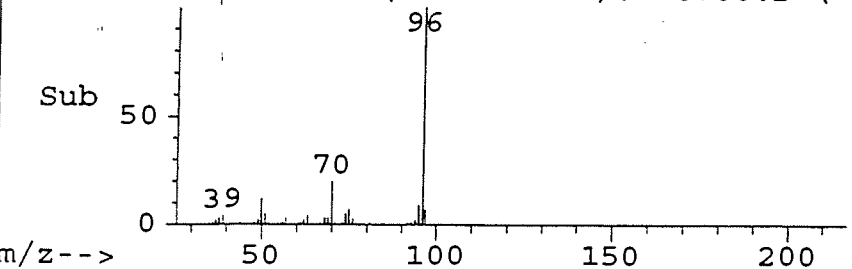
AbundanceScan 1049 (10.390 min): W1885.D (-



AbundanceScan 1129 (11.115 min): W6700.D (*)



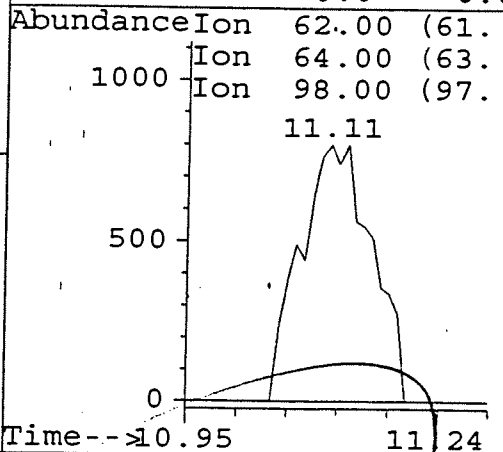
AbundanceScan 1129 (11.115 min): W6700.D (-



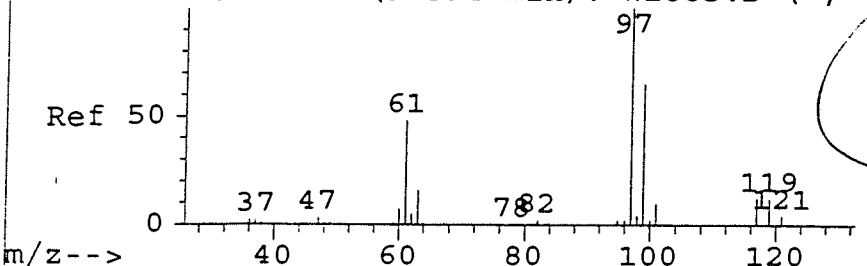
#21

1,2-Dichloroethane
Concen: 0.62 ug/l
RT: 11.11 min Scan# 1129
Delta R.T.: 0.27 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

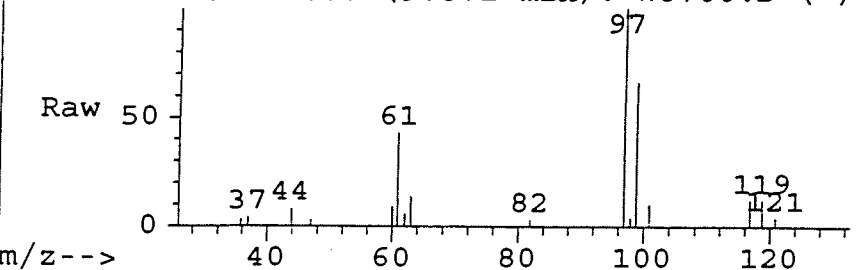
Tgt Ion:	62	Resp:	4581
Ion	Ratio	Lower	Upper
62	100		
64	0.0	0.0	81.7
98	0.0	0.0	53.9
0	0.0	0.0	0.0



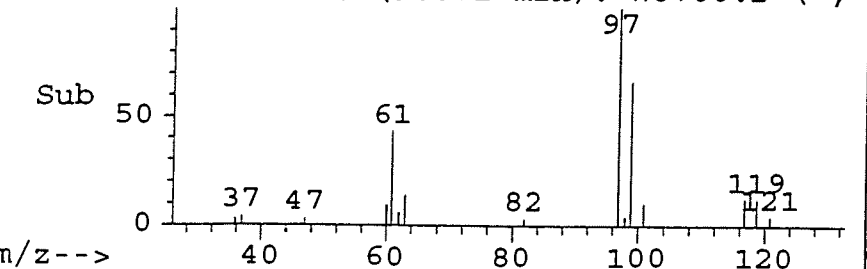
AbundanceScan 967 (9.594 min): W1885.D (-,*



AbundanceScan 1000 (9.871 min): W6700.D (*)



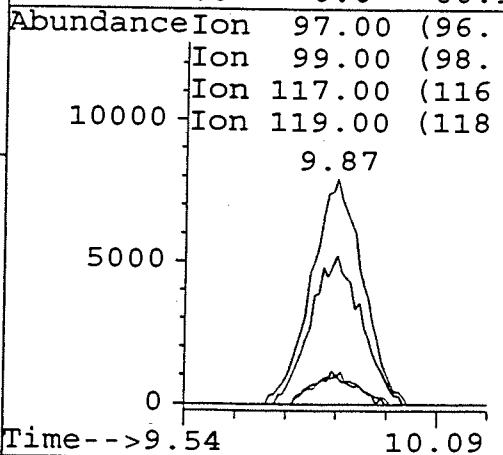
AbundanceScan 1000 (9.871 min): W6700.D (-,

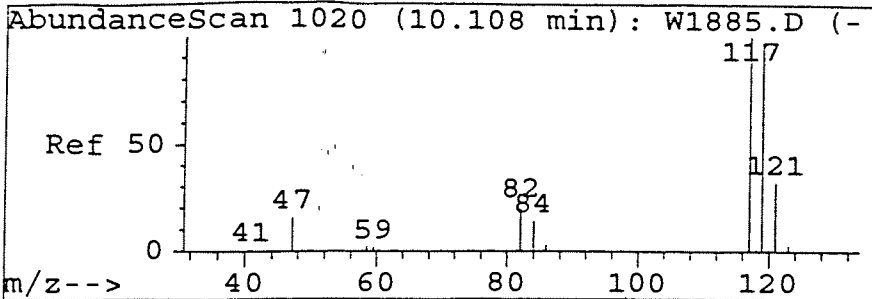


#22

1,1,1-Trichloroethane
Concen: 3.13 ug/l
RT: 9.87 min Scan# 1000
Delta R.T.: -0.16 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

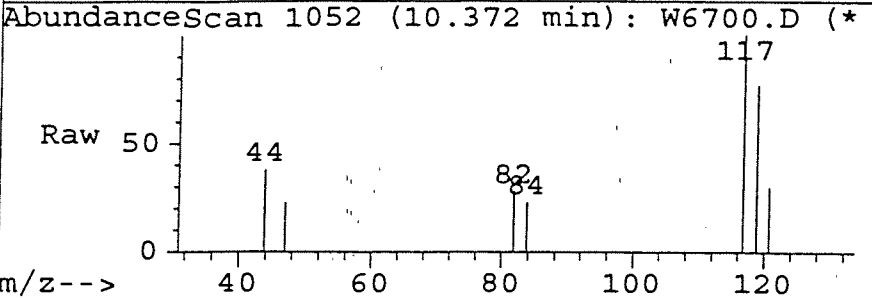
Tgt Ion:	97	Resp:	60993
Ion	Ratio	Lower	Upper
97	100		
99	65.1	18.2	118.2
117	11.7	0.0	57.5
119	11.0	0.0	60.9



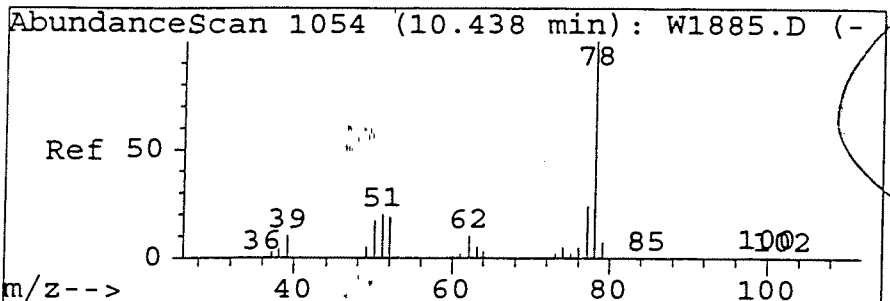
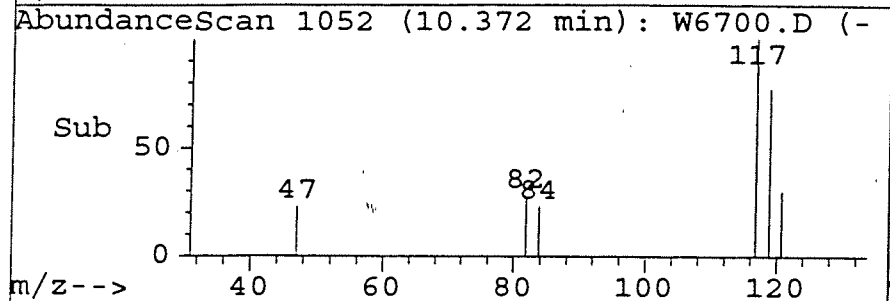
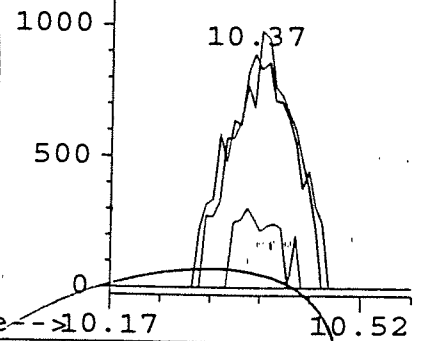


#23
Carbon Tetrachloride
Concen: 0.34 ug/l
RT: 10.37 min Scan# 1052
Delta R.T. -0.18 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

Tgt Ion:117 Resp: 6155
Ion Ratio Lower Upper
117 100
119 93.3 47.3 147.3
121 20.9 0.0 82.4
0 0.0 0.0 0.0

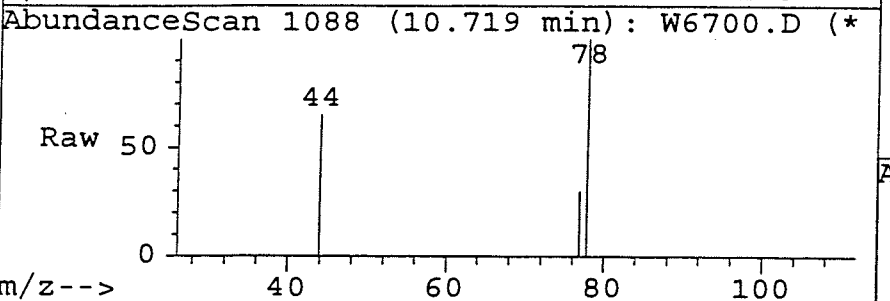


AbundanceIon 117.00 (116
Ion 119.00 (118
Ion 121.00 (120

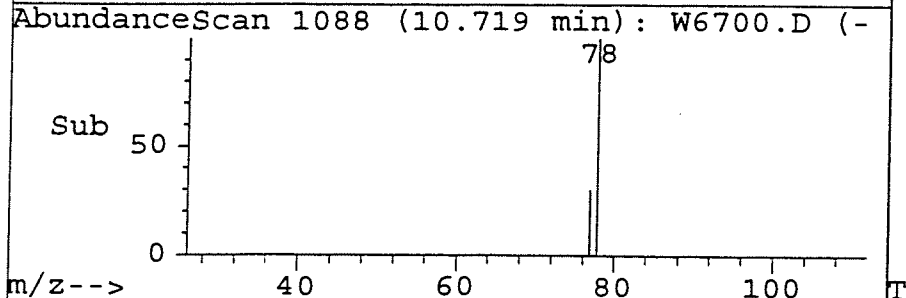
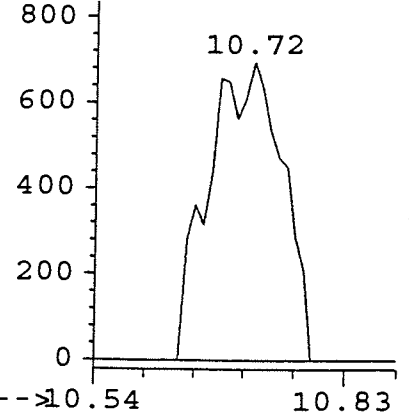


#24
Benzene
Concen: 0.16 ug/l
RT: 10.72 min Scan# 1088
Delta R.T. -0.01 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

Tgt Ion:78 Resp: 4148
Ion Ratio Lower Upper
78 100
0 0.0 0.0 0.0
0 0.0 0.0 0.0
0 0.0 0.0 0.0

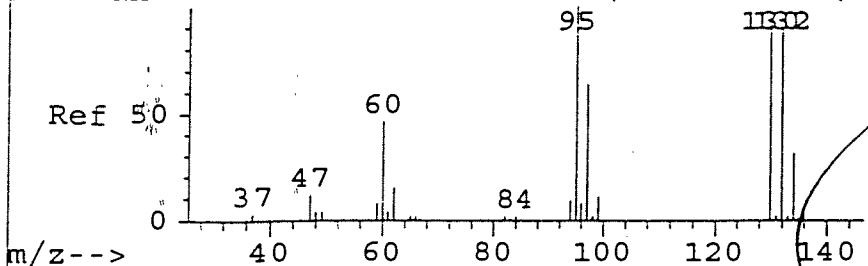


AbundanceIon 78.00 (77.

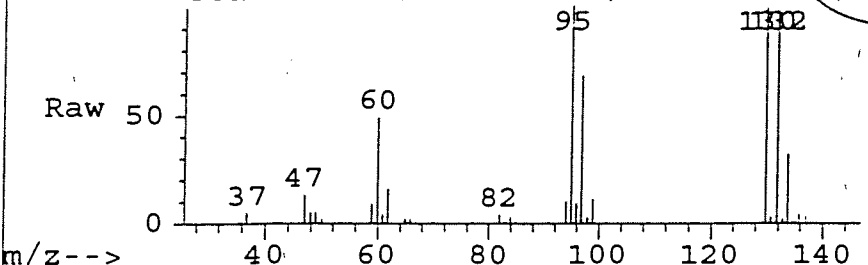


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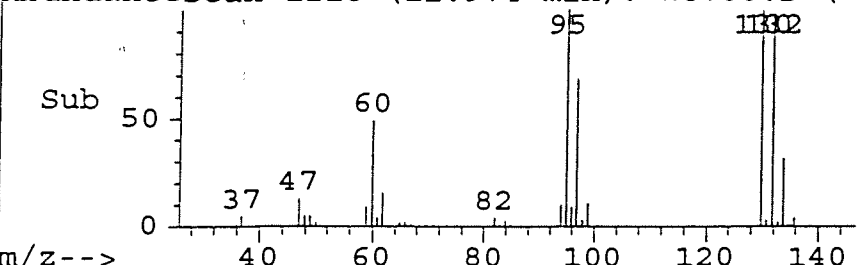
AbundanceScan 1184 (11.697 min): W1885.D (-



AbundanceScan 1218 (11.974 min): W6700.D (*)

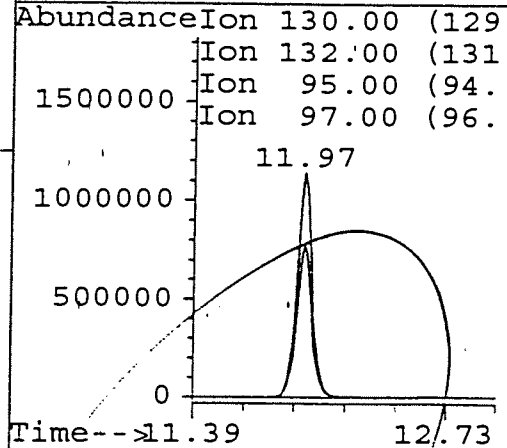


AbundanceScan 1218 (11.974 min): W6700.D (-

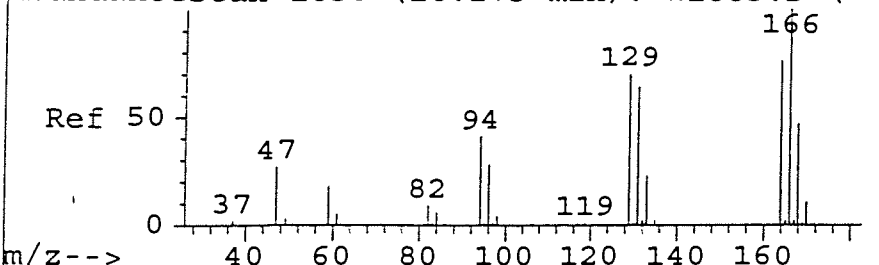


#25
Trichloroethene
Concen: 460.36 ug/l
RT: 11.97 min Scan# 1218
Delta R.T. - -0.18 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

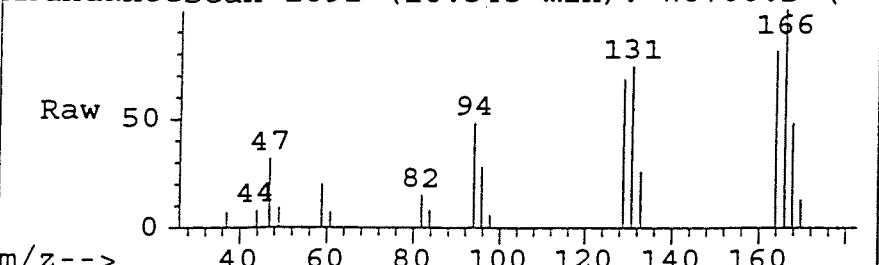
Tgt Ion:130	Resp: 6426019
Ion Ratio	Lower Upper
130	100
132	98.2 46.4 146.4
95	99.2 54.1 154.1
97	66.5 16.2 116.2



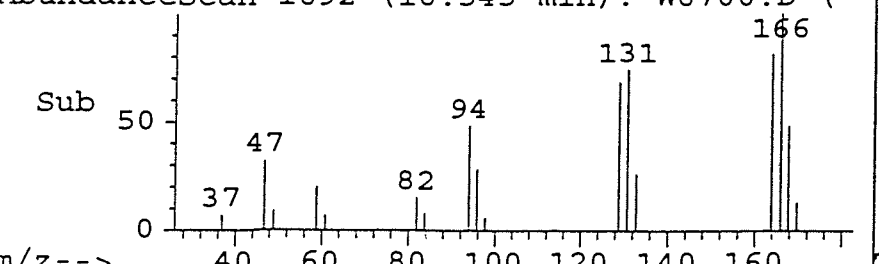
AbundanceScan 1656 (16.273 min): W1885.D (-



AbundanceScan 1692 (16.545 min): W6700.D (*)

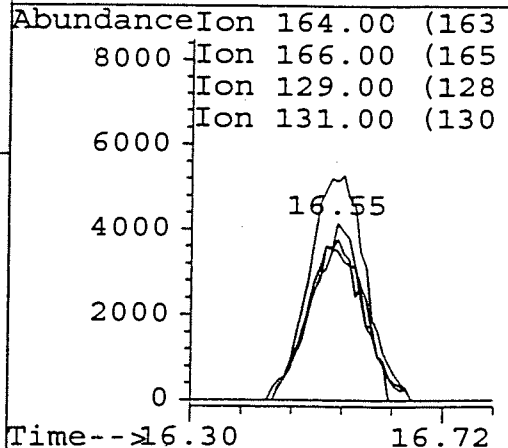


AbundanceScan 1692 (16.545 min): W6700.D (-

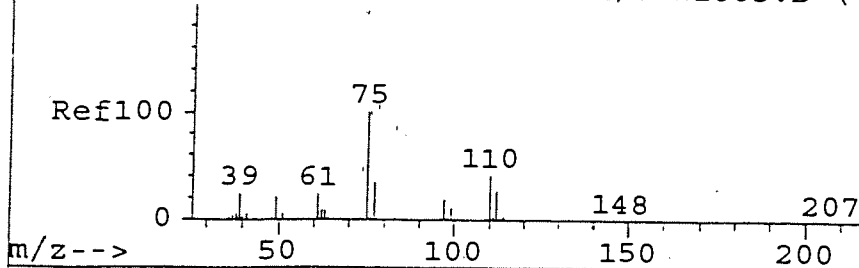


#37
Tetrachloroethene
Concen: 1.80 ug/l
RT: 16.55 min Scan# 1692
Delta R.T. - -0.23 min
Lab File: W6700.D
Acq: 23 Jul 96 5:09 pm

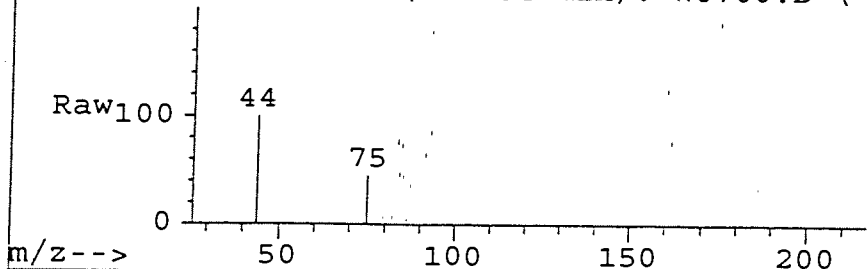
Tgt Ion:164	Resp: 25877
Ion Ratio	Lower Upper
164	100
166	135.0 81.6 181.6
129	90.7 33.6 133.6
131	87.6 29.4 129.4



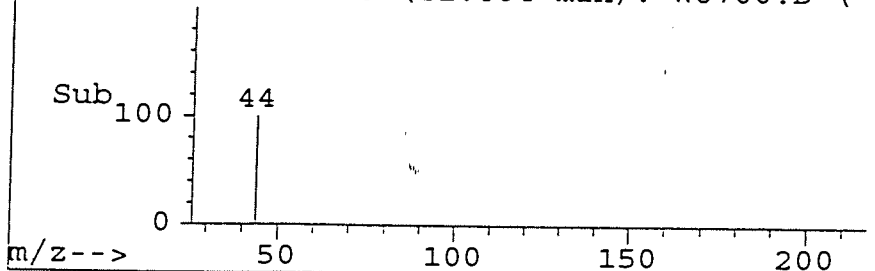
AbundanceScan 2174 (21.295 min): W1885.D (-



AbundanceScan 2225 (21.684 min): W6700.D (*)



AbundanceScan 2225 (21.684 min): W6700.D (-



#50

1,2,3-Trichloropropane

Concen: 0.18 ug/l

RT: 21.68 min Scan# 2225

Delta R.T. - 0.15 min

Lab File: W6700.D

Acq: 23 Jul 96 5:09 pm

Tgt Ion: 75 Resp: 679

Ion Ratio Lower Upper

75 100

110 0.0 0.0 86.0

0 0.0 0.0 0.0

0 0.0 0.0 0.0

AbundanceIon 75.00 (74.

300 Ion 110.00 (109

21.68

200

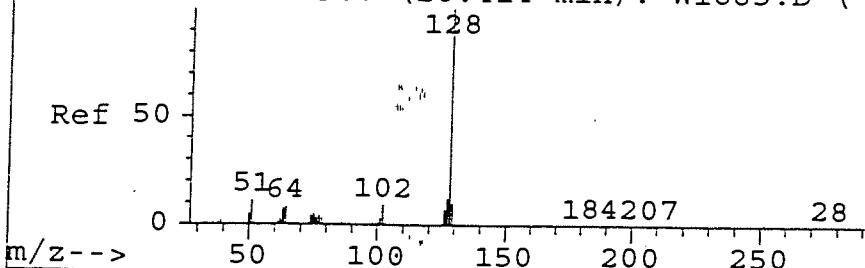
100

0

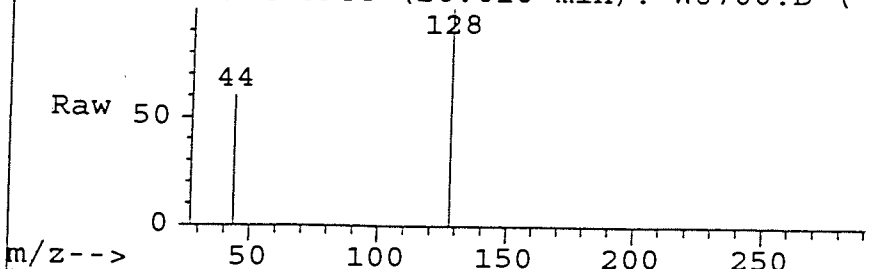
Time-->21.62

21.75

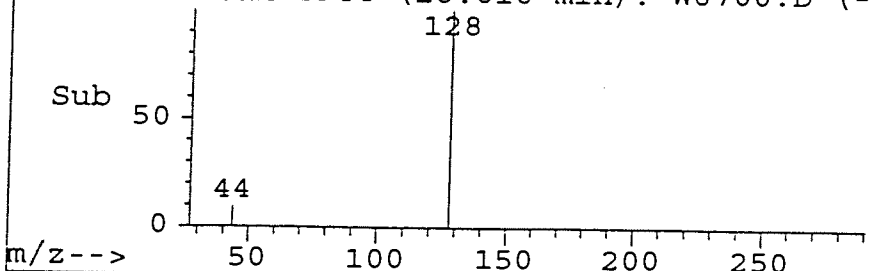
AbundanceScan 2907 (28.414 min): W1885.D (-



AbundanceScan 2944 (28.616 min): W6700.D (*)



AbundanceScan 2944 (28.616 min): W6700.D (-



#65

Naphthalene

Concen: 0.30 ug/l

RT: 28.62 min Scan# 2944

Delta R.T. - 0.20 min

Lab File: W6700.D

Acq: 23 Jul 96 5:09 pm

Tgt Ion: 128 Resp: 4089

Ion Ratio Lower Upper

128 100

102 0.0 0.0 81.5

0 0.0 0.0 0.0

0 0.0 0.0 0.0

AbundanceIon 128.00 (127

1000 Ion 102.00 (101

28.62

500

0

Time-->28.45

28.74

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\JUL23\W6700.D

Acq Time : 23 Jul 96 5:09 pm

Sample : G9607215-1 (5D) /B#96426

Misc : DF=20/1.25ML:25ML/GW-10/ALLIED SIGNAL

Operator: DEBBIE

Inst : VOA3

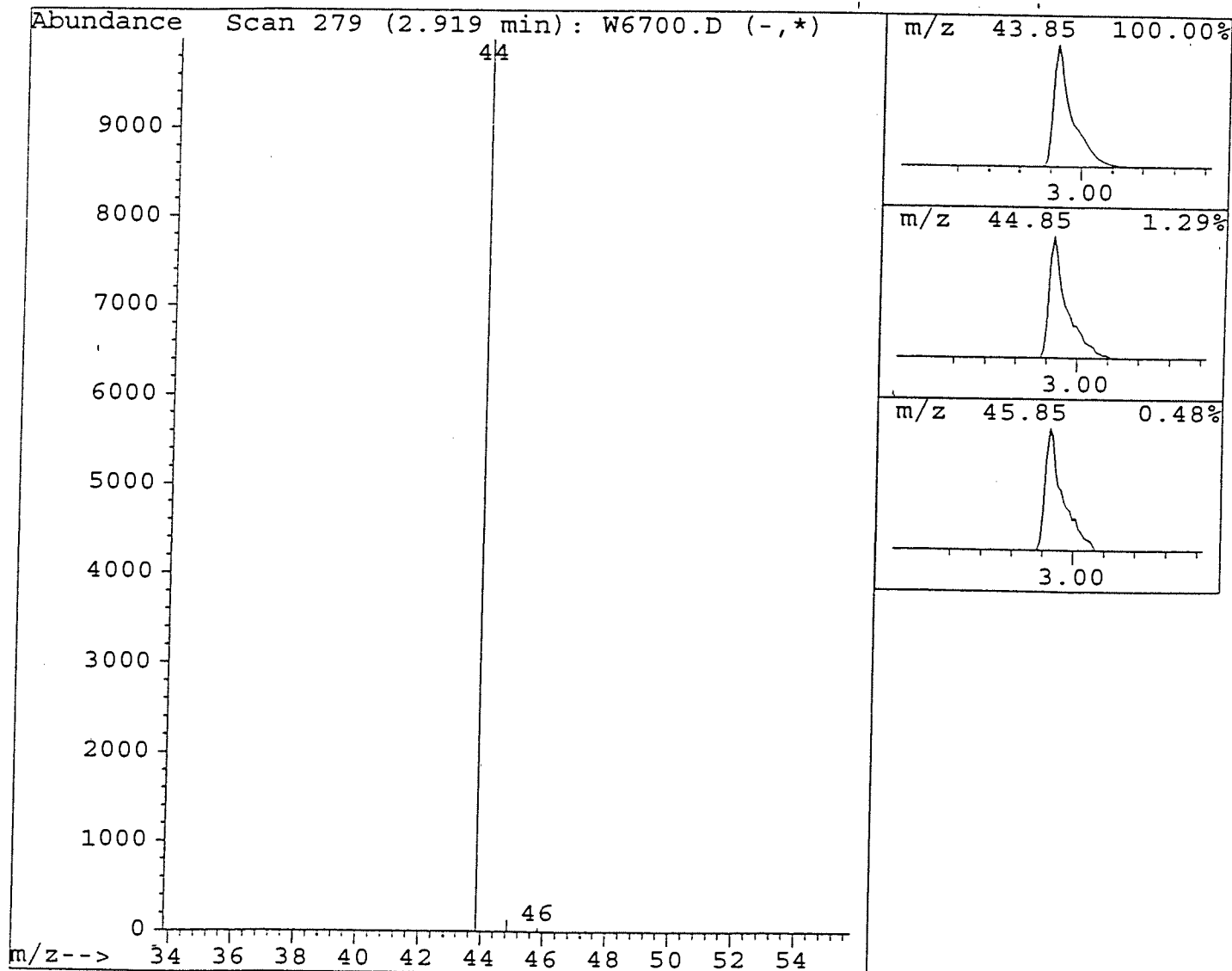
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524JLS.M

Title : 5 PTS CALIBRATIONS FOR 524.2 ON 07/14/96, ON 537-3

Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
2.92	64.68 ug/l	4428094	Fluorobenzene	11.13	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 No Hits From C:\DATABASE\NBS75K.L			0	000000-00-0	0



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**RESULTS OF GROUNDWATER MONITORING
FIRST AND SECOND QUARTERS 1996
AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

**VOLUME III
Quality Assurance/Quality Control Report
Second Quarter 1996
2 of 2**

Prepared for:
AlliedSignal Aerospace
2525 West 190th Street
Torrance, California 90504

Prepared by:
SECOR International Incorporated
3437 Empresa Drive, Suite A
San Luis Obispo, California 93401

May 14, 1997
Job Number: A0057-001-01/ASN45, ASN47

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APPENDIX E

FUELS

MDL Summary

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er No.: 69505267
 orted: 06.12.95

REPORT OF MDL RESULTS

Page 1

ANALYST	CONC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AUC	SD	MDL	RDL(AQ)	RDL(HAQ)
(8015H) 536-01	1.00	0.385	0.479	0.497	0.458	0.314	0.337	0.393	0.409000	0.070812	0.222350	1 ng/L	5 ng/kg
PH (gasoline)	5.00	1.98	2.11	2.27	1.29	1.24	1.23	1.89	1.715714	0.448399	1.407973	2 ng/L	10 ng/kg
PH (diesel)	6.00	2.36	2.59	2.75	1.75	1.55	1.57	2.28	2.121429	0.494180	1.551725	2 ng/L	10 ng/kg
PH (total)													

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Standard Operating Procedure GC00288 - Total Fuel Hydrocarbons

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BCA STANDARD OPERATING PROCEDURE

SOP# GC00288.G
Tier 2 Rev. 01/23/96
Page 1 of 5

TOTAL FUEL HYDROCARBONS

A. Summary

This method determines total fuel hydrocarbons in aqueous, soil and sediment samples by gas chromatography. It can also determine the carbon range and characterization.

The sample is extracted with methylene chloride and then injected into a gas chromatograph equipped with a megabore column and flame ionization detector.

B. Safety

1. Analyst should use gloves when handling samples or standards.
2. Safety glasses should be worn.
3. Standards and samples should be prepared in the hood.
4. Methylene chloride is a suspected carcinogen and should be used under a hood. A respirator should be worn.

C. Apparatus

1. Varian 3400 or equivalent gas chromatograph equipped with
 - a. Flame ionization detector
 - b. Varian 8000 series autosampler, or equivalent
2. Column (J & W Scientific, 30m x 0.53mm ID DB-5 column, 1.5 u film thickness, or equivalent).
3. Autosampler vials, 1.5-mL.
4. Graduated pipets, 25-mL.
5. Hamilton syringes: 10-uL, 100-uL, 500-uL, 2500-uL.
6. Repipetor, 10-mL.
7. Top-loading balance.

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D. Reagents

1. Methylene chloride (E.M. Science, Chromatography grade)
2. Compressed air, high purity
3. Compressed hydrogen, high purity
4. Compressed helium, high purity
5. Standard stock solutions, 10000 ppm: Weigh 0.50 g of neat fuel, normally diesel and/or gasoline, into separate 50 mL volumetric flasks. Dilute to the mark with methylene chloride. Mix well. Prepare fresh annually.
6. Working calibration standards: Prepare five concentration levels, 50, 100, 200, 400 and 500 ppm by diluting the stock solutions with methylene chloride.
7. Laboratory control standard (LCS): Using the same stock as the calibration, 10000 ppm.
8. Surrogate solution, 10000-ppm: Weigh 0.25 g of reagent grade naphthalene into a 25-mL volumetric flask; dilute to the mark with methylene chloride; mix well.
9. Second source verification: A 250 ppm separate source standard is analyzed to verify the standard curve. The result must be + 25% to proceed.

E. Procedure

1. Notebook Preparation
 - a. Enter the date, the instrument number and the analyst's initials in the header.
 - b. Prepare columns for log-number, bottle number, sample description, client name, sample weight, final volume and comments.
 - c. Enter the log numbers, sample descriptions, and client codes in the appropriate columns.
 - d. Prepare the runlog by entering the date and analyst's initials in the header. Enter the log number of each sample to be run, the dilution (if any) and the data file name (the chromatogram number) in the appropriate columns of the run log.
2. Soil Preparation:

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- b. Open the brass core and discard the top 2 inches of soil.
 - c. Weigh 10 grams of soil into the vial.
 - d. Record the sample weight in the prep notebook.
 - e. For matrix spikes, weigh out additional portions of sample and add 100 uL of the LCS solution.
 - f. For the method blank and LCS, put 10 mL methylene chloride in each vial. Add 100 uL of diesel LCS solution and/or 50 uL of gasoline LCS solution to the LCS vial.
 - g. Add surrogate solution. Add 10 uL of 10000 ppm naphthalene solution to each vial.
 - h. Add 10 mL of methylene chloride to all vials, except the blank and LCS which already have methylene chloride added.
 - i. Shake vigorously for two minutes.
3. Aqueous Sample Preparation:
- a. Pipet 25 ml of sample into a 40-mL vial. Sample should be taken from a vial with no headspace.
 - b. For matrix spikes, pipet additional portions of sample into 40-mL vials.
 - c. For the method blank and LCS, pipet 25 mL of DI water into separate vials. Add 50 uL diesel standard at 10000 ppm and/or 25 uL gasoline standard at 10000 ppm to the LCS vial depending on the fuel of interest.
 - d. Add 5 uL of the 10000 ppm naphthalene solution.
 - e. Add 5 mL of methylene chloride.
 - f. Shake vigorously for two minutes.
4. Sample Analysis:
- a. A methylene chloride wash should be run to check the instrument contamination.
 - b. Initially calibrate the instrument by injecting five calibration standards.
 - c. Run the calibration check standard.

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d. If the calibration check standard meets the criteria in section F, load the autosampler with samples. Remember the method blank, the spike, the spike duplicate and the LCS.

e. GC conditions:

Oven temp
Initial temp = 40 C
Initial hold = 4 min
Rate = 20 C/min
Final temp = 300 C
Final hold = 8.25 min

Detector temp = 350 C
Injector temp = 300 C
FID range = 1

Autosampler injection time = 0.02 min
Splitless injection = 0.40 min
Injection volume = 2 uL

F. Quality Control

1. The calibration curve should have a correlation coefficient of at least 0.995.
2. The calibration must be checked by running the midpoint standard every ten injections. The concentration of the calibration check must be within 25% of the expected value. If not, rerun the calibration check or take corrective action such as baking out the column or cleaning the injector. If the calibration check is still out, recalibrate.
3. A method blank, matrix spike, matrix spike duplicate and LCS must be prepared and analyzed with each batch of samples. Refer to the QA Manual, section 9.2, for batch QC evaluation guidelines.

G. Calculations and Data Review

$$\text{Concentration of aqueous (mg/L)} = \frac{\text{As} \times \text{RF} \times \text{Ve}}{\text{Vs}}$$

$$\text{Concentration soil (mg/kg)} = \frac{\text{As} \times \text{RF} \times \text{Ve}}{\text{Ws}}$$

where:

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As = Area count of the sample
RF = Response factor from calibration curve
Ve = Volume of the methylene chloride extract in mL
Vs = Volume of the aqueous sample in mL
Ws = Weight of the soil sample in g

Carbon range:

Carbon range is determined by comparing with the retention time of alkanes standard.

Characterization:

Characterization is done by matching the pattern with various type of fuels such as gasoline, diesel, and jet fuel.

H. Troubleshooting

1. Low spike recovery

Check the surrogate recovery. If the surrogate recovery is also low, check for leaks and re-run the sample.

2. Excessive cross-contamination

- a. Bake column at 270 degrees C for at least one hour and then run several methylene chloride washes.
- b. Replace the glass insert and cut the column at the injector end.

I. Interferences

1. Any compound which responds to an FID detector will interfere with fuels analysis.

J. References

1. Personal communication, Technical Services Dept., Chevron Research, Richmond, CA
2. Test Methods for Evaluating Solid Waste, Volume 1B, USEPA, Third Edition, November 1986, Method 8015.

Reviewed and approved
L. Geddes 01/23/96
Issued _____

Standards Documentation

002228

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 10:35:01 23 JAN 1997 - P. 1 :

=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: GASOLINE STOCK
Date Prepared: 05/29/96
Prepared by: JOSEPHINE PADUA
Type: Stock Solution,
Spike Solution,
Lab Control Standard

Reference #:SV9605040
Expiration Date: 08/29/96
Total Volume: 50 ML

Solvent	Manufacturer	Lot#	%
<u>MECL2</u>	<u>EM SCIENCE</u>	<u>35333</u>	<u>100</u>
Source	Amount	Component	Final Concentration
<u>SV9509086</u>	<u>0.5000 G</u>	<u>Gasoline</u>	<u>10,000.0000 PPM</u>

Disposal Method:
Verification Date: 05/29/96
Hazard Class: Carcinogen

Disposal Date:

002229

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:46:11 23 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: GASOLINE 5PT
Date Prepared: 05/29/96
Prepared by: JOSEPHINE PADUA
Type: Calibration Standard

Reference #:SV9605041
Expiration Date: 08/29/96
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	EM SCIENCE	35333	100

Source	Amount	Component	Final Concentration
SV9605040	10.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509086	0.5000 G	Gasoline	10.0000 PPM
SV9605040	25.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509086	0.5000 G	Gasoline	25.0000 PPM
SV9605040	50.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509086	0.5000 G	Gasoline	50.0000 PPM
SV9605040	100.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509086	0.5000 G	Gasoline	100.0000 PPM
SV9605040	250.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509086	0.5000 G	Gasoline	250.0000 PPM

Disposal Method:
Verification Date: 05/29/96
Hazard Class: Carcinogen

Disposal Date:

002230

End of Report

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:46:17 23 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: CV GASOLINE
Date Prepared: 05/29/96
Prepared by: JOSEPHINE PADUA
Type: Calibration Verification

Reference #:SV9605043
Expiration Date: 08/25/96
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	EM SCIENCE	35333	100

Source	Amount	Component	Final Concentration
SV9601027	25.0000 UL	Gasoline	50.0000 PPM

Disposal Method:
Verification Date: 05/29/96
Hazard Class: Carcinogen

Disposal Date:

002231

End of Report

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:46:23 23 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: GASOLINE CV
Date Prepared: 06/13/96
Prepared by: JOSEPHINE PADUA
Type: Calibration Verification

Reference #:SV9606013
Expiration Date: 08/29/96
Total Volume: 50 ML

Solvent	Manufacturer	Lot#	%
MECL2	EM SCIENCE	35333	100

Source	Amount	Component	Final Concentration
SV9605040	0.2500 ML	<-- Prepared Source. Level 1 --> Gasoline	50.0000 PPM
.SV9509086	0.5000 G		

Disposal Method:
Verification Date: 06/13/96
Hazard Class: Carcinogen

Disposal Date:

002232

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 10:35:41 23 JAN 1997 - P. 1 :

=====

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: DIESEL STOCK

Date Prepared: 05/16/96

Prepared by: JOSEPHINE PADUA

Type: Stock Solution,

Spike Solution,

Lab Control Standard

Reference #:SV9605032

Expiration Date: 08/16/96

Total Volume: 50 ML

Solvent	Manufacturer	Lot#	%
MECL2	EM SCIENCE	35263	100

Source	Amount	Component	Final Concentration
SV9509090	0.5000 G	TPH (Diesel Range)	10,000.0000 PPM

Disposal Method:

Verification Date: 05/16/96

Hazard Class: Carcinogen

Disposal Date:

002233

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 10:46:05 23 JAN 1997 - P. 1 :

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: DIESEL 5PT

Date Prepared: 05/29/96

Prepared by: JOSEPHINE PADUA

Type: Calibration Standard

Reference #:SV9605039

Expiration Date: 08/16/96

Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	EM SCIENCE	35333	100

Source	Amount	Component	Final Concentration
SV9605032	50.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509090	0.5000 G	TPH (Diesel Range)	50.0000 PPM
SV9605032	100.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509090	0.5000 G	TPH (Diesel Range)	100.0000 PPM
SV9605032	200.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509090	0.5000 G	TPH (Diesel Range)	200.0000 PPM
SV9605032	400.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509090	0.5000 G	TPH (Diesel Range)	400.0000 PPM
SV9605032	600.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509090	0.5000 G	TPH (Diesel Range)	600.0000 PPM
SV9605032	1,000.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9509090	0.5000 G	TPH (Diesel Range)	1,000.0000 PPM

Disposal Method:

Verification Date: 05/29/96

Hazard Class: Carcinogen

Disposal Date:

002234

End of Report

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 10:46:19 23 JAN 1997 - P. 1 :

=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: DIESEL CV
Date Prepared: 05/16/96
Prepared by: JOSEPHINE PADUA
Type: Calibration Verification

Reference #:SV9605033
Expiration Date: 08/16/96
Total Volume: 50 ML

Solvent	Manufacturer	Lot#	%
MECL2	EM SCIENCE	35263	99

Source	Amount	Component	Final Concentration
SV9605032	1.2500 ML	<-- Prepared Source. Level 1 -->	
.SV9509090	0.5000 G	TPH (Diesel Range)	250.0000 PPM

Disposal Method:
Verification Date: 05/16/96
Hazard Class: Carcinogen

Disposal Date:

002235

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 10:46:14 23 JAN 1997 - P. 1 :

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: CV DIESEL

Date Prepared: 05/29/96

Prepared by: JOSEPHINE PADUA

Type: Calibration Verification

Reference #:SV9605044

Expiration Date: 08/29/96

Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	EM SCIENCE	35333	100

Source	Amount	Component	Final Concentration
SV9601023	125.0000 UL	TPH (Diesel Range)	250.0000 PPM

Disposal Method:

Verification Date: 05/29/96

Hazard Class: Carcinogen

Disposal Date:

002236

End of Report

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 10:46:22 23 JAN 1997 - P. 1 :

=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: DIESEL CV
Date Prepared: 07/09/96
Prepared by: JOSEPHINE PADUA
Type: Calibration Verification

Reference #:SV9607030
Expiration Date: 09/27/96
Total Volume: 50 ML

Solvent	Manufacturer	Lot#	%
MECL2	EM SCIENCE	35333	100

Source	Amount	Component	Final Concentration
SV9607029	1.2500 ML	<-- Prepared Source. Level 1 --> TPH (Diesel Range)	250.0000 PPM
.SV9509090	0.5000 G		

Disposal Method:
Verification Date: 07/09/96
Hazard Class: Carcinogen

Disposal Date:

002237

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:34:08 23 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: NAPHTHALENE
Date Prepared: 05/16/96
Prepared by: JOSEPHINE PADUA
Type: Surrogate,
Stock Solution

Reference #:SV9605030
Expiration Date: 08/16/96
Total Volume: 25 ML

Solvent	Manufacturer	Lot#	%
<u>MECL2</u>	<u>E M SCIENCE</u>	<u>35263</u>	<u>100</u>

Source	Amount	Component	Final Concentratio
<u>SV9510006</u>	<u>0.2500 G</u>	<u>NAPHTHALENE</u>	<u>10,000.0000 PPM</u>

Disposal Method:
Verification Date: 05/16/96
Hazard Class: Carcinogen

Disposal Date:

002238

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:46:08 23 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: NAPTHALENE;OTERPHENY
Date Prepared: 05/29/96
Prepared by: JOSEPHINE PADUA
Type: Calibration Standard

Reference #:SV9605042
Expiration Date: 08/16/96
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	EM SCIENCE	35333	100

Source	Amount	Component	Final Concentration
SV9605031	4.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9504020	0.2500 G	O-TERPHENYL	4.0000 PPM
SV9605030	4.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9510006	0.2500 G	NAPTHALENE	4.0000 PPM
SV9605031	8.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9504020	0.2500 G	O-TERPHENYL	8.0000 PPM
SV9605030	8.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9510006	0.2500 G	NAPTHALENE	8.0000 PPM
SV9605031	12.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9504020	0.2500 G	O-TERPHENYL	12.0000 PPM
SV9605030	12.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9510006	0.2500 G	NAPTHALENE	12.0000 PPM
SV9605031	16.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9504020	0.2500 G	O-TERPHENYL	16.0000 PPM
SV9605030	16.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9510006	0.2500 G	NAPTHALENE	16.0000 PPM
SV9605031	20.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9504020	0.2500 G	O-TERPHENYL	20.0000 PPM
SV9605030	20.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9510006	0.2500 G	NAPTHALENE	20.0000 PPM

Disposal Method:
Verification Date: 05/29/96
Hazard Class: Carcinogen

Disposal Date:

002239

Prep Logs and Analysis Run Logs

002240

From Page No. _____

Client

G. Lab # 15810

I.V

I.V

Comments

M. Alank

LC5-1

LC5-2

G9607190-1 / GW-6

G9607191-1 / GW-1

-15₁ -1-15₂ -1

-2 -2

-3 -3

-4 -9

G9607215-1 -7

-2 -8

-3 -10

G9607216-1 -5

G9607173-1 / WS-008

-2 EB

G9607223-1 / GW-4

25 ml

5 ml

(1)

(2) (3)

(2) (3)

(2) (3)

(2) (3)

Scavenger

AC Irvine

Scavenger

MeCl₂ lot # 35333Naphthalene CV 9605030 ; 5 μ l (1)Gasoline SV 9605040 ; 25 μ l (2)Diesel SV 9605032 ; 50 μ l (3)

To Page No. _____

Witnessed & Understood by me, _____

Date

 07-15-96
 2-15

Invented by _____

Recorded by _____

002241

Date _____

Frc Page No. _____

CS Lab #	Sex file	Client	SV ID	M#	DF
Nash	AE 29				
C 10 : C 25	1				
C 10 : C 44	2				
Diesel 50 11M	3		SV 9605039		
100	4				
200	5				
400	6				
600	7				
Naphthalene-D-Toph 4 11M	8		SV 9605042		
8	9				
12	10				
16	11				
20	12				
Gasoline 10 11M	13		SV 9605041		
25	14				
50	15				
100	16				
250	17				
CV Diesel 250 11M	18		SV 9605044		
CV Gasoline 50 11M	19		SV 9605043		
Milank	20			9686	
CS-1	21				
CS-2	22				
B 9605527-1	23	MCSD	53325-M1-25.0		
-2	24		M2-10.0		
-3	25		M3-15.0		
-35 ₁	26		M3-15.0		
-35 ₂	27		M3-15.0		
-4	28		M4-30.0		
69605528-1	29		52426-M1-7.5		
Diesel 250 11M	30		SV 9605033		
	31				

To Page No. _____

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

002242

111


Project No. _____

TITLE

07.16.96 - 96.17.96

Book No. _____

F 1 Page No. _____

G. 196 #	Sq. file	Client	St 10	A#	DF
	UAG 10				
Wash	- 26				
Gasoline 50 ppm	27		SV 4606013		
Diesel 250 ppm	28		SV 9607030		
C10, C25	29				
M Blank	30			9640	
CCS-1	31				
CCS-2	32				
G 9607190-1	33	Scalor	GM-6		
G 9607191-1	34		-1		
-151	35		-1		
-152	36		-1		
-2	37		-2		
-3	38		-3		
-4	39		-9		
Gasoline 50 ppm	40		SV 9606013		
Diesel 250 ppm	41		SV 9607030		
G 9607215-1	42	Scalor	GM-7	9646	
-2	43		-8		
-3	44		-10		
G 9607216-1	45		-5		
G 9607223-1	46		-4		
G 9607173-1	47	AC Irvine			
-2	48				
Gasoline 50 ppm	49		SV 9606013		
Diesel 250 ppm	50		SV 9607030		
<div style="text-align: center;">  </div>					

To Page No. _____

Witnessed & Understood by me,

Date

Invented by

Date

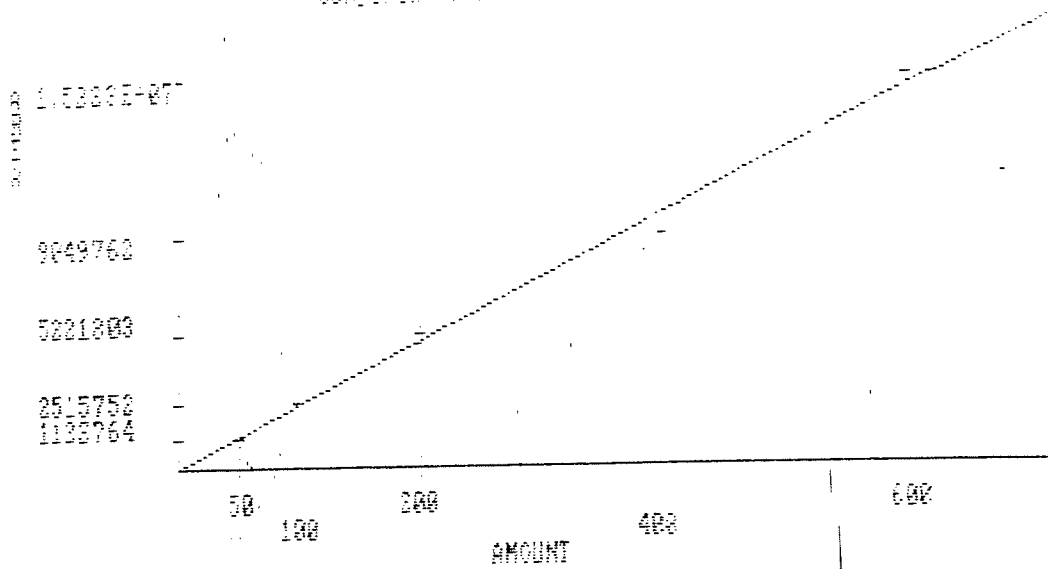
Recorded by

002243

**Initial Calibrations
and
Raw Data (Chromatograms)**

002244

Component #3 DIESEL C10-C25



Component 3 = DIESEL C10-C25
EXTERNAL STANDARD CALIBRATION

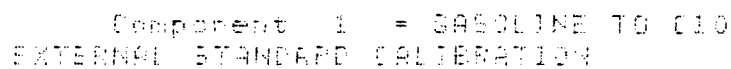
LEVEL	AMOUNT	AREA
1	50.00	1122764
2	100.00	2515752
3	200.00	5221803
4	400.00	9049763
5	600.00	15123670

Y = SLOPE * X + INTERCEPT

Area = 2.4640E+04 * Amount + 0.0000E+00
Amount = 4.0585E-05 * Area + 0.0000E+00
R squared = 0.9927

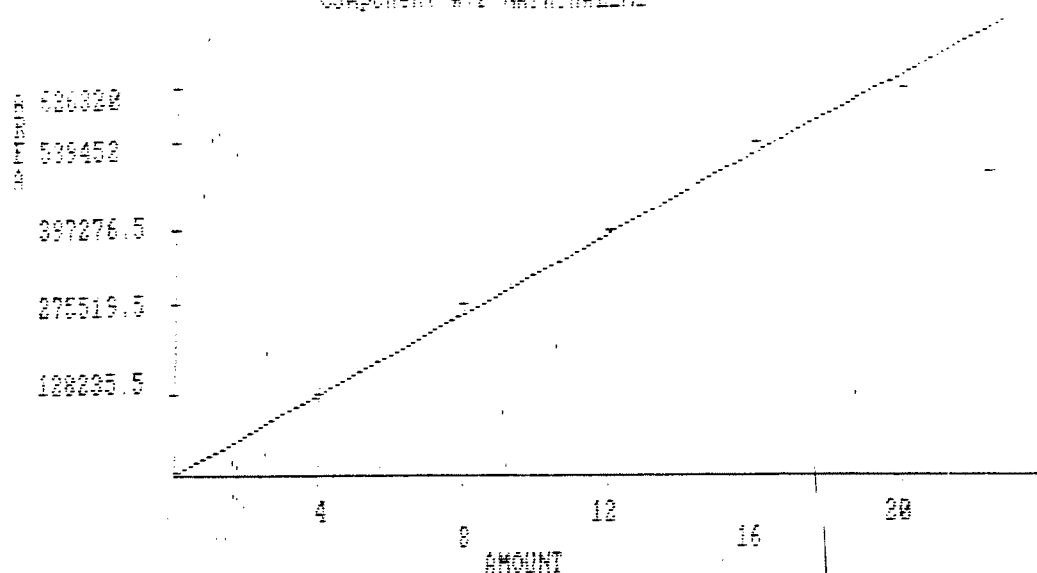
002245

Component #1 GASOLINE 10 C.B.


$$Y = \text{SLOPE} * X + \text{INTERCEPT}$$

002246

Component #12 NAPHTHALENE



Component 2 = NAPHTHALENE
EXTERNAL STANDARD CALIBRATION

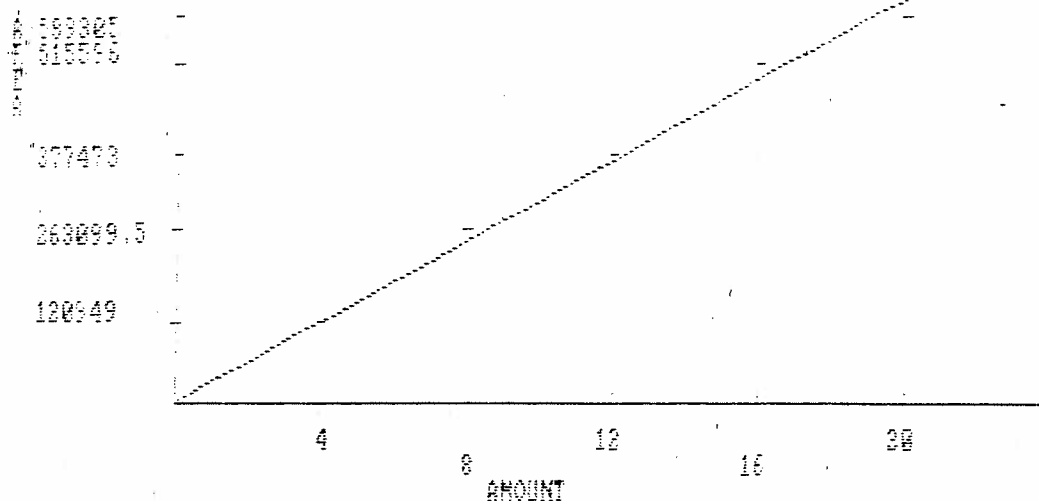
LEVEL	AMOUNT	AREA
1	4.0000	128236
2	8.0000	275520
3	12.0000	397277
4	16.0000	539452
5	20.0000	626320

Y = SLOPE * X + INTERCEPT

Area = 3.2548E+04 * Amount + 0.0000E+00
Amount = 3.0724E-05 * Area + 0.0000E+00
R squared = 0.9923

002247

Component #4 0-TERP-PHENYL



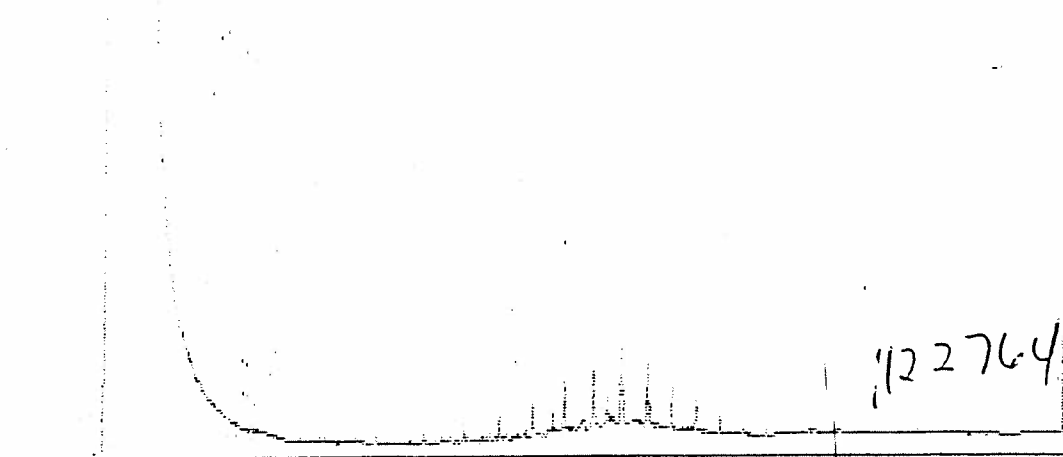
Component 4 = 0-TERP-PHENYL
EXTERNAL STANDARD CALIBRATION

LEVEL	AMOUNT	AREA
1	4.0000	120949
2	8.0000	267100
3	12.0000	377473
4	16.0000	515526
5	20.0000	589305

Y = SLOPE * X + INTERCEPT

Area = 3.0857E-04 * Amount + 0.0000E+00
Amount = 3.2408E-05 * Area + 0.0000E+00
R squared = 0.9890

002248



[Interface 2] 0-25 Min Scale: 100 Mv
 DIESEL Processed: 05-29-1996 15:51:18, segment 1, cycle 4
 RAW DATA SAVED IN FILE L:AE29-4.PTS

00 00 00 00 00 00 00 00 AREA PERCENT REPORT 00 00 00 00 00 00 00 00

***** 05-29-1996 15:51:18 Version 5.1.5 *****
 * Sample Name: DIESEL 50 PPM SU9605039 Date File: L:AE29-4 *
 * Date: 05-29-1996 15:26:10 Method: DIESEL-2 *
 * Interface: 2 Cooles#: 4 Operator JP Channel#: 0 Vial#: N.A *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: 5400 536-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 0: FID Detector 1: *
 * Misc. Information: GAS:NAPTHA:DIESEL:0-TERPH 03/04/96 *

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.300	48272944	99.324500	994273		100.000	48.6
2	8.717	4108	0.0085	1	1335	0.009	5.1
3	9.833	5368	0.0069	1	1706	0.007	2.0
4	10.283	2642	0.0054	1	908	0.005	2.9
5	10.783	7265	0.0149	1	3519	0.015	2.1
6	10.917	3126	0.0064	1	892	0.006	3.5
7	11.217	2766	0.0057	1	771	0.006	3.6
8	11.400	2736	0.0056	1	1105	0.006	2.5
9	11.633	10454	0.0215	1	4530	0.022	2.3
10	12.400	18534	0.0381	1	6252	0.038	3.0
11	12.767	2927	0.0060	1	950	0.006	3.1
12	12.867	11430	0.0235	1	3616	0.024	3.2
13	13.133	21653	0.0446	1	9652	0.045	2.2
4	13.600	17259	0.0355	1	2085	0.036	8.3
15	13.817	33202	0.0683	1	11005	0.069	3.0
16	14.133	10042	0.0207	1	4529	0.021	2.2
17	14.450	46475	0.0956	1	14068	0.096	3.3
18	14.733	10999	0.0226	1	1311	0.023	8.4

002249

19	15.157	5475	0.0171%	1	5475	0.0171%	1
20	15.517	1461	0.0051%	1	1461	0.0051%	1
21	15.250	12514	0.0373%	1	12514	0.0373%	1
22	15.800	1430	0.0045%	1	1430	0.0045%	1
23	16.217	12095	0.0349%	1	12095	0.0349%	1
24	16.767	7823	0.0141%	1	7823	0.0141%	1
25	17.317	4112	0.0035%	1	4112	0.0035%	1
26	18.175	5175	0.0127%	1	5175	0.0127%	1
27	24.767	53375	0.0646%	1	18015	0.065	1

Total Area: 48601244 Area Reject: 3000 One sample per: 1.000 sec

```

***** EXTERNAL STANDARD TABLE *****
***** 05-29-1996 15:51:10 Version 5.1.5 *****
* Sample Name: DIESEL 50 PPM SU9605039 Data File: L:\A529-4
* Date: 05-29-1996 15:26:10 Method: DIESEL-2 05-29-1996 10:50:35 # 370
* Interface: 2 Cables: 4 Operator: JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
*****
* Instrument Type: 3400 536-01 Column Type: DB5/1.25u
* Solvent Description: HE 2ML/MIN
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16,25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS:NAPTHA:DIESEL:0-TERPH 03/04/96
*****

```

Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 3000 One sample per: 1.000 sec
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED COND	AREA	HEIGHT	HEIGHT BL	REF PEAK	% DELTA RET TIME	COND/AREA
1	2.500		4827.2944	99.5477%	48272944	594275	48.6 00			1.0000E-04
2	8.717		0.4109	0.0035%	4109	1535	3.1 1			1.0000E-04
3	9.855		0.5368	0.0049%	5368	1706	2.0 1			1.0000E-04
4	10.255		0.2641	0.0054%	2642	908	2.9 1			1.0000E-04
5	10.785	NAPHTHALENE	0.3541	0.0069%	7265	5519	2.1 1	0	0	4.5534E-05
6	10.917		0.3125	0.0064%	5126	892	3.5 1			1.0000E-04
7	11.217		0.2766	0.0057%	2766	771	3.6 1			1.0000E-04
8	11.400		0.2756	0.0056%	2756	1105	2.5 1			1.0000E-04
9	11.655		1.0453	0.0215%	10454	4530	2.5 1			1.0000E-04
10	12.400		1.2535	0.0381%	12534	6152	3.0 1			1.0000E-04
11	12.767		0.2927	0.0060%	2927	950	3.1 1			1.0000E-04
12	12.867		1.1430	0.0235%	11430	3618	3.2 1			1.0000E-04
13	15.155		2.1655	0.0446%	21655	9652	2.2 1			1.0000E-04
14	15.600	DIESEL C10-C25	1.0762	0.0321%	17259	2085	8.5 1	0	.7407	6.2557E-05
15	15.617		3.5302	0.0695%	55202	11005	3.0 1			1.0000E-04
16	14.155		1.0042	0.0207%	10042	4529	2.3 1			1.0000E-04
17	14.450		4.6475	0.0956%	46475	14068	3.5 1			1.0000E-04
18	14.733		1.0999	0.0226%	10999	1511	8.4 1			1.0000E-04
19	15.067		3.4767	0.0716%	34767	10959	3.2 1			1.0000E-04
20	15.517		0.2462	0.0051%	2462	855	3.0 1			1.0000E-04
	15.650		1.8114	0.0373%	18114	8092	2.2 1			1.0000E-04
21	15.900	0-TERPHENYL	0.1163	0.0024%	2400	584	4.1 1	0	.7604	4.8690E-05
23	16.217		1.2095	0.0244%	12095	5394	2.2 1			1.0000E-04
24	16.767		0.7822	0.0161%	7823	5255	2.4 1			1.0000E-04
25	17.317	MOTOR OIL	0.4399	0.0091%	4112	1728	2.4 1	0	-1.047	1.0699E-04

002250

DATE	DESCRIPTION	AMOUNT	BALANCE
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002251

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07 14.787

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1.0175

1.0175
1.00480

1.0175
1.0175

1.0175
1.0175

1.0175
1.0175

1.0175
1.0175

TOTAL AMOUNT = 4888.9557

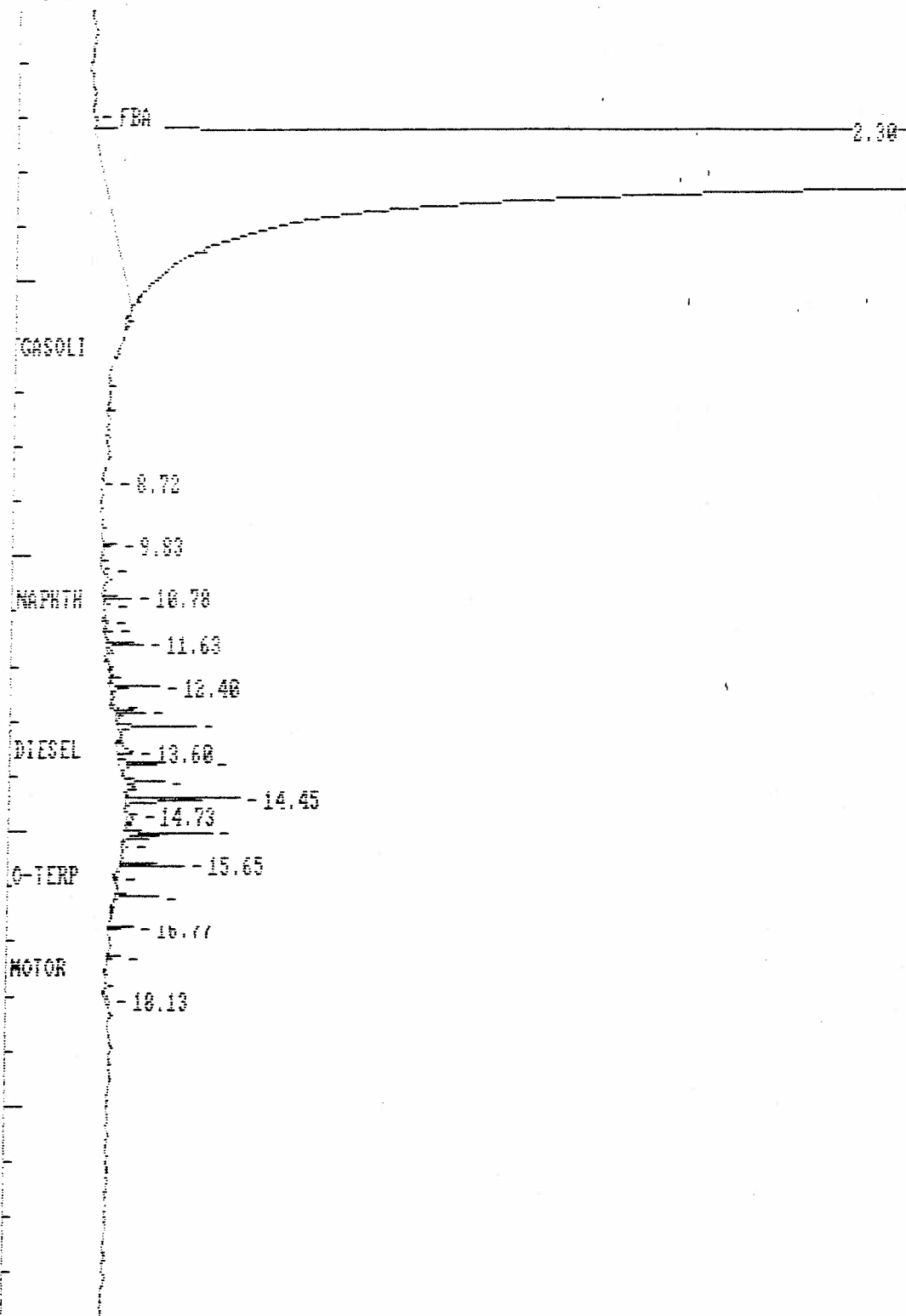
PIECS NOT FOUND IN THIS FILE

NAME - REGISTERED RET. TIME. REFERENCE PEAK
GASOLINE TO 010 6.17 GASOLINE TO 010

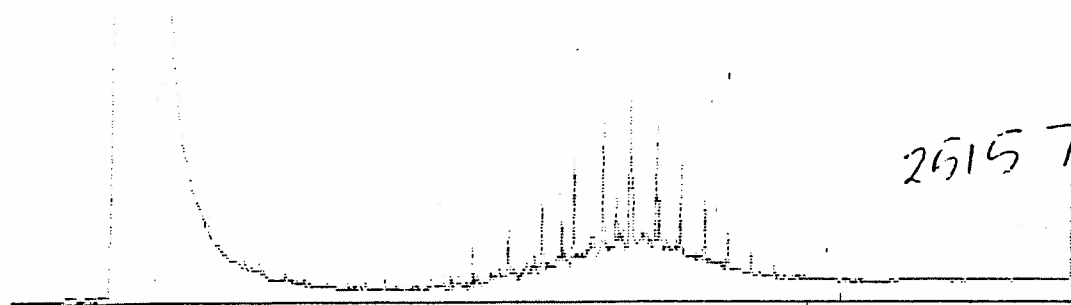
Data File = LARE29-4.PTS. Printed on 05-19-1996 at 15:51:19

Start time: 0.00 min. Stop time: 25.00 min. Offset: 0.00

Full Range: 100 millivolts



002252



[Interface 2] 0-25 Min Scale: 100 Mu
 DIESEL 1 Processed: 05-29-1996 16:25:47, segment 2, cycle 5
 RAW DATA SAVED IN FILE L:AE29-5.PTS

00 00 00 00 00 00 00 00 AREA PERCENT REPORT 00 00 00 00 00 00 00 00

***** 05-29-1996 16:25:53 Version 5.1.5 *****
 * Sample Name: DIESEL 100 PPM SU9305039 Data File: L:AE29-5 *
 * Date: 05-29-1996 16:00:44 Method: DIESEL-2 *
 * Interface: 2 Cycle#: 5 Operator: JP Channel#: 0 Uialb: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 0: FID Detector 1: *
 * Misc. Information: GAS:NAPTHA:DIESEL:O-TERPH 03/04/96 *

 Starting Delay: 0.00 Run Time: 25.00

Pe No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	2.300	47851848	98.664000	0	993514	100.000	48.2
2	5.400	2385	0.0049	1	1168	0.005	2.0
3	5.733	6196	0.0128	1	1796	0.013	3.5
4	6.550	2632	0.0054	1	1125	0.006	2.5
5	7.367	2675	0.0055	1	1355	0.006	2.0
6	8.267	5587	0.0115	1	1114	0.012	5.0
7	8.717	6249	0.0129	1	2753	0.013	2.3
8	9.853	10026	0.0208	1	3421	0.021	2.9
9	10.100	4639	0.0096	1	1907	0.010	2.4
10	10.283	4219	0.0087	1	1877	0.009	2.2
11	10.450	6409	0.0132	1	2043	0.013	3.1
12	10.783	14000	0.0289	1	6891	0.029	2.0
13	10.917	5472	0.0113	1	1477	0.011	3.7
14	11.217	3992	0.0144	1	1770	0.015	3.9
15	11.400	8951	0.0185	1	2508	0.019	3.9
16	11.633	20592	0.0425	1	9107	0.043	2.3
17	11.783	3556	0.0073	1	1795	0.007	2.0

002254

13	11.493	4785	0.0124	1	8104	0.012	2.1
14	11.153	10459	0.024	1	8104	0.024	2.1
15	11.401	8158	0.0758	1	11145	0.075	2.1
16	12.767	4557	0.0055	1	1451	0.011	2.1
17	12.867	12158	0.0468	1	1012	0.047	2.1
18	13.175	40585	0.1387	1	19015	0.185	2.1
24	13.603	52175	0.1615	1	4017	0.167	2.1
25	13.817	27619	0.1354	1	23704	0.141	2.1
26	14.133	18922	0.0411	1	8903	0.042	2.1
27	14.237	4057	0.0084	1	7491	0.008	1.7
28	14.450	92131	0.1500	1	27133	0.153	2.4
29	14.900	4078	0.0033	1	1429	0.006	2.8
30	15.067	71115	0.1466	1	22319	0.149	2.2
31	15.317	5857	0.0121	1	1549	0.012	2.3
32	15.650	39414	0.0813	1	15974	0.082	2.5
33	16.217	22477	0.0467	1	10757	0.047	2.1
34	16.767	15713	0.0524	1	6661	0.053	2.4
35	17.317	8114	0.0167	1	3677	0.017	2.2
36	17.850	4434	0.0091	1	1821	0.009	2.4
37	24.767	52217	0.0664	1	18134	0.067	1.3

Total Area: 48499796 Area Reject: 2000 One sample per 1.000 sec

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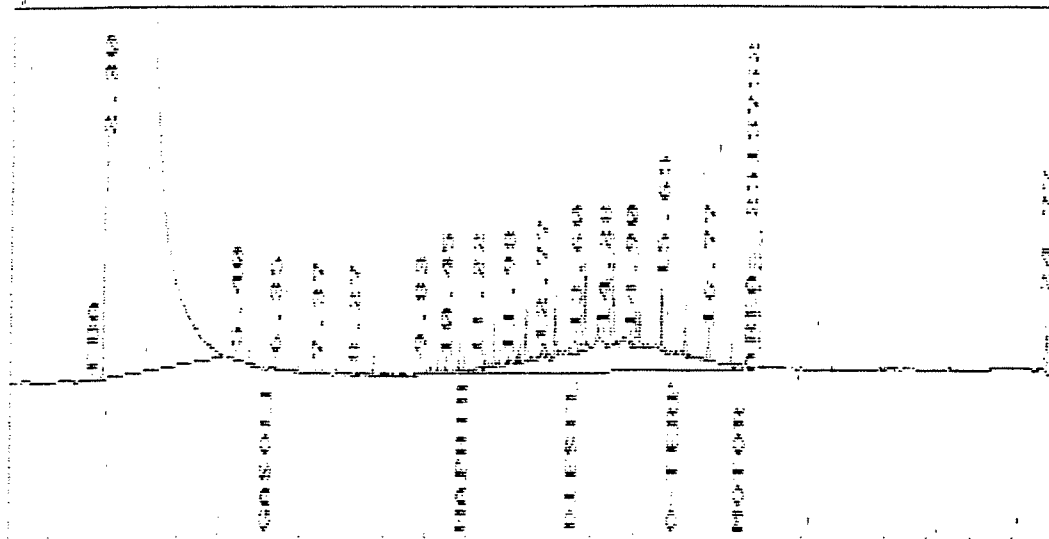
***** EXTERNAL STANDARD TABLE *****
***** 05-29-1996 16:25:53 Version 5.1.5 *****
* Sample Name: DIESEL 100 PPM SU9205059 Data File: L:AE29-5
* Date: 05-29-1996 16:00:44 Method: DIESEL-2 05-29-1996 10:56:35 # 670
* Interface: E Cycle#: 15 Operator: JP Channel#: 0 Vial#: N/A
  Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
*****
* Instrument Type: 3400 554-01 Column Type: DB5X.25u
* Solvent Description: HE 2ML/MIN
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-3/MIN-16.25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS:NAPHTHA:DIESEL:O-TERPH 03/04/96
*****
Starting Delay: 0.00 Ending retention time: 15.00
Area reject: 2000 One sample per 1.000 sec
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.300		47851846	98.7439%	47851848	595514	48.2 90			1.0000E-04
2	5.400		0.2385	0.0049%	2385	1168	2.0 1			1.0000E-04
3	5.753		0.4196	0.0128%	4196	1796	3.5 1			1.0000E-04
4	6.350	GASOLINE TO C10	0.2772	0.0057%	2632	1125	2.3 1	0	2.917	1.0550E-04
5	7.367		0.2675	0.0055%	2675	1353	2.0 1			1.0000E-04
6	8.267		0.5586	0.0115%	5587	1114	5.0 1			1.0000E-04
7	8.717		0.3249	0.0129%	6249	2753	2.3 1			1.0000E-04
8	9.933		1.0056	0.0208%	10086	3421	2.9 1			1.0000E-04
9	10.100		0.4639	0.0096%	4639	1907	2.4 1			1.0000E-04
	10.283		0.4219	0.0087%	4219	1877	2.2 1			1.0000E-04
11	10.450		0.6409	0.0132%	6409	2043	3.1 1			1.0000E-04
12	10.765	NAPHTHALENE	0.6435	0.0133%	14000	6891	2.0 1	0	0	4.5984E-05
13	10.917		0.5472	0.0113%	5472	1477	3.7 1			1.0000E-04
14	11.217		0.6992	0.0144%	4992	1779	3.9 1			1.0000E-04

002255

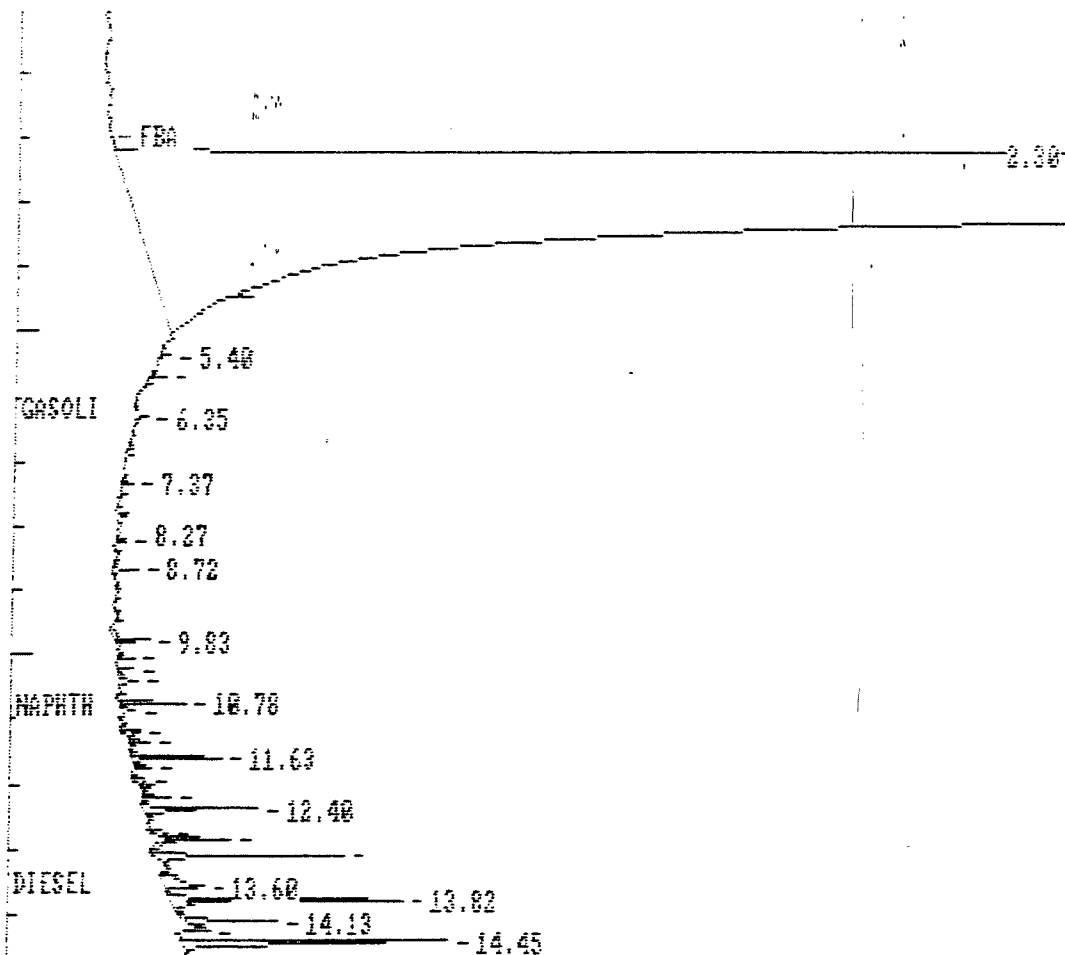
07:00:00
 START TIME: 17:00:00 HEIGHT: 54
 07:00:00
 Unit of data file: 1.0015-0.01
 Unit: 07-04-100 Time: 07:00:00
 Sample Name: 11011 10 000 1100
 Start Time: 0.0 Stop Time: 15.15 Min. 100 at 51.7 Max. Scale: 10.0



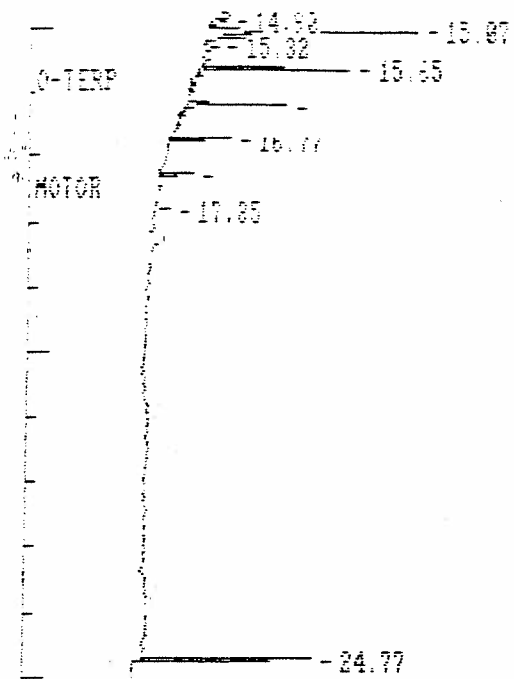
15	11.436	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
16	11.685	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
17	11.795	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
18	11.935	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
19	12.255	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
20	12.400	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
21	12.767	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
22	12.867	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
23	13.135	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
24	13.600 DIESEL C10-C25	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
25	13.817	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
26	14.135	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
27	14.285	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
28	14.450	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
29	14.900	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
30	15.067	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
31	15.317	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
32	15.650 D-TERPHENYL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
33	16.217	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
34	16.767	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
35	17.317 MOTOR OIL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
36	17.850	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04
37	24.767	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001E-04

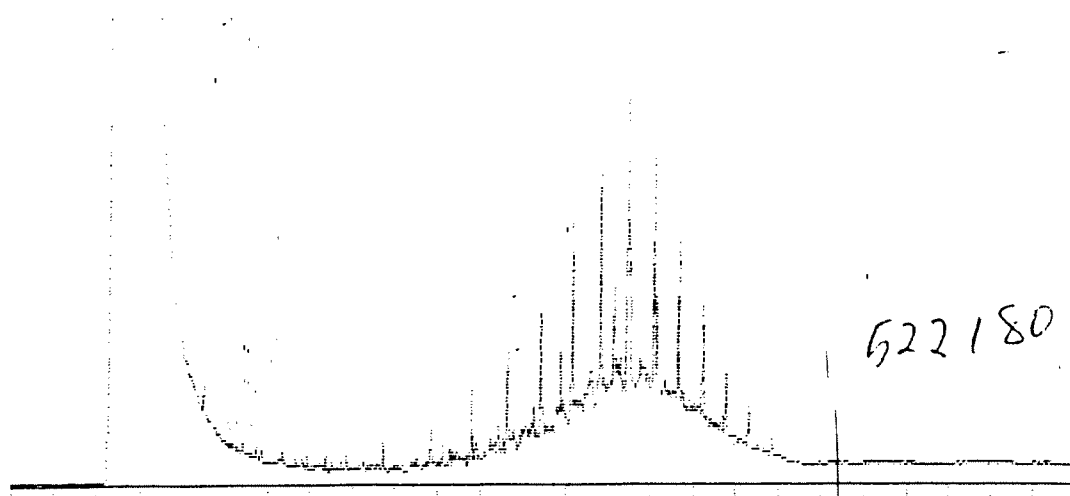
TOTAL AMOUNT = 4646.0557

Data File = L:AE29-B PTS Printed on 05-29-1996 at 16:25:54
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 min.
11 Range: 100 millivolts



002257





[Interface 2] 0-25 Min Scale: 100 Hz
 DIESEL 2 Processed: 05-29-1996 17:00:26, segment 5, cycle 6
 RAW DATA SAVED IN FILE L:AE29-6.PTS

***** 05-29-1996 17:00:51 Version 5.1.5 *****
 * Sample Name: DIESEL 200 PPM SUP605059 Date File: L:AE29-6 *
 * Date: 05-29-1996 16:35:23 Method: DIESEL-2 *
 * Interface: 2 Cycle#: 10 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: 3400.556-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 0: FID Detector 1: *
 * Misc. Information: GAS:NAPHTHA:DIESEL:0-TERPH 05/04/96 *

 Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	2.500	47052268	97.185700		595875	100.000	47.3
2	4.483	4446	0.0092	1	4477	0.009	1.0
3	5.400	5720	0.0118	1	2279	0.012	2.5
4	5.733	6600	0.0136	1	2832	0.014	2.5
5	5.867	4538	0.0090	1	1942	0.009	2.2
6	6.350	3453	0.0071	1	2120	0.007	1.6
7	6.650	3064	0.0063	1	1156	0.007	2.6
8	6.800	3506	0.0072	1	1245	0.007	2.8
9	6.917	4959	0.0102	1	2056	0.011	2.4
10	7.367	4875	0.0101	1	3273	0.010	2.1
11	7.517	3549	0.0073	1	1533	0.008	2.3
12	7.717	2634	0.0054	1	1240	0.006	2.1
13	7.850	6160	0.0127	1	2472	0.013	2.5
14	8.267	10008	0.0207	1	1890	0.021	5.3
15	8.717	12280	0.0254	1	5199	0.026	2.4
16	9.517	17147	0.0354	1	2104	0.036	9.1
17	9.833	27789	0.0574	1	6663	0.059	4.2

002259

1	10.153	30197	0.0117	1	30197	0.0117	1.0
2	10.453	1738	0.0057	1	1738	0.0057	1.0
3	10.619	28994	0.0589	1	13763	0.0292	1.0
4	10.785	10133	0.0117	1	10110	0.0117	1.0
5	10.900	5794	0.0140	1	1697	0.0044	1.0
6	11.100	11375	0.0251	1	3252	0.0066	1.0
7	11.217	67810	0.0405	1	4404	0.0047	1.0
8	11.400	61861	0.1278	1	18550	0.131	1.0
9	11.675	59705	0.1253	1	6951	0.127	1.0
10	12.235	67110	0.1386	1	28040	0.143	1.0
11	12.400	4864	0.0100	1	1338	0.010	1.0
12	12.667	9100	0.0188	1	2842	0.019	1.0
13	12.767	39291	0.0912	1	13407	0.084	1.0
14	12.867	99055	0.1839	1	36820	0.189	1.0
15	13.135	7612	0.0145	1	1804	0.015	1.0
16	13.350	61348	0.1267	1	7528	0.130	1.0
17	13.600	124396	0.2569	1	44251	0.264	1.0
18	13.817	58782	0.0801	1	17497	0.082	1.0
19	14.153	7261	0.0150	1	4678	0.015	1.0
20	14.285	180819	0.5735	1	53659	0.384	1.0
21	14.450	41848	0.0364	1	4778	0.039	1.0
22	14.753	131982	0.2726	1	42463	0.281	1.0
23	15.067	15287	0.0316	1	5177	0.032	1.0
24	15.317	69242	0.1430	1	30480	0.147	1.0
25	15.650	4647	0.0096	1	2140	0.010	1.0
26	15.750	5384	0.0122	1	1817	0.013	1.0
27	15.900	5498	0.0072	1	1394	0.007	1.0
28	16.000	42900	0.0886	1	20069	0.091	1.0
29	16.217	4091	0.0084	1	1259	0.009	1.0
30	16.635	52829	0.0678	1	12363	0.070	1.0
31	16.767	16851	0.0348	1	7042	0.036	1.0
32	17.317	8634	0.0178	1	3412	0.018	1.0
33	17.650	3774	0.0078	1	1345	0.008	1.0
34	18.400						

Total Area: 48414788 Area Reject: 2000 One sample per 1.000 sec

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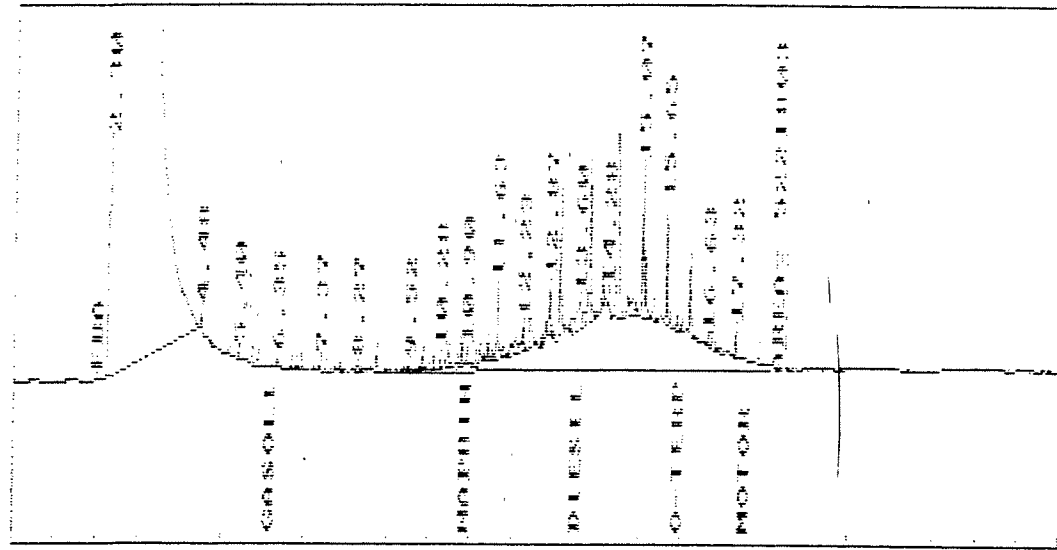
** ** ** ** **
***** EXTERNAL STANDARD TABLE *****
***** 05-29-1996 17:00:31 Version 5.1.5 *****
* Sample Name: DIESEL 200 PPM SU9605039 Data File: L:AE29-6
* Date: 05-29-1996 16:35:23 Method: DIESEL-2 05-29-1996 10:50:55 # 670
* Interface: 2 Cooles#: 6 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
*****
* Instrument Type: 3400 536-01 Column Type: DB5/.25u
* Solvent Description: HE 2ML/MIN
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS:NAPHTHA:DIESEL;O-TERPH 03/04/96
*****
Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

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PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
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002260

11/17/1978 10:11 AM 11/17/1978 10:11 AM
 START TIME= 12:45:00 11/17/1978 10:11 AM
 FILE= 11/17/1978
 Unit of data file= 11/17/1978 10:11 AM
 Date= 11-17-1978 Time= 10:11:00
 Sample Name= 11/17/1978 10:11 AM 11/17/1978
 Start Time= 0.125 sec Time= 10.000 sec Scale= 4.000 sec 11/17/1978

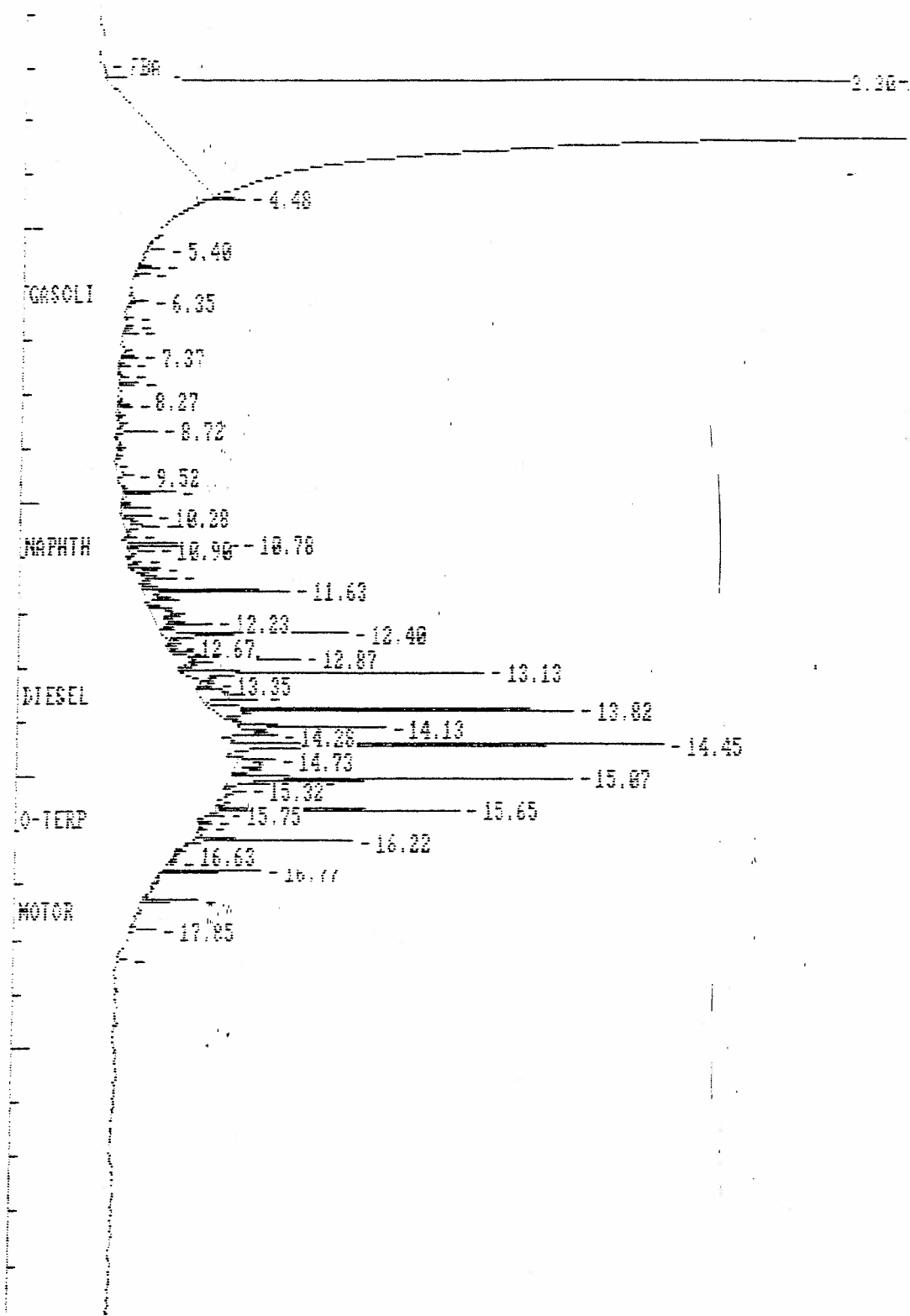


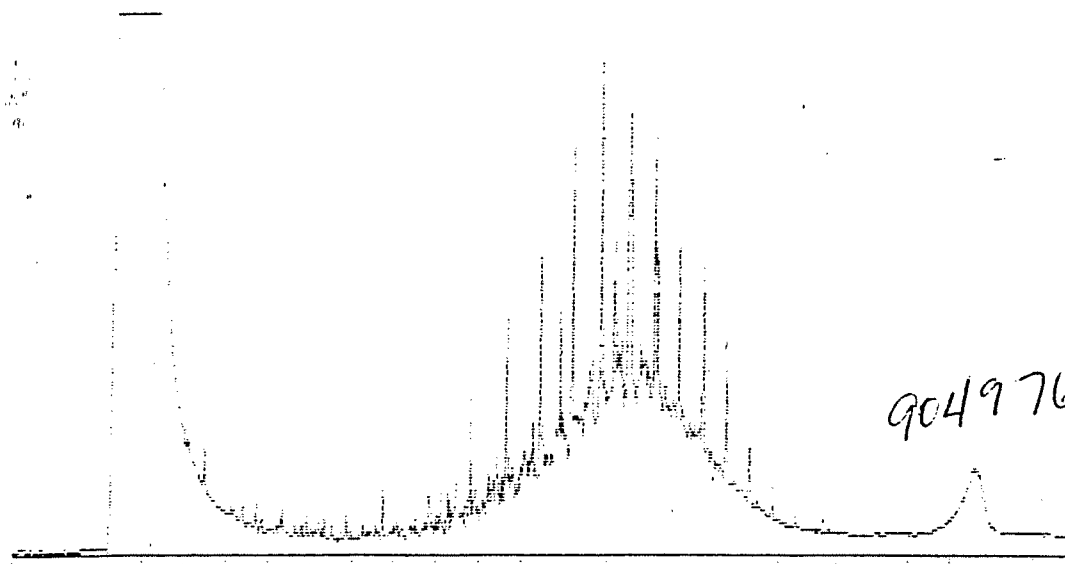
1	2.700	4.08	11.1%	77.265%	47051223	548673	47.7	1	1.0000E-04
2	4.487	0.4115	0.4392%	1124	4477	1.0	1	1.0000E-04	
3	5.400	0.5719	0.6103%	5720	2273	2.5	1	1.0000E-04	
4	5.753	0.5519	0.6156%	1100	2352	2.7	1	1.0000E-04	
5	5.667	0.4336	0.4650%	4356	1542	2.2	1	1.0000E-04	
6	6.550 GASOLINE TO D10	0.3258	0.3475%	3453	7110	1.6	1	1.0000E-04	
7	6.550	0.3063	0.3265%	3024	1036	1.6	1	1.0000E-04	
8	6.596	0.3356	0.3572%	3356	1245	2.6	1	1.0000E-04	
9	6.717	0.4959	0.5283%	4959	2056	2.4	1	1.0000E-04	
10	7.367	0.4875	0.5201%	4875	2175	2.1	1	1.0000E-04	
11	7.517	0.5548	0.5932%	5549	1523	2.3	1	1.0000E-04	
12	7.717	0.2634	0.2804%	2634	1240	2.1	1	1.0000E-04	
13	7.850	0.6160	0.6572%	6160	2472	2.5	1	1.0000E-04	
14	8.367	1.0008	0.1067%	10008	1090	5.3	1	1.0000E-04	
15	8.717	1.2279	0.1304%	12260	5197	2.4	1	1.0000E-04	
16	9.517	1.7147	0.1834%	17147	2194	2.1	1	1.0000E-04	
17	9.853	2.7788	0.2924%	27789	6663	4.2	1	1.0000E-04	
18	10.253	0.6855	0.0733%	6855	5745	2.4	1	1.0000E-04	
19	10.450	2.0297	0.0420%	20297	4289	4.7	1	1.0000E-04	
20	10.650	0.2758	0.0057%	2758	1578	1.7	1	1.0000E-04	
21	10.783 NAPHTHALENE	1.5353	0.0276%	28956	13769	2.1	1	4.5994E-05	
22	10.900	1.0263	0.0212%	10263	3010	3.4	1	1.0000E-04	
23	11.100	0.6794	0.0140%	6794	1693	4.0	1	1.0000E-04	
24	11.217	1.2375	0.0256%	12375	5252	3.8	1	1.0000E-04	
25	11.400	1.9610	0.0405%	19610	4404	4.5	1	1.0000E-04	
26	11.653	6.1861	0.1279%	61861	18360	3.4	1	1.0000E-04	
27	12.153	5.9705	0.1234%	59705	6831	8.7	1	1.0000E-04	
28	12.400	3.7110	0.1387%	37110	23040	2.9	1	1.0000E-04	
29	12.667	0.4864	0.0101%	4864	1336	3.6	1	1.0000E-04	
30	12.767	0.9190	0.0188%	9190	2642	3.2	1	1.0000E-04	
31	12.867	3.9271	0.0212%	39271	13407	2.9	1	1.0000E-04	
32	13.153	8.9055	0.1541%	89055	36820	2.4	1	1.0000E-04	
33	13.550	0.7012	0.0145%	7012	1804	5.9	1	1.0000E-04	
34	13.600 DIESEL D10-D25	3.8255	0.0791%	61346	7513	8.1	1	6.2557E-05	
35	13.817	12.4586	0.2571%	124592	44221	2.8	1	1.0000E-04	
36	14.153	3.8782	0.0802%	38782	17497	2.2	1	1.0000E-04	
37	14.283	0.7261	0.0150%	7261	4676	1.6	1	1.0000E-04	
38	14.450	18.0819	0.3738%	180819	53689	5.4	1	1.0000E-04	
39	14.733	4.1848	0.0865%	41848	4778	8.8	1	1.0000E-04	
40	15.067	13.1982	0.2728%	131982	42463	3.1	1	1.0000E-04	
41	15.317	1.5387	0.0316%	15267	5177	4.8	1	1.0000E-04	
42	15.650	6.9242	0.1451%	69242	30480	2.3	1	1.0000E-04	
43	15.750 O-TERPHENYL	0.2263	0.0047%	4647	2140	2.2	1	4.8696E-05	
44	15.900	0.5854	0.0122%	5884	1817	3.2	1	1.0000E-04	
45	16.000	0.3498	0.0072%	3498	1294	2.7	1	1.0000E-04	
46	16.217	4.2900	0.0287%	42900	20069	2.1	1	1.0000E-04	
47	16.633	0.4091	0.0085%	4091	1256	3.3	1	1.0000E-04	
48	16.767	3.2829	0.0679%	32829	12388	2.7	1	1.0000E-04	
49	17.317 MOTOR OIL	1.8029	0.0373%	18851	7042	2.4	1	1.0699E-04	
50	17.850	0.8634	0.0178%	8634	3412	2.5	1	1.0000E-04	
51	18.400	0.3774	0.0078%	3774	1345	2.8	1	1.0000E-04	

TOTAL AMOUNT = 4637.5015

File = L:AE29-6.FTS Printed on 05-29-1996 at 17:00:33
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts

002262





[Interface 2] 0-25 Min Scale: 100 Mu
 DIESEL 4 Processed: 05-29-1996 17:38:45. segment 4. cycle 7
 RAW DATA SAVED IN FILE L:RE29-7.PTS

***** AREA PERCENT REPORT *****

***** 05-29-1996 17:38:51 Version 5.1.5 *****
 * Sample Name: DIESEL 400 PPM SU#605059 Data File: L:RE29-7
 * Date: 05-29-1996 17:13:42 Method: DIESEL-2
 * Interface: 2 Cycle#: 7 Operator: JP Channel#: 0 Vial#: 4.3
 Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u
 * Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16 25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS:NAPTHA:DIESEL:0-TERPH 03/04/96

 Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	2.500	45709024	94.295530	994129	100.000	46.0	
2	5.133	6738	0.0139	1	1683	0.015	4.0
3	5.753	9492	0.0196	1	4690	0.021	2.0
4	5.867	6743	0.0139	1	2884	0.015	2.3
5	6.350	21405	0.0442	1	4269	0.047	5.0
6	6.650	5306	0.0109	1	1797	0.012	3.0
7	6.800	5254	0.0108	1	1970	0.011	2.7
8	6.917	7806	0.0161	1	3575	0.017	2.3
9	7.050	3810	0.0079	1	1047	0.008	3.6
10	7.367	13091	0.0270	1	4208	0.029	3.1
11	7.517	8350	0.0172	1	2853	0.018	2.9
12	7.717	4050	0.0084	1	1795	0.009	2.3
13	7.850	12436	0.0257	1	4538	0.027	2.7
4	8.267	17626	0.0364	1	3405	0.039	5.2
15	8.567	15196	0.0313	1	2318	0.035	6.6
16	8.717	22891	0.0472	1	9286	0.050	2.5
17	9.067	16072	0.0332	1	2050	0.035	7.8
18	9.193	6610	0.0136	1	2127	0.014	3.1

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19	10.117	11149	0.0530	1	1798	0.024	4.6
20	10.233	22018	0.0454	1	5775	0.048	5.8
21	10.347	34741	0.0717	1	7451	0.076	4.7
22	10.287	106767	0.2203	1	33637	0.234	3.2
23	10.347	6235	0.0130	1	5364	0.014	1.9
24	10.450	98694	0.2036	1	11414	0.216	8.6
25	10.783	118965	0.2454	1	41576	0.260	2.9
26	10.717	8340	0.0172	1	12445	0.018	3.4
27	11.100	15672	0.0323	1	4891	0.034	3.2
28	11.217	70116	0.1446	1	23498	0.153	5.0
29	11.400	156276	0.5224	1	85251	0.542	2.4
30	11.833	11103	0.0229	1	2778	0.024	4.0
31	11.900	17454	0.0360	1	1988	0.038	8.8
32	12.233	30373	0.0627	1	8766	0.066	3.5
33	12.400	209055	0.4292	1	75425	0.455	2.8
34	12.683	2741	0.0057	1	1209	0.006	2.3
35	12.767	65243	0.1346	1	29169	0.143	2.2
36	12.867	37323	0.0770	1	9978	0.082	3.7
37	13.153	384190	0.7926	1	87404	0.841	4.4
38	13.350	220171	0.4542	1	69447	0.482	3.2
39	13.533	30354	0.0626	1	5203	0.066	5.8
40	13.600	119442	0.1670	1	51379	0.285	2.5
41	13.817	9100	0.0188	1	2932	0.020	3.1
42	14.000	5647	0.0116	1	2038	0.012	2.8
43	14.133	6240	0.0129	1	1657	0.014	3.8
44	14.283	70239	0.1449	1	33096	0.154	2.1
45	14.450	4029	0.0085	1	1821	0.009	2.2
46	15.067	6132	0.0127	1	2073	0.013	3.0
47	15.317	47565	0.0981	1	20863	0.104	2.3
48	15.650	6724	0.0139	1	1300	0.015	5.2
49	15.900	27050	0.0558	1	11524	0.059	2.3
50	16.000	13039	0.0269	1	5634	0.029	2.3
51	16.117	5517	0.0114	1	1966	0.012	2.8
52	16.217	575112	0.7738	1	10978	0.821	34.2

Total Area: 48474228 Area Reject: 2000 One sample per 1.000 sec

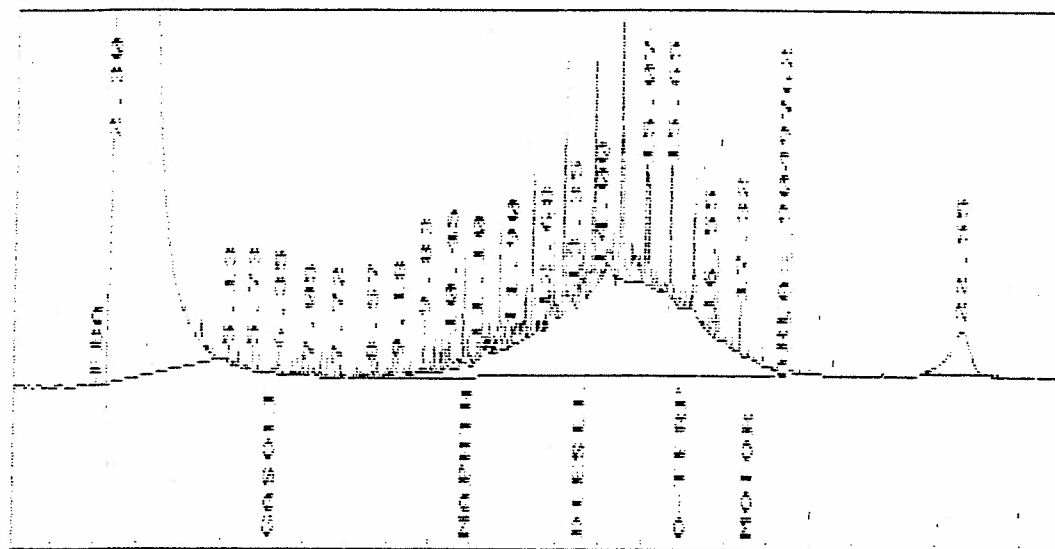
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** ** ** ** **
***** EXTERNAL STANDARD TABLE *****
***** 05-29-1996 17:38:51 Version 5.1.5 *****
* Sample Name: DIESEL 400 PPM SU9605039 Data File: L:AE29-7
* Date: 05-29-1996 17:13:42 Method: DIESEL-2 05-29-1996 10:50:35 # 670
* Interface: 2 Cycle#: 7 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
*****
* Instrument Type: 3400 536-01 Column Type: DB5/.25u
Solvent Description: HE 2ML/MIN
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS:NAPHTHA:DIESEL;0-TERPH 03/04/96
*****

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002265

Start Time= 0.019, or Time = 15.0311, Scale= 11718, Factor= 10.0000



Stepping Delay: 0.00
 Area reject: 2000.
 Amount injected: 1.00
 Sample Weight: 1.0000

Ending Retention Time: 16.217
 One standard deviation: 1.0000
 Pilot hole factor: 1.00

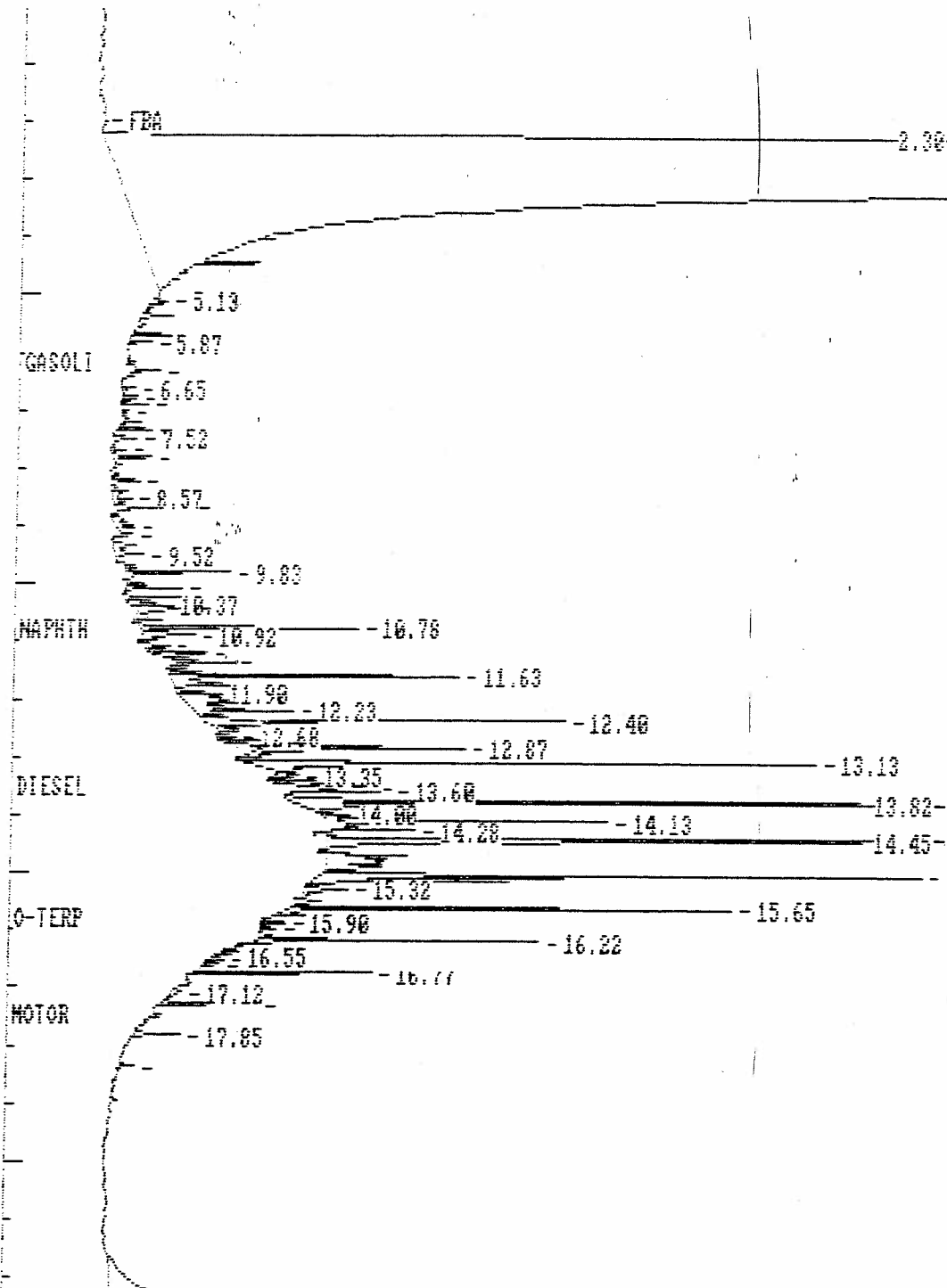
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/g	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	DELTA RET TIME	TOTAL AREA
1	2.300		4520.9023	94.5676%	45709824	994129	46.0 00			1.0000E-04
2	5.133		0.6737	0.0139%	6738	1683	4.0 1			1.0000E-04
3	5.753		0.9492	0.0196%	9492	4690	2.0 1			1.0000E-04
4	5.867		0.6743	0.0139%	6743	2884	2.3 1			1.0000E-04
5	6.350	GASOLINE TO C10	2.3540	0.0465%	21405	4269	5.0 1	0.	2.917	1.0000E-04
6	6.650		0.5306	0.0110%	5306	1797	3.0 1			1.0000E-04
7	6.800		0.5254	0.0108%	5254	1970	2.7 1			1.0000E-04
8	6.917		0.7806	0.0161%	7806	3375	2.3 1			1.0000E-04
9	7.050		0.3510	0.0079%	3510	1047	3.6 1			1.0000E-04
10	7.367		1.3099	0.0270%	13091	4208	3.1 1			1.0000E-04
11	7.517		0.8350	0.0172%	8350	2833	2.9 1			1.0000E-04
12	7.717		0.4049	0.0084%	4050	1895	2.1 1			1.0000E-04
13	7.850		1.2436	0.0257%	12436	4538	2.7 1			1.0000E-04
14	8.267		1.7626	0.0364%	17626	5405	3.2 1			1.0000E-04
15	8.567		1.5196	0.0314%	15196	2318	6.6 1			1.0000E-04
16	8.717		2.2851	0.0473%	22851	8286	2.5 1			1.0000E-04
17	9.067		1.6071	0.0332%	16072	2050	7.8 1			1.0000E-04
18	9.185		0.6610	0.0136%	6610	2127	3.1 1			1.0000E-04
19	9.517		2.8346	0.0585%	28346	5465	8.2 1			1.0000E-04
20	9.853		3.6083	0.0745%	36083	13455	2.9 1			1.0000E-04
21	10.160		1.6761	0.0346%	16761	6630	2.5 1			1.0000E-04
22	10.263		1.4949	0.0309%	14949	6534	2.3 1			1.0000E-04
23	10.367		0.7443	0.0154%	7443	2609	2.9 1			1.0000E-04
24	10.450		3.5498	0.0733%	35498	6573	5.4 1			1.0000E-04
25	10.783	NAPHTHALENE	2.4509	0.0506%	33299	25237	2.1 1	0	0	4.5954E-05
26	10.917		2.8096	0.0580%	28096	6399	4.4 1			1.0000E-04
27	11.100		1.1149	0.0230%	11149	2795	4.0 1			1.0000E-04
28	11.217		2.2018	0.0455%	22018	3775	5.8 1			1.0000E-04
29	11.400		3.4741	0.0717%	34741	7431	4.7 1			1.0000E-04
30	11.633		10.6767	0.2204%	106767	33637	3.2 1			1.0000E-04
31	11.900		0.6283	0.0130%	6283	3364	1.9 1			1.0000E-04
32	12.233		9.8694	0.2038%	98694	11414	8.6 1			1.0000E-04
33	12.400		11.8968	0.2456%	118968	41376	2.9 1			1.0000E-04
34	12.683		0.8340	0.0177%	8340	2445	3.4 1			1.0000E-04
35	12.767		1.5679	0.0324%	15679	4891	3.2 1			1.0000E-04
36	12.867		7.0116	0.1448%	70116	23498	3.0 1			1.0000E-04
37	13.133		15.6276	0.3216%	156276	65251	2.4 1			1.0000E-04
38	13.350		1.1103	0.0229%	11103	2778	4.0 1			1.0000E-04
39	13.533	DIESEL C10-C25	1.0884	0.0225%	17454	1988	8.8 1	0	2.469	6.2357E-05
40	13.680		3.0373	0.0627%	30373	8766	3.5 1			1.0000E-04
41	13.817		20.8035	0.4295%	208035	75425	2.8 1			1.0000E-04
42	14.000		0.2741	0.0057%	2741	1209	2.3 1			1.0000E-04
43	14.133		6.5243	0.1347%	65243	29169	2.2 1			1.0000E-04
44	14.283		3.7323	0.0771%	37323	9978	3.7 1			1.0000E-04
45	14.450		38.4189	0.7932%	384189	87404	4.4 1			1.0000E-04
46	15.067		22.0170	0.4545%	220171	69447	3.2 1			1.0000E-04
47	15.317		3.0353	0.0627%	30354	5203	5.8 1			1.0000E-04
	15.650		12.9442	0.2672%	129442	51379	2.5 1			1.0000E-04
49	15.900	p-TERPHENYL	0.4431	0.0091%	9100	2932	3.1 1	0	2.604	4.8690E-05
50	16.000		0.5647	0.0117%	5647	2038	2.8 1			1.0000E-04
51	16.117		0.6240	0.0129%	6240	1657	3.8 1			1.0000E-04
52	16.217		7.0239	0.1450%	70239	33096	2.1 1			1.0000E-04

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52 16.550	0.4015	0.00831	4105	1821	1.2 1		1.0000E-02
54 16.655	0.6150	0.01074	5172	2075	5.1 1		1.0000E-02
55 16.767	14.7565	0.00821	-3515	20865	2.5 1		1.0000E-02
56 17.117	0.6705	0.01391	5714	1500	5.2 1		1.0000E-02
72 17.517 MOTOR OIL	0.5941	0.01972	27050	11524	1.5 1	0	1.0000E-02
18 17.850	1.3035	0.01691	13059	5654	2.5 1		1.0000E-02
55 18.400	0.5515	0.01142	5517	1904	1.8 1		1.0000E-02
40 21.550	57.5112	0.72441	575112	10978	54.2 1		1.0000E-02

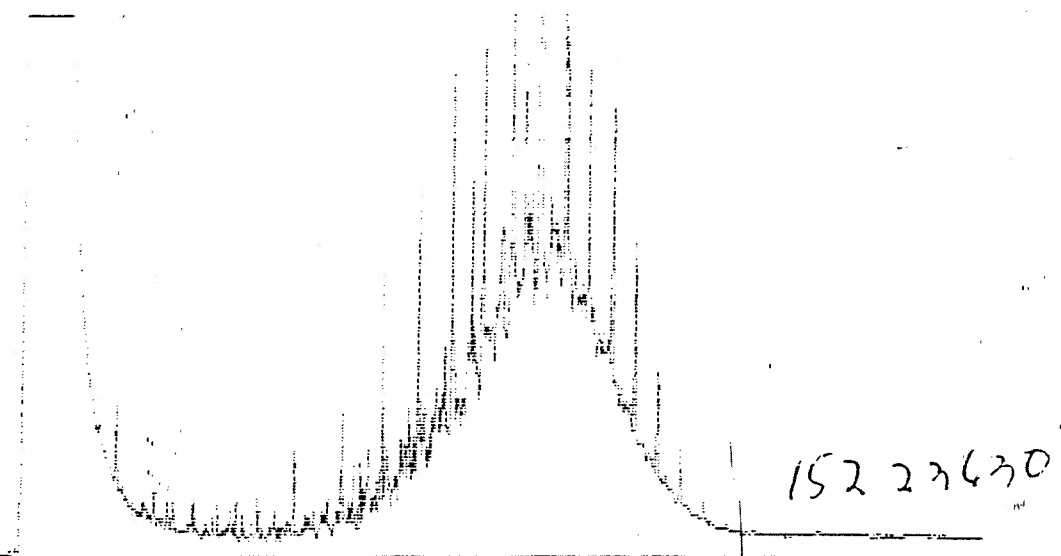
TOTAL AMOUNT = 4843.7227

Data File = L:RE29-7.PTS Printed on 05-29-1996 at 17:58:52
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



002268

22.55



Interface 2] 0-25 Min Scale: 100 Mu
 DIESEL 6 Processed: 05-29-1996 18:17:13, segment 1, cycle 8
 RAW DATA SAVED IN FILE L:AE29-8.PTS

***** AREA PERCENT REPORT *****

***** 05-29-1996 18:17:13 Version 5.1.5 *****
 * Sample Name: DIESEL 600 PPM 909605039 Data File: L:AE29-8
 * Date: 05-29-1996 17:52:10 Method: DIESEL-2
 * Interface: 2 Cycle#: 8 Operator JP Channel#: 0 Ual#: N/A
 Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 3400 536-01 Column Type: DB5/1.25u
 * Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: SAS:NAPTHA:DIESEL:0-TERPH 03/04/96

 Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	2.300	47034340	91.956900	993158	100.000	47.4	
2	4.483	17685	0.0346	1	14143	0.038	1.3
3	5.133	11476	0.0224	1	2999	0.024	3.8
4	5.400	39197	0.0766	1	6821	0.083	5.7
5	5.867	11357	0.0222	1	5114	0.024	2.2
6	6.350	34596	0.0676	1	7352	0.074	4.7
7	6.917	31813	0.0622	1	5640	0.068	5.6
8	7.050	4621	0.0090	1	1426	0.010	3.2
9	7.367	22276	0.0436	1	7200	0.047	3.1
10	7.517	12629	0.0247	1	4381	0.027	2.9
11	7.717	7497	0.0147	1	3474	0.016	2.2
12	7.850	19256	0.0376	1	7428	0.041	2.6
13	7.983	9472	0.0185	1	1697	0.020	5.6
14	8.267	28327	0.0554	1	5514	0.060	5.1
15	8.567	25686	0.0502	1	3755	0.055	6.8
16	8.717	56261	0.0709	1	15526	0.077	2.3
17	8.917	4514	0.0088	1	1157	0.010	3.9
18	9.067	12025	0.0235	1	2727	0.026	4.4

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19	9.517	55581	0.1087	6470	0.113	3.1
20	9.754	5673	0.0011	5318	0.011	2.7
21	9.8731	64575	0.1850	19698	0.179	4.3
22	10.2830	157129	0.0495	10153	0.054	2.7
23	10.367	12349	0.0241	450	0.026	2.9
24	10.450	34510	0.0675	10817	0.073	3.7
25	10.650	3087	0.0158	4639	0.017	1.7
26	10.783	92192	0.1862	42002	0.196	2.7
27	10.917	61137	0.1195	9998	0.130	3.1
28	11.217	34594	0.0676	9123	0.074	3.8
29	11.400	54189	0.1059	11533	0.115	4.7
30	11.633	175238	0.3426	56491	0.373	3.1
31	11.800	10157	0.0199	5579	0.022	1.9
32	12.233	168600	0.3296	18268	0.353	9.2
33	12.400	199768	0.3906	66033	0.425	3.0
34	12.683	14177	0.0277	4044	0.030	3.5
35	12.767	24788	0.0485	8233	0.053	3.0
36	12.867	119286	0.2332	39069	0.254	3.1
37	13.133	264673	0.5175	110828	0.583	2.4
38	13.350	19073	0.0373	4709	0.041	4.1
39	13.533	27602	0.0540	2858	0.059	9.7
40	13.817	359708	0.7033	138366	0.765	2.6
41	14.000	5768	0.0113	2467	0.012	2.3
42	14.133	113233	0.2214	50754	0.241	2.2
43	14.283	64581	0.1263	17119	0.137	3.8
44	14.450	674330	1.3184	147052	1.434	4.6
45	15.067	387142	0.7569	123509	0.823	3.1
46	15.317	62653	0.1225	9583	0.133	6.5
47	15.650	230963	0.4516	91368	0.491	2.5
48	15.900	15710	0.0307	4773	0.033	3.3
49	16.000	23247	0.0454	3915	0.049	5.9
50	16.217	125777	0.2459	58393	0.267	2.2
51	16.550	6377	0.0125	2356	0.014	2.2
52	16.633	9999	0.0195	3496	0.021	2.9
53	16.767	91596	0.1791	36364	0.195	2.5
54	17.100	8935	0.0175	1604	0.019	5.6
55	17.317	47731	0.0933	20124	0.101	2.4
56	17.517	14099	0.0276	2720	0.030	5.2
57	17.850	25564	0.0500	10132	0.054	2.5
58	18.400	11738	0.0229	3958	0.025	3.0
59	18.967	4548	0.0089	1462	0.010	3.1

Total Area: 51148252 Area Reject: 2000 One sample per 1.000 sec

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** ** ** ** **
***** EXTERNAL STANDARD TABLE *****
***** 05-29-1996 18:17:19 Version 5.1.5 *****
* Sample Name: DIESEL 600 PPM SU9605039 Data File: L:AE29-8 *
* Date: 05-29-1996 17:52:10 Method: DIESEL-2 05-29-1996 10:50:35 # 670 *
* Interface: 2 Cycle#: 8 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *
*****
* Instrument Type: 3400 536-01 Column Type: DB5/.25u *
Solvent Description: HE 2ML/MIN *
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
* Detector 0: FID Detector 1: *
* Misc. Information: GAS;NAPTHA;DIESEL;0-TERPH 03/04/96 *
*****

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002271

[illegible]

Starting Date: 11-10-83
 Sample Ref: 2000
 Amount Injected: 1.00
 Sample Weight: 1.0000g

Ending Date: 11-10-83
 Sample per: 1.0000g
 Detector: FID

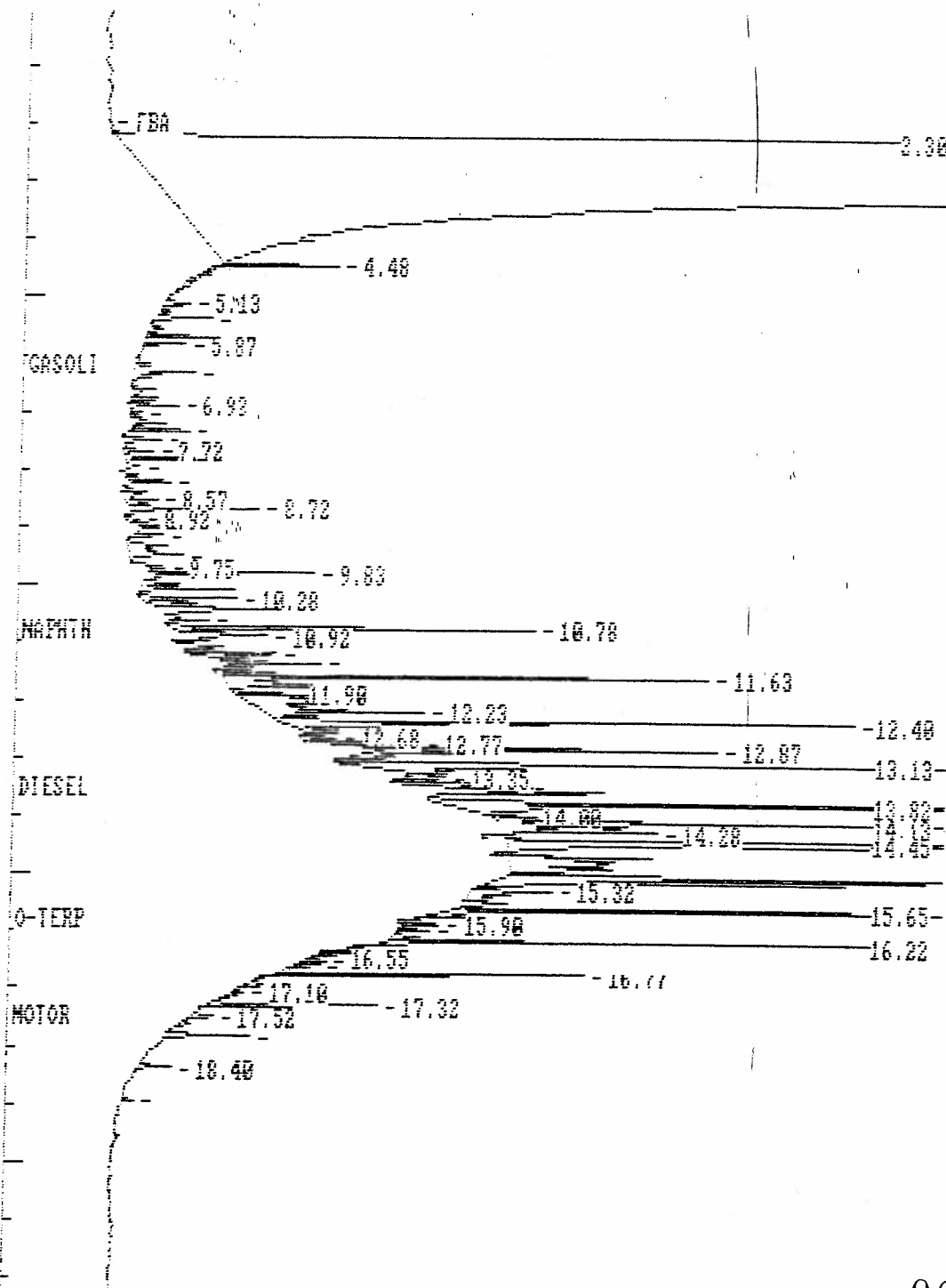
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION mg/kg	NORMALIZED TONG	AREA	HEIGHT	HEIGHT EL	AREA PERK	RET TIME	CONC AREA
1	1.500		4703.4541	0.0747%	47054540	993158	47.4 00			1.0000E-04
2	1.483		1.2685	0.0343%	17635	14143	1.3 1			1.0000E-04
3	5.155		1.1476	0.0225%	11476	2999	3.8 1			1.0000E-04
4	5.400		5.3197	0.0767%	39197	3821	5.7 1			1.0000E-04
5	5.867		1.1557	0.0222%	11357	5114	2.2 1			1.0000E-04
6	6.350	GAZOLINE TO C10	3.6431	0.0713%	34596	7552	4.7 1	0	2.517	1.0730E-04
7	6.917		5.1815	0.0623%	51815	5640	5.6 1			1.0000E-04
8	7.050		0.4621	0.0090%	4621	1426	5.2 1			1.0000E-04
9	7.567		2.1276	0.0436%	12276	7200	5.1 1			1.0000E-04
10	7.517		1.2628	0.0247%	12629	4381	2.9 1			1.0000E-04
11	7.717		0.7497	0.0147%	7497	3474	2.2 1			1.0000E-04
12	7.950		1.5256	0.0377%	19256	7428	2.6 1			1.0000E-04
13	7.983		0.9472	0.0185%	9472	1657	5.6 1			1.0000E-04
14	8.267		2.8527	0.0555%	28527	5514	5.1 1			1.0000E-04
15	8.567		2.5686	0.0505%	25686	5755	6.3 1			1.0000E-04
16	8.717		3.6261	0.0710%	36261	15526	2.3 1			1.0000E-04
17	8.917		0.4514	0.0088%	4514	1157	5.9 1			1.0000E-04
18	9.067		1.2025	0.0235%	12025	2727	4.4 1			1.0000E-04
19	9.183		1.0154	0.0199%	10154	3592	2.8 1			1.0000E-04
20	9.517		5.5581	0.1058%	55581	6470	8.6 1			1.0000E-04
21	9.750		0.5674	0.0111%	5674	2113	2.7 1			1.0000E-04
22	9.855		6.4375	0.1252%	64375	13696	4.5 1			1.0000E-04
23	10.283		2.5529	0.0496%	25529	10832	2.3 1			1.0000E-04
24	10.367		1.2549	0.0242%	12349	4550	2.8 1			1.0000E-04
25	10.450		3.4518	0.0676%	34518	10817	3.2 1			1.0000E-04
26	10.450		0.8087	0.0158%	8087	4639	1.7 1			1.0000E-04
27	10.783	NAPHTHALENE	4.2394	0.0830%	92192	42002	3.2 1	0	0	4.5984E-05
28	10.917		6.1157	0.1197%	61157	9958	6.1 1			1.0000E-04
29	11.217		3.4594	0.0677%	34594	9125	3.8 1			1.0000E-04
30	11.400		5.4189	0.1061%	54189	11583	4.7 1			1.0000E-04
31	11.653		17.5238	0.3450%	175238	56421	3.1 1			1.0000E-04
32	11.900		1.0157	0.0199%	10157	5579	1.8 1			1.0000E-04
33	12.235		16.8599	0.3301%	168600	16268	9.2 1			1.0000E-04
34	12.400		19.9768	0.3911%	199768	66053	3.0 1			1.0000E-04
35	12.683		1.4177	0.0278%	14177	4044	3.5 1			1.0000E-04
36	12.767		2.4788	0.0485%	24788	8235	3.0 1			1.0000E-04
37	12.867		11.9286	0.2335%	119286	39069	5.1 1			1.0000E-04
38	13.135		26.4673	0.5181%	264673	110828	2.4 1			1.0000E-04
39	13.350		1.9073	0.0375%	19073	4709	4.1 1			1.0000E-04
40	13.533	DIESEL C10-C25	1.7212	0.0337%	27602	2838	9.7 1	0	2.469	6.2557E-05
41	13.817		35.9708	0.7042%	359708	138366	2.6 1			1.0000E-04
42	14.000		0.5768	0.0113%	5768	2467	2.5 1			1.0000E-04
43	14.135		11.5232	0.2217%	113233	50754	2.2 1			1.0000E-04
44	14.283		6.4581	0.1264%	64581	17119	3.8 1			1.0000E-04
45	14.450		67.4530	1.3201%	674530	147052	4.6 1			1.0000E-04
46	15.067		38.7142	0.7579%	387142	123509	3.1 1			1.0000E-04
47	15.317		6.2652	0.1226%	62653	9585	6.5 1			1.0000E-04
48	15.650		23.0963	0.4521%	230963	91363	2.5 1			1.0000E-04
49	15.900	O-TERPHENYL	0.7649	0.0150%	15710	4773	5.3 1	0	7.634	4.8650E-05
50	16.000		2.3247	0.0455%	23247	3915	5.9 1			1.0000E-04
51	16.217		12.5777	0.2462%	125777	58593	2.2 1			1.0000E-04
52	16.550		0.6377	0.0125%	6377	2856	2.2 1			1.0000E-04

002273

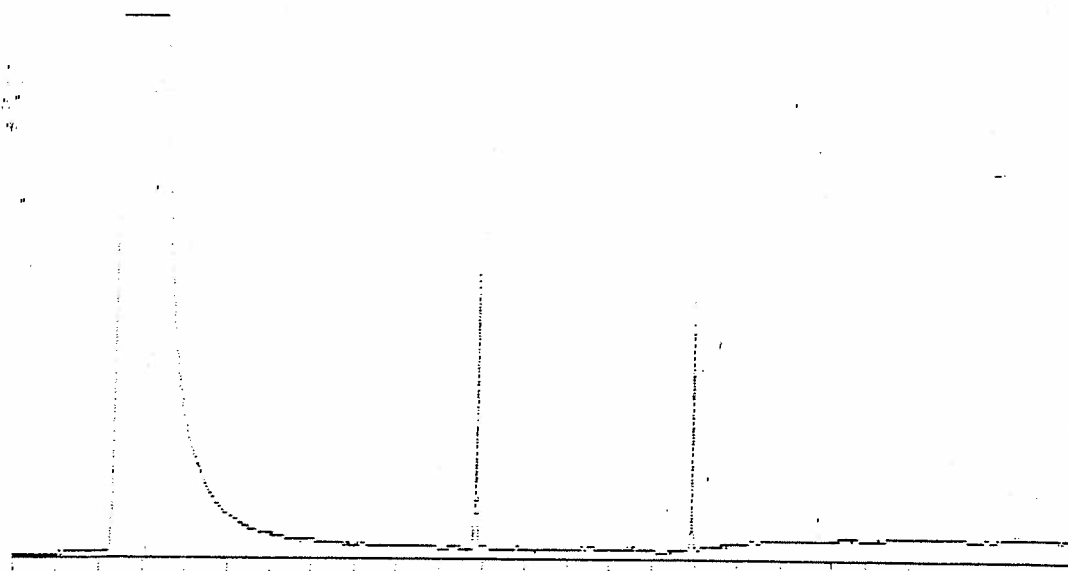
57	16.187	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
58	16.767	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
59	17.160	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	17.517	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
61	17.517 MOTOR 11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	17.850	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
63	18.400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
64	18.967	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TOTAL AMOUNT = 5108.2812

Date File = L:AE29-3.PTS Printed on 05-29-1996 at 18:17:20
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 min.
 Full Range: 100 millivolts



002274



[Interface 2] 0-25 Min Scale: 100 Mv
 ^1RE NAPTH Processed: 05-29-1996 18:55:23, segment 2, cycle 2
 RAW DATA SAVED IN FILE L:AE29-9.PTS

00 00 00 00 00 00 00 00 AREA PERCENT REPORT 00 00 00 00 00 00 00 00

***** 05-29-1996 18:55:29 Version 5.1.5 *****
 * Sample Name: ^1RE NAPTHA;O-TERPHENYL 4PPM SU9605042
 Data File: L:AE29-9
 * Date: 05-29-1996 18:30:20 Method: DIESEL-2
 * Interface: 2 Cycle#: 9 Operator JP Channel#: 0 Vial#: N.A.
 Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u
 * Solvent Description: HE 1ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS:NAPTHA;DIESEL;O-TERPH 05/04/96

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.300	46857720	99.471000	0	994021	100.000	47.1
2	10.833	128236	0.2722	1	51832	0.274	2.5
3	15.917	120949	0.2568	1	45956	0.258	2.6

Total Area: 47106904 Area Reject: 2000 One sample per 1.000 sec.

00 00 00 00 00 EXTERNAL STANDARD TABLE 00 00 00 00 00

***** 05-29-1996 18:55:29 Version 5.1.5 *****
 * Sample Name: ^1RE NAPTHA;O-TERPHENYL 4PPM SU9605042
 Data File: L:AE29-9
 * Date: 05-29-1996 18:30:20 Method: DIESEL-2 05-29-1996 10:50:35 # 670
 * Interface: 2 Cycle#: 9 Operator JP Channel#: 0 Vial#: N.A.
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u

002275

Solvent description: GASOLINE
 Sample name: GASOLINE
 Detector 1: FID
 Detector 2: FID
 Information: GASOLINE-DIESEL-O-TERP
 15.00.96

Starting Retention: 0.00 Ending retention time: 25.00
 Sample weight: 2.00 One sample per 1.00 ml
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

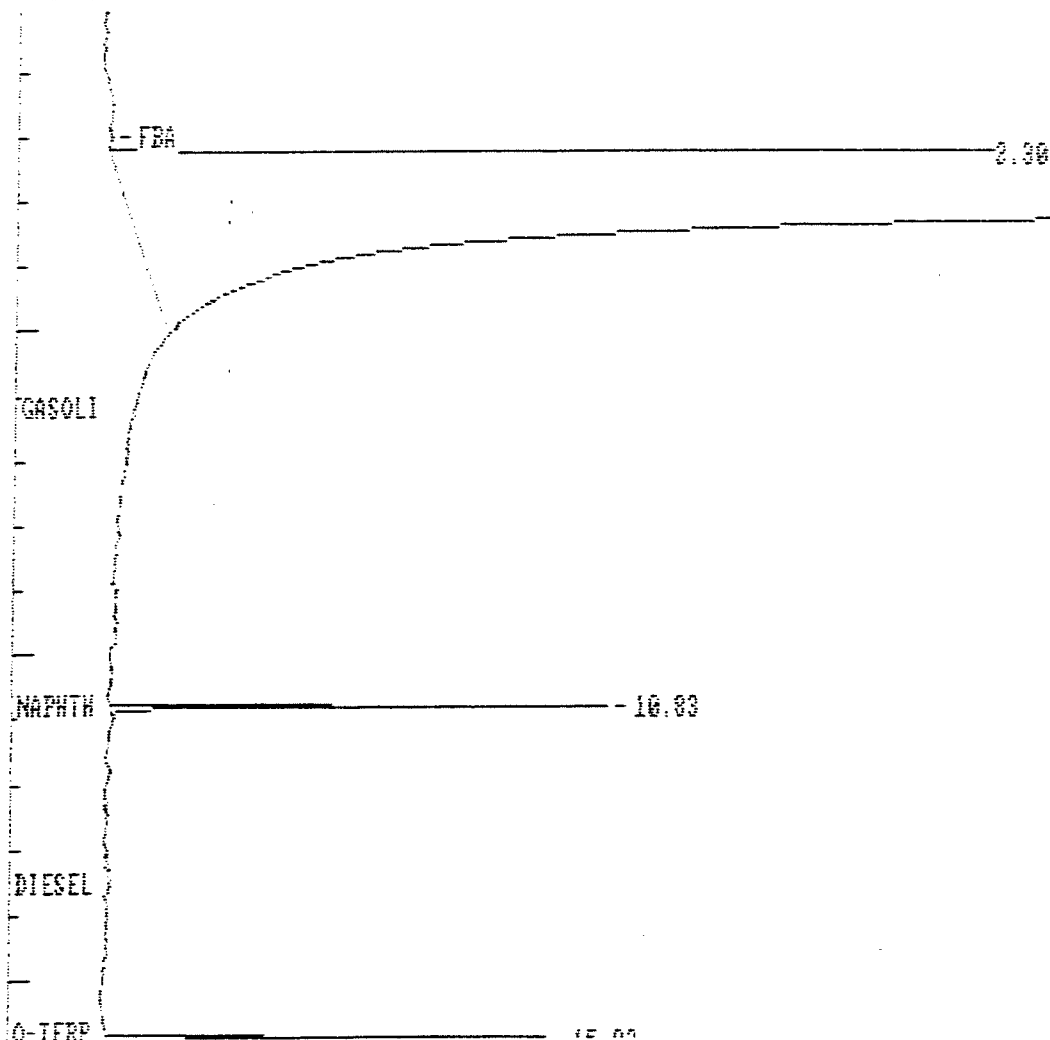
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	0.500		4685.7720	99.74912	46857720	994021	47.1 0V			1.0000E-01
2	10.833	NAPHTHALENE	5.8968	0.12552	128236	51832	2.5 1	0	49.7	4.5924E-05
3	15.917	O-TERPHEYL	5.8390	0.12542	120949	45956	2.6 1	0	66.0	4.6198E-05

TOTAL AMOUNT = 4697.5581

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
DIESEL C10-C25	13.50	DIESEL C10-C25
MOTOR OIL	17.50	O-TERPHEYL

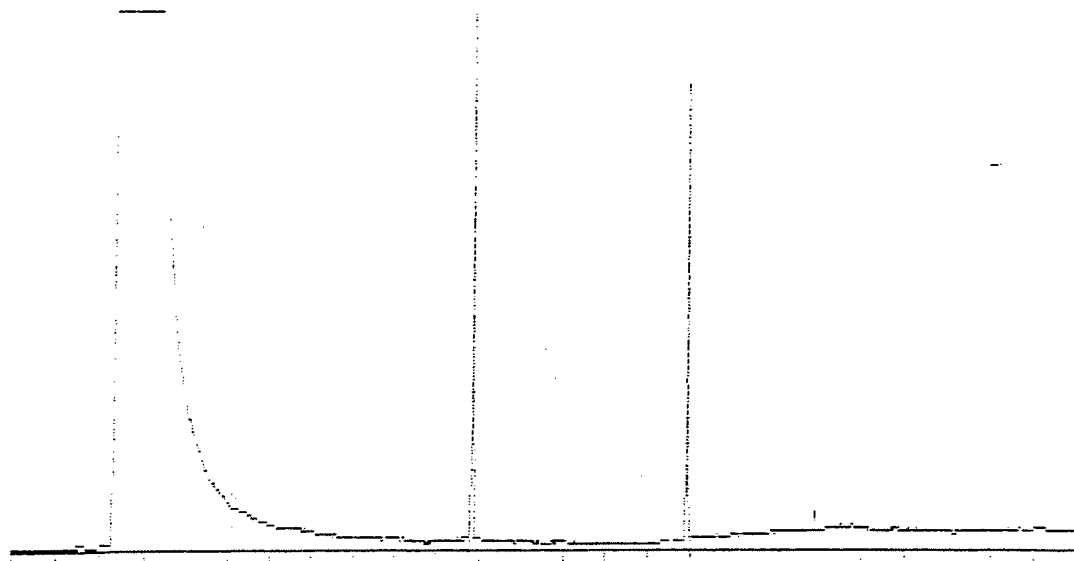
Data File = L:AE29-9.PTS Printed on 05-29-1996 at 13:55:29
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



002276

MOTOR

002277



[Interface 2] 0-25 Min Scale: 100 Mv
 ^2RE NAPTH Processed: 05-29-1996 19:33:40. segment 3, cycle 10
 RAW DATA SAVED IN FILE L:AE29-10.PTS

00 00 00 00 00 00 00 00 AREA PERCENT REPORT 00 00 00 00 00 00 00 00

***** 05-29-1996 19:33:46 Version 5.1.5 *****

* Sample Name: ^2RE NAPTHA:0-TERPHENYL SPPM SU9605042
 Data File: L:AE29-10

* Date: 05-29-1996 19:08:37 Method: DIESEL-2

* Interface: 2 Cycle#: 10 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS:NAPTHA:DIESEL:0-TERPH 03/04/96

 Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.300	48414500	98.878400	0	993481	100.000	48.7
2	10.853	275520	0.5627	1	117084	0.569	2.4
3	15.917	263100	0.5375	1	98685	0.543	2.7
4	19.567	10550	0.0215	1	459	0.022	23.0

Total Area: 48963672 Area Reject: 2000 One sample per 1.000 sec

00 00 00 00 00 00 EXTERNAL STANDARD TABLE 00 00 00 00 00 00 00 00

***** 05-29-1996 19:33:46 Version 5.1.5 *****

* Sample Name: ^2RE NAPTHA:0-TERPHENYL SPPM SU9605042
 Data File: L:AE29-10

* Date: 05-29-1996 19:08:37 Method: DIESEL-2 05-29-1996 18:55:32 # 671

* Interface: 2 Cycle#: 10 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

002278

Sample Name: 100-10-117-117
 Sample Description: 100-10-117-117
 Sample Weight: 4.0000g
 Sample Volume: 1.0000ml
 Sample Concentration: 4.0000g/ml
 Sample Matrix: 100-10-117-117
 Sample Origin: 100-10-117-117
 Sample Date: 05-29-1986
 Sample Time: 19:33:47

Starting Delay: 0.00
 Ingoing Retention Time: 25.00
 Area reject: 2000
 One sample per: 1.00 sec.
 Amount injected: 1.00
 Dilution factor: 1.00
 Sample Weight: 1.00000

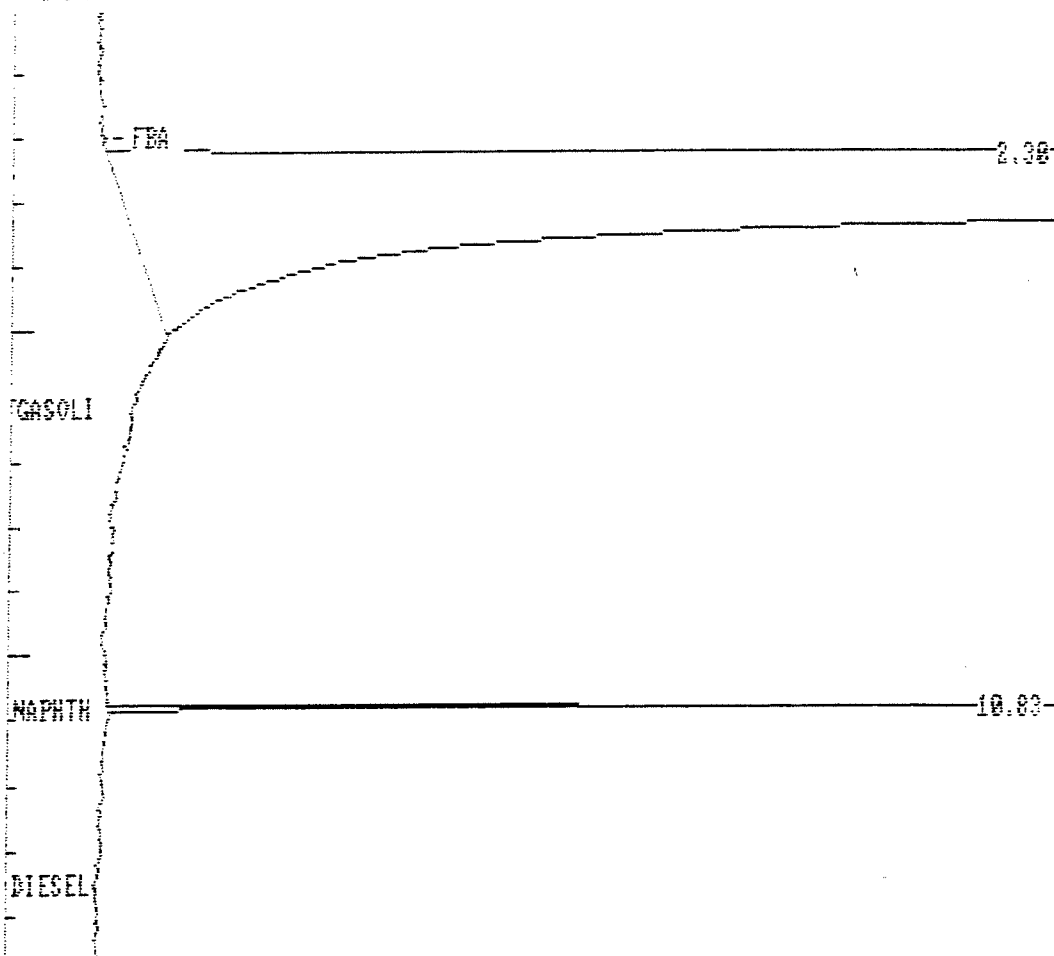
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED COND	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	COND/AREA
1	2.300		4841.4497	99.45952	48414500	999461	48.7 00			1.0000E-04
2	10.655	NAPHTHALENE	12.5491	0.25762	275520	117084	2.4 1	0	0	4.5547E-05
3	15.917	O-TERPHENYL	12.7072	0.24102	243100	98685	2.7 1	0	0	4.8298E-05
4	19.567		1.0550	0.02172	10550	459	23.0 1			1.0000E-04

TOTAL AMOUNT = 4867.7607

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
DIESEL C10-C25	15.50	DIESEL C10-C25
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:9E29-10.PTS Printed on 05-29-1986 at 19:33:47
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0.00
 Full Range: 100 millivolts



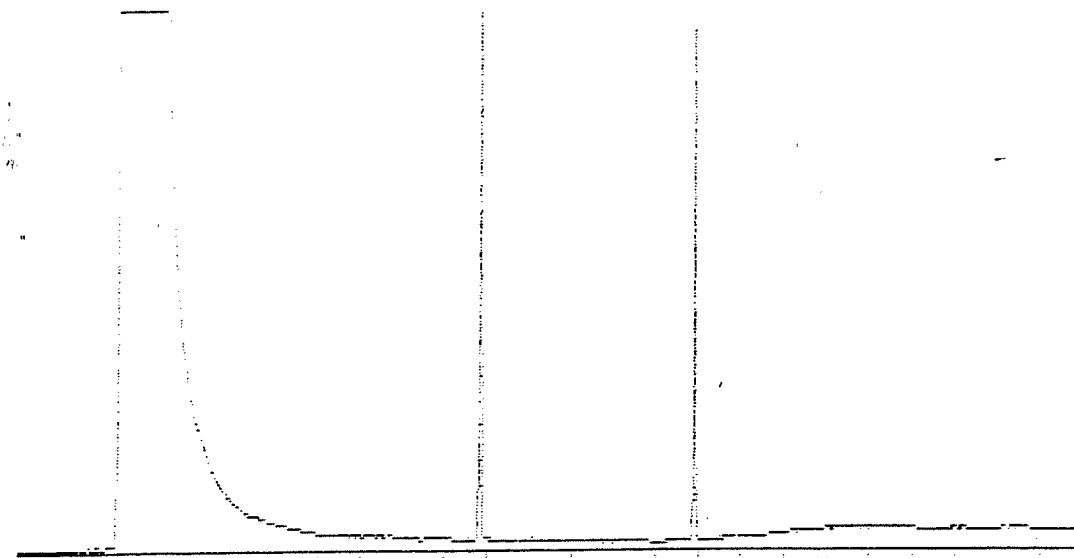
002279

0-TEMP

18.62

MOTOR

-19.57



[Interface 2] 0-25 Min Scale: 100 Mu
 NPRE NAPTH Processed: 05-29-1996 20:11:55, segment 4, cycle 11
 RAW DATA SAVED IN FILE L:AE29-11.PTS

00 00 00 00 00 00 00 00 AREA PERCENT REPORT 00 00 00 00 00 00 00 00

***** 05-29-1996 20:12:00 Version 5.1.5 *****

* Sample Name: NPRE NAPTHA:O-TERPHENYL 12PPM SU9605042

Data File: L:AE29-11

* Date: 05-29-1996 19:46:52 Method: DIESEL-2

* Interface: 2 Cycle#: 11 Operator JP Channel#: 0 Vial#: N.A.

Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 500-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS:NAPTHA:DIESEL:O-TERPH 03/04/96

Starting Delay: 0.00

Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.300	48449784	98.426100	993614		100.000	48.8
2	10.850	397277	0.8071	1 159267		0.820	2.5
3	15.917	377475	0.7668	1 151726		0.779	2.5

Total Area: 49224532 Area Reject: 2000 One sample per 1.000 sec

00 00 00 00 00 EXTERNAL STANDARD TABLE 00 00 00 00 00

***** 05-29-1996 20:12:00 Version 5.1.5 *****

* Sample Name: NPRE NAPTHA:O-TERPHENYL 12PPM SU9605042

Data File: L:AE29-11

* Date: 05-29-1996 19:46:52 Method: DIESEL-2 05-29-1996 19:55:50 # 672

* Interface: 2 Cycle#: 11 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

002281

WILLIS

2072

MOTOR

100

100

100

100

100

100

100

100

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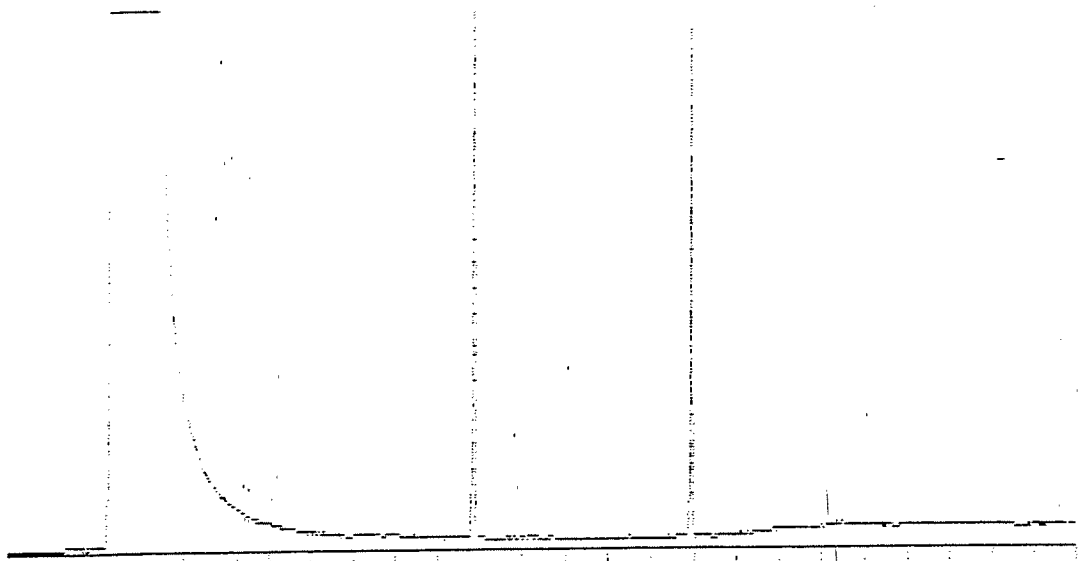
100

100

100

100

002283



[Interface 2] 0-25 Min Scale: 100 Mu
 14RE NAPTH Processed: 05-29-1996 20:50:13, segment 1, cycle 12
 RAW DATA SAVED IN FILE L:AE29-12.PTS

00 00 00 00 00 00 00 00 AREA PERCENT REPORT 00 00 00 00 00 00 00 00

***** 05-29-1996 20:50:18 Version 5.1.5 *****
 * Sample Name: 14RE NAPTHA:O-TERPHENYL 16PPM SU9605042
 Data File: L:AE29-12
 * Date: 05-29-1996 20:25:10 Method: DIESEL-2
 * Interface: 2 Cycle#: 12 Operator JP Channel#: 0 Vial#: N.A.
 Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u
 Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 Detector 0: FID Detector 1:
 * Misc. Information: GAS:NAPTHA:DIESEL:O-TERPH 03/04/96

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.500	48529848	97.863600	994193		100.000	48.6
2	10.850	539452	1.0923	1 236006		1.116	2.3
3	15.917	515596	1.0440	1 209597		1.067	2.5

Total Area: 49384896 Area Reject: 2000 One sample per 1.000 sec

00 00 00 00 00 00 EXTERNAL STANDARD TABLE 00 00 00 00 00 00

***** 05-29-1996 20:50:18 Version 5.1.5 *****
 * Sample Name: 14RE NAPTHA:O-TERPHENYL 16PPM SU9605042
 Data File: L:AE29-12
 * Date: 05-29-1996 20:25:10 Method: DIESEL-2 05-29-1996 20:12:04 # 673
 Interface: 2 Cycle#: 12 Operator JP Channel#: 0 Vial#: N.A.
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u

002284

* Solvent Description: HE (METHYL)
 * Conditions: 40 MIN 140-20 MIN 0 HOLD 300-4 MIN 10 MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS/NAPHTHA:DIESEL:O-TERP 03/04/96

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

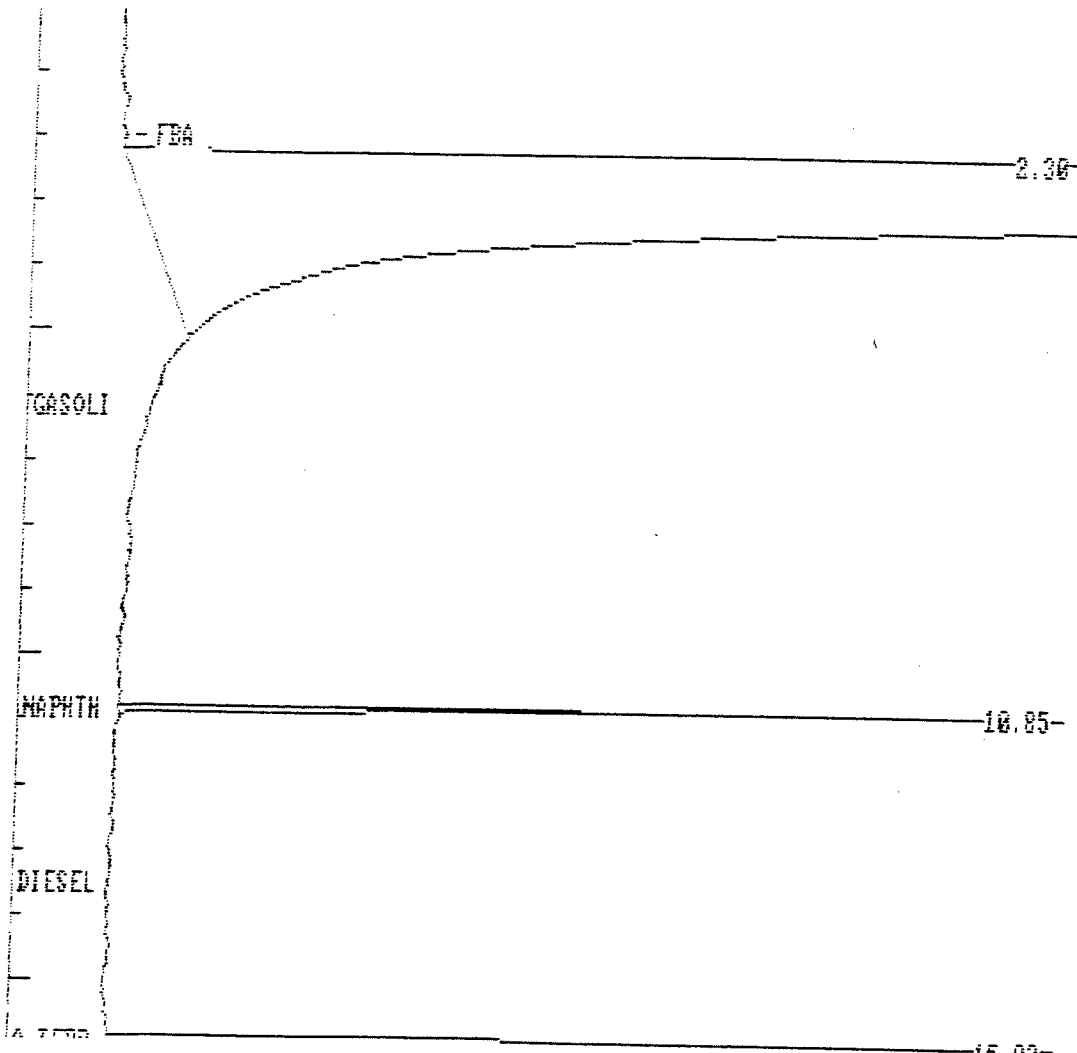
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.500		4832.9849	99.1020%	48329848	994195	48.6 00			1.0000E-04
2	10.850	NAPHTHALENE	21.7506	0.4456%	559452	236006	2.3 1	0	0	4.0263E-05
3	15.517	O-TERPHEYL	22.0649	0.4524%	515596	209597	2.5 1	0	0	4.2705E-05

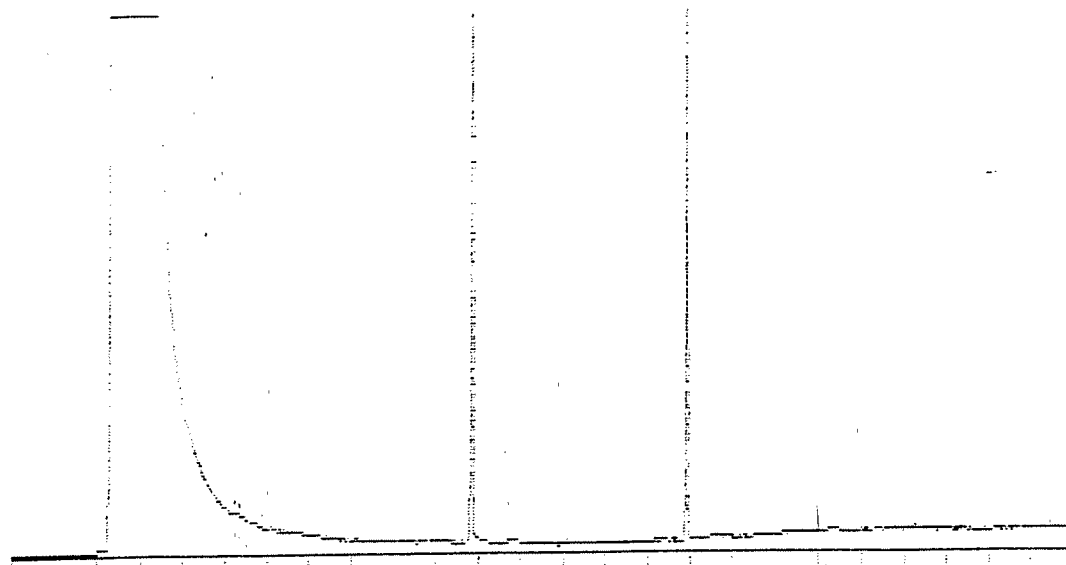
TOTAL AMOUNT = 4876.7803

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
GASOLINE TO C10	6.37	GASOLINE TO C10
DIESEL C10-C25	13.50	DIESEL C10-C25
MOTOR OIL	17.50	O-TERPHEYL

Data File = L:AE29-12.PTS Printed on 05-29-1996 at 20:50:19
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts





[Interface 2] 3-25 Min Scale: 100 Mv
 ^BRE NAPTH Processed: 05-29-1996 21:28:56. segment 2. cycle 15
 RAW DATA SAVED IN FILE L:AE29-15.PTS

00 00 00 00 00 00 00 00 AREA PERCENT REPORT 00 00 00 00 00 00 00 00

***** 05-29-1996 21:28:41 Version 5.1.5 *****

* Sample Name: ^BRE NAPTHA:O-TERPHENYL 20PPM SU9605042

Data File: L:AE29-15

* Date: 05-29-1996 21:03:32 Method: DIESEL-2

* Interface: 2 Cycle#: 15 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 5400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 500-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS:NAPTHA:DIESEL:O-TERPH 03/04/96

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.300	48415520	97.541800		993787	100.000	48.7
2	10.850	626320	1.2619	1	284977	1.294	2.2
3	15.917	589505	1.1875	1	235029	1.217	2.5
4	24.467	4465	0.0090	1	487	0.009	9.2

Total Area: 49653608 Area Reject: 2000 One sample per 1.000 sec

00 00 00 00 00 00 00 00 EXTERNAL STANDARD TABLE 00 00 00 00 00 00 00 00

***** 05-29-1996 21:28:41 Version 5.1.5 *****

* Sample Name: ^BRE NAPTHA:O-TERPHENYL 20PPM SU9605042

Data File: L:AE29-15

* Date: 05-29-1996 21:03:32 Method: DIESEL-2 05-29-1996 20:50:22 # 674

* Interface: 2 Cycle#: 15 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 5A21-1F0-11 Column: 15m DBP-15
 * Solvent Description: RE. COLUMN
 * Conditions: 45 4MIN 140-200MIN 0 40LD 300-67MIN 16.25MIN HOLD
 * Detector 1: FID Detector 2:
 * Misc. Information: GAS:1-NAPTHA:DIESEL:0-TERPH 03/04/96

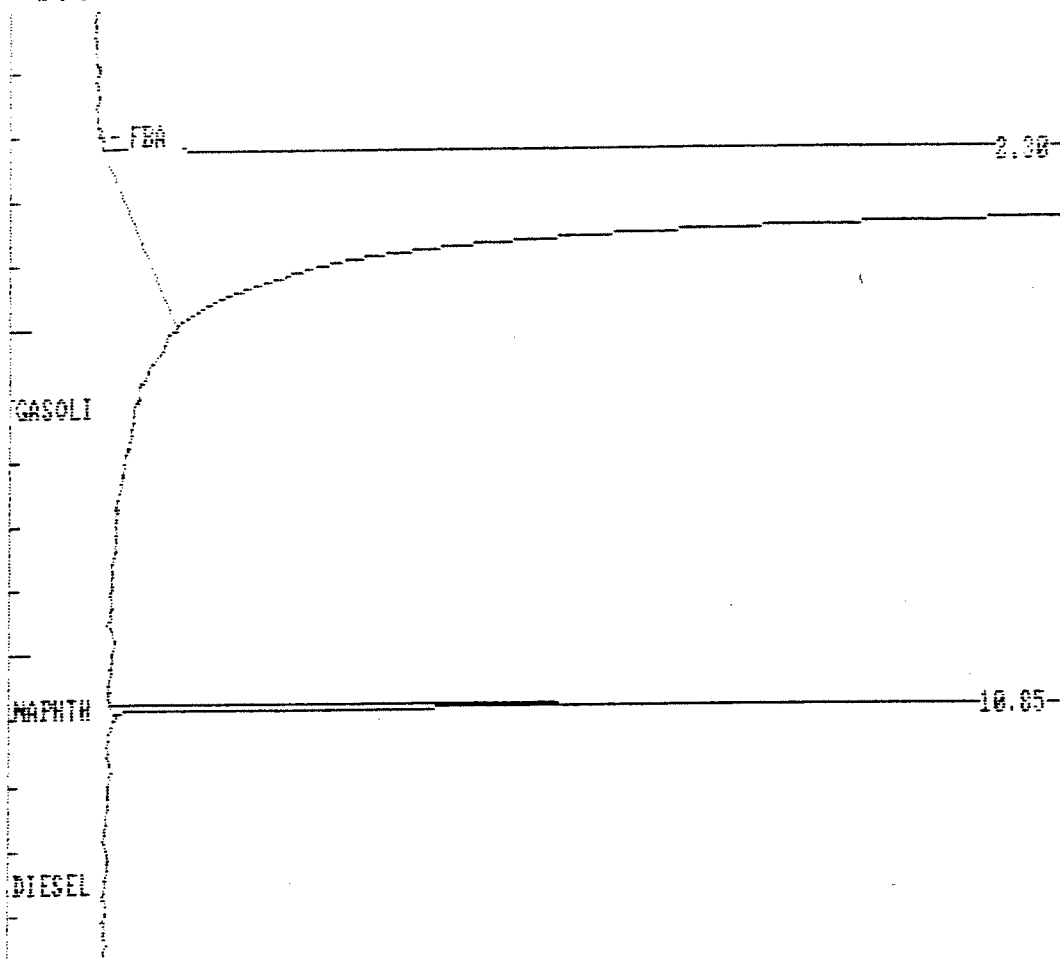
Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.300		4841.5521	99.0659%	48415520	993787	48.7 0V			1.0000E-14
2	10.850	NAPHTHALENE	22.1870	0.4541%	626320	264977	2.2 1	0	0	3.5424E-05
3	15.917	O-TERPHENYL	22.0501	0.4509%	589305	235029	2.5 1	0	0	3.7385E-05
4	24.467		0.4465	0.0091%	4465	487	9.2 1			1.0000E-04

TOTAL AMOUNT = 4886.0156

PEAKS NOT FOUND IN THIS RUN
 NAME ADJUSTED RET.TIME REFERENCE PEAK
 GASOLINE TO C10 6.17 GASOLINE TO C10
 DIESEL C10-C25 13.50 DIESEL C10-C25
 MOTOR OIL 17.50 O-TERPHENYL

Data File = 1:RE29-13.PTS Printed on 05-29-1996 at 21:28:42
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



002287

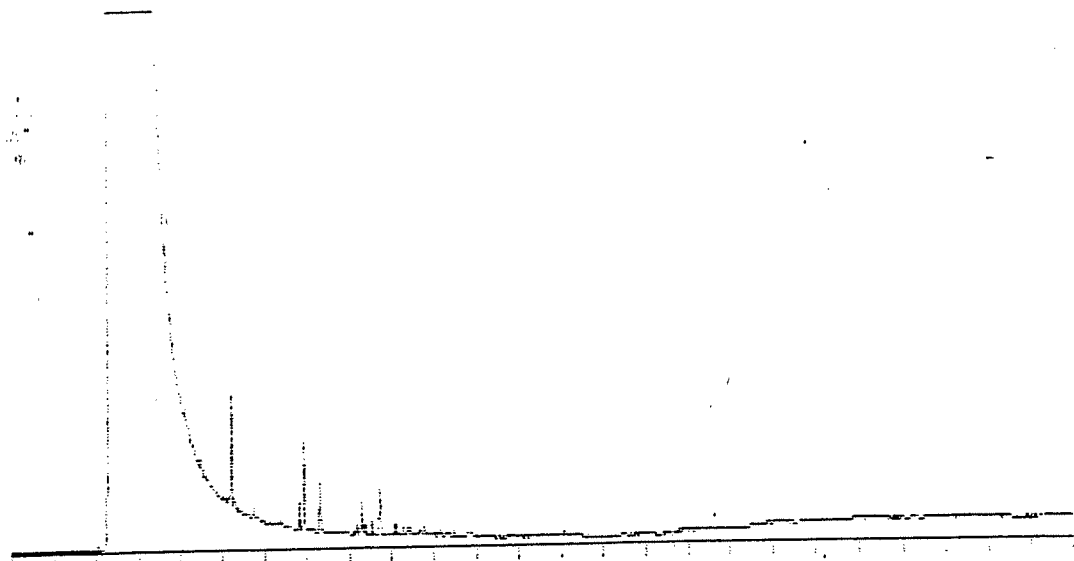
O-TEMP

15.52-

MOTOR

- 24.47

002288



[Interface 2] 0-25 Min Scale: 100 Mu
 GASOLINE Processed: 05-29-1996 22:06:56, segment 3, cycle 14
 RAW DATA SAVED IN FILE L:AE29-14.PTS

00 00 00 00 00 00 00 00 AREA PERCENT REPORT 00 00 00 00 00 00 00 00

***** 05-29-1996 22:07:02 Version 5.1.5 *****
 * Sample Name: GASOLINE 10 PPM SU9605041 Data File: L:AE29-14 *
 * Date: 05-29-1996 21:41:54 Method: DIESEL-2 *
 * Interface: 2 Cycle#: 14 Operator JP Channel#: 0 Dial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: 3400 556-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 0: FID Detector 1: *
 * Misc. Information: GAS:NAPHTHA:DIESEL:0-TERPH 03/04/96 *

 Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	2.300	48597276	99.618400	993759	100.000	48.9	
2	5.200	46575	0.0955	1	20006	0.096	2.3
3	5.753	4013	0.0082	1	1958	0.008	2.0
4	6.800	11507	0.0236	1	5695	0.024	2.0
5	6.917	39585	0.0811	1	17236	0.081	2.3
6	7.300	18190	0.0373	1	8761	0.037	2.1
7	8.283	22299	0.0457	1	5461	0.046	4.1
8	8.533	4229	0.0087	1	2040	0.009	2.1
9	8.700	18682	0.0383	1	8116	0.038	2.3
10	9.083	4691	0.0096	1	2085	0.010	2.3
11	9.250	2893	0.0059	1	1111	0.006	2.6
12	9.450	6074	0.0125	1	1304	0.012	4.7
13	9.767	7435	0.0152	1	1408	0.015	5.3

total Area: 48783444 Area Reject: 2000 One sample per 1.000 sec

002289

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***** 05-29-1996 22:07:02 Version 3.1.1 *****
* Sample Name: GASOLINE TO C10 PPM 59505041 Data File: L:AE29-14.PTS
* Date: 05-29-1996 01:41:54 Method: 312BIL-0 05-19-1996 11:28:46
* Interface: 2 Cycles#: 14 Operator: JF Channel: 0 Units: 0.0
Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
*****
* Instrument Type: 5400 538-01 Column Type: DB5/1250
* Solvent Description: HE 2ML/MIN
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-15.25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS:NAPTHA:DIESEL:O-TERPH 03/04/96
*****

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```

Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

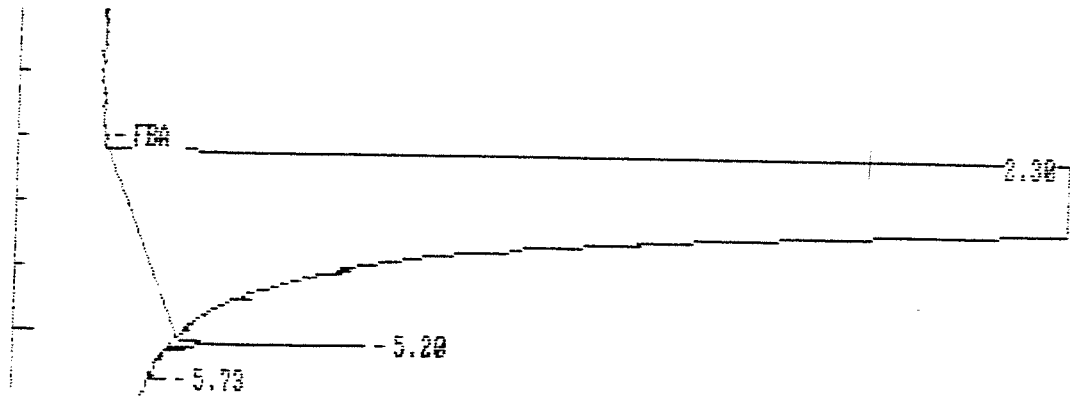
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.300		4859.7275	99.6184%	48597276	993759	48.9 0V			1.0000E-04
2	5.200		4.6575	0.0955%	46575	20006	2.3 1			1.0000E-04
3	5.733		0.4013	0.0082%	4013	1956	2.0 1			1.0000E-04
4	6.680		1.1507	0.0236%	11507	5695	2.0 1			1.0000E-04
5	6.917		3.9585	0.0811%	39585	17236	2.3 1			1.0000E-04
6	7.300		1.8190	0.0373%	18190	8761	2.1 1			1.0000E-04
7	8.385		2.2299	0.0457%	22299	5461	4.1 1			1.0000E-04
8	8.533		0.4229	0.0087%	4229	2040	2.1 1			1.0000E-04
9	8.700		1.8682	0.0383%	18682	8116	2.3 1			1.0000E-04
10	9.055		0.4691	0.0096%	4691	2085	2.3 1			1.0000E-04
	9.250		0.3893	0.0079%	3893	1111	2.6 1			1.0000E-04
12	9.450		0.6074	0.0125%	6074	1304	4.7 1			1.0000E-04
13	9.767		0.7454	0.0152%	7455	1408	5.3 1			1.0000E-04

TOTAL AMOUNT = 4978.3452

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET. TIME	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
NAPHTHALENE	10.85	NAPHTHALENE
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.92	O-TERPHENYL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AE29-14.PTS Printed on 05-29-1996 at 22:07:03
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



GASOL

6.88 6.92
7.38

8.38
8.52

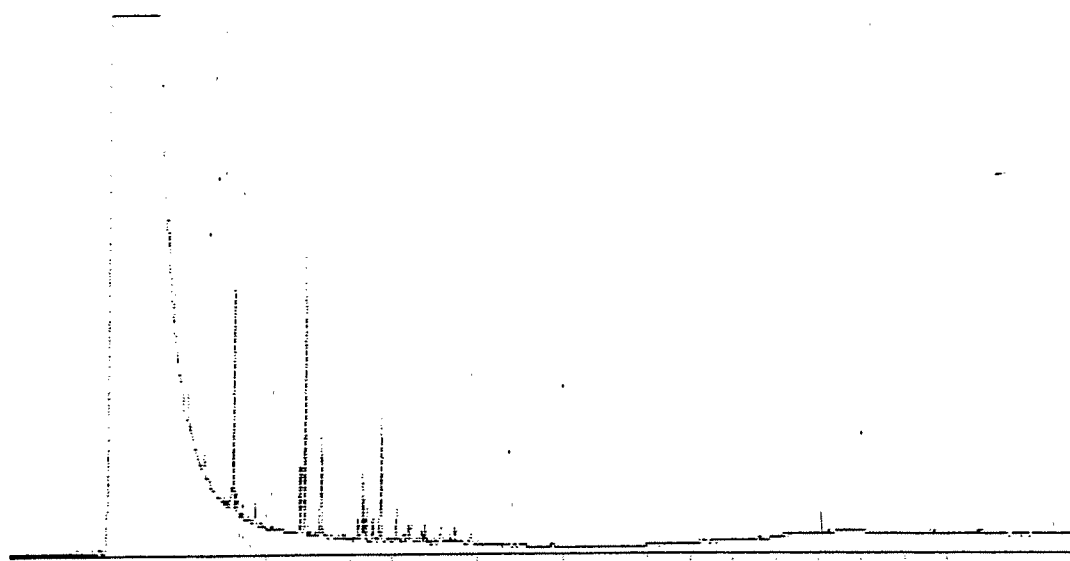
9.45

MPH

DIESEL

4-TEMP

MOTOR



[Interface 2] 0-25 Min Scale: 100 Mo
 GASOLINE Processed: 05-29-1996 22:45:16, segment 4, cycle 15
 RAW DATA SAVED IN FILE L:AE29-15.PTS

00 00 00 00 00 00 00 00 AREA PERCENT REPORT 00 00 00 00 00 00 00 00

***** 05-29-1996 22:45:21 Version 5.1.5 *****
 * Sample Name: GASOLINE 25 PPM SU9605041 Data File: L:AE29-15 *
 * Date: 05-29-1996 22:20:15 Method: DIESEL-2 *
 * Interface: 2 Cycle#: 15 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 Instrument Type: 3400 556-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector G: FID Detector 1: *
 * Misc. Information: GAS:NAPTHA:DIESEL:0-TERPH 03/04/96 *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.300	48028088	98.954000	0	993528	100.000	48.3
2	4.500	6778	0.0140	1	3556	0.014	1.9
3	5.200	119061	0.2453	1	40642	0.248	2.9
4	5.750	10646	0.0219	1	4245	0.022	2.5
5	6.350	6235	0.0128	1	1579	0.013	3.9
6	6.800	29891	0.0616	1	12130	0.062	2.5
7	6.933	100935	0.2080	1	51398	0.210	2.0
8	7.317	43925	0.0905	1	18908	0.091	2.3
9	8.183	6966	0.0144	1	3684	0.015	1.9
10	8.283	46783	0.0964	1	12179	0.097	3.8
11	8.533	11367	0.0234	1	4578	0.024	2.5
12	8.717	46661	0.0961	1	23121	0.097	2.0
13	9.083	12965	0.0267	1	5914	0.027	2.2
14	9.450	15010	0.0309	1	2867	0.031	5.2
15	9.767	15297	0.0315	1	3082	0.032	5.0
16	10.150	9813	0.0202	1	2741	0.020	3.6
17	10.367	3015	0.0062	1	1123	0.006	2.7
18	10.483	7513	0.0155	1	2489	0.016	3.0

38 2587

10 10.800
10 10.700

5700 10.000
9000 10.000

0.000 10.000
0.000 10.000

Total Area: 48555784 Area Reject: 1000 One sample per 1.000

***** INTERNAL STANDARD TABLE *****
***** 05-29-1996 22:45:21 Version 5.1.5 *****
* Sample Name: GASOLINE 25 PPM SU9605041 Data File: L:AE29-15 *
* Date: 05-29-1996 22:20:13 Method: DIESEL-2 05-29-1996 21:26:45 # 605 *
* Interface: 2 Cycle#: 15 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: 5400 536-01 Column Type: DB5/1.25u *
* Solvent Description: HE 2ML/MIN *
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
* Detector 0: FID Detector 1: *
* Misc. Information: GAS:NAPHTHA;DIESEL;O-TERPH 03/04/96 *

Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.500		4802.8086	98.9614%	48028088	995528	48.5 00			1.0000E-04
2	4.500		0.6777	0.0140%	6778	3556	1.9 1			1.0000E-04
3	5.200		11.9061	0.2453%	119061	40642	2.9 1			1.0000E-04
	5.750		1.0646	0.0219%	10646	4245	2.5 1			1.0000E-04
4	6.550	GASOLINE TO C10	0.6565	0.0135%	6255	1579	3.9 1	0	2.917	1.0550E-04
5	6.800		3.9891	0.0616%	29891	12150	2.5 1			1.0000E-04
6	6.955		10.0535	0.2080%	100535	51399	2.0 1			1.0000E-04
7	7.517		4.5925	0.0905%	43925	18908	2.3 1			1.0000E-04
8	8.185		0.6966	0.0144%	6966	3684	1.9 1			1.0000E-04
9	8.285		4.6783	0.0964%	46783	12179	3.9 1			1.0000E-04
10	8.555		1.1566	0.0234%	11567	4578	2.5 1			1.0000E-04
11	8.717		4.6661	0.0961%	46661	25121	2.0 1			1.0000E-04
12	9.085		1.2965	0.0267%	12965	5914	2.2 1			1.0000E-04
13	9.450		1.5009	0.0309%	15010	2867	5.2 1			1.0000E-04
14	9.767		1.5297	0.0315%	15297	3082	5.0 1			1.0000E-04
15	10.150		0.9615	0.0202%	9615	2741	3.6 1			1.0000E-04
16	10.567		0.3015	0.0062%	3015	1125	2.7 1			1.0000E-04
17	10.485		0.7512	0.0155%	7513	2489	3.0 1			1.0000E-04
18	10.850	NAPHTHALENE	0.1773	0.0037%	5771	1534	3.8 1	0	0	3.0724E-05
19	19.750		0.9070	0.0187%	9071	495	18.5 1			1.0000E-04

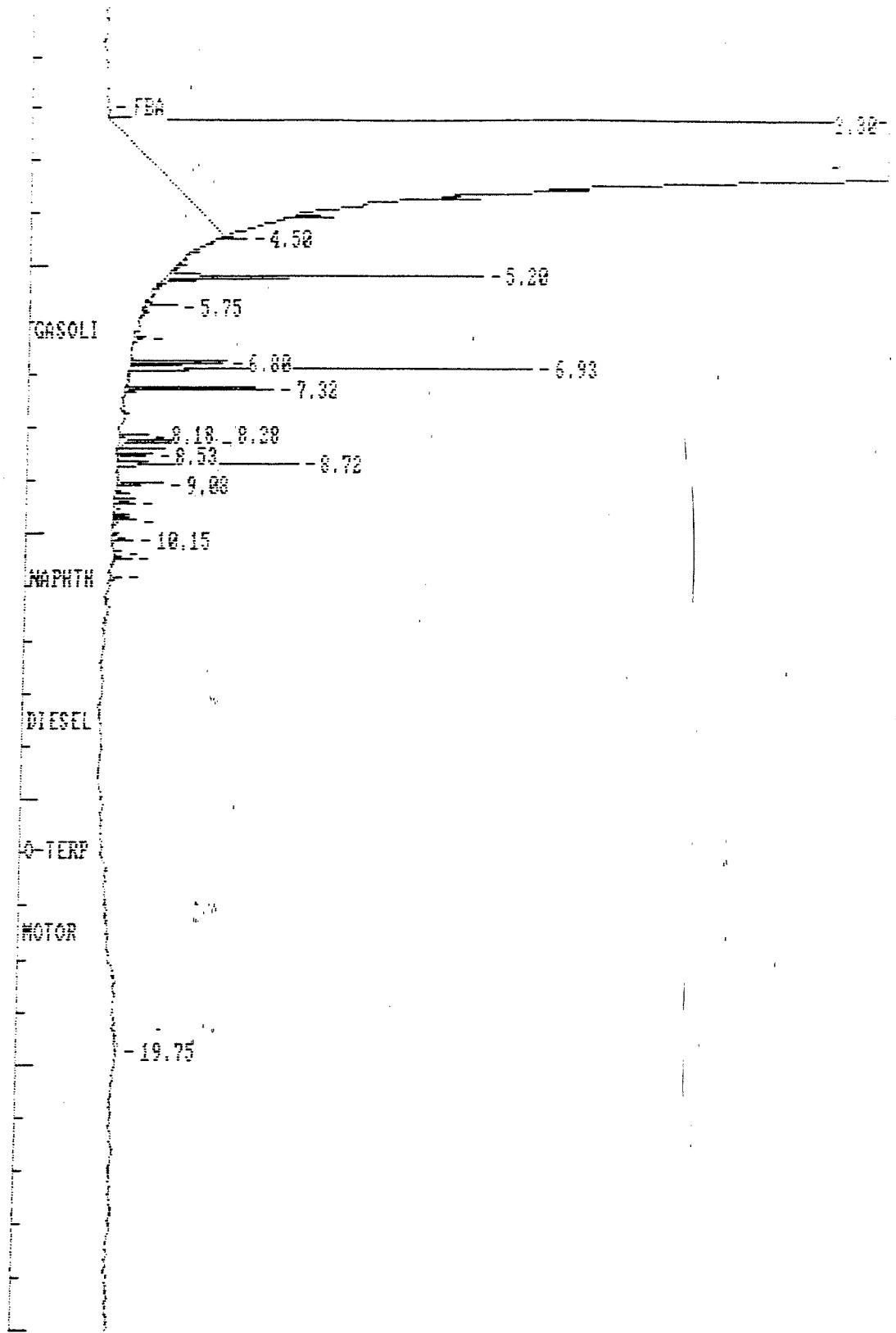
TOTAL AMOUNT = 4855.2124

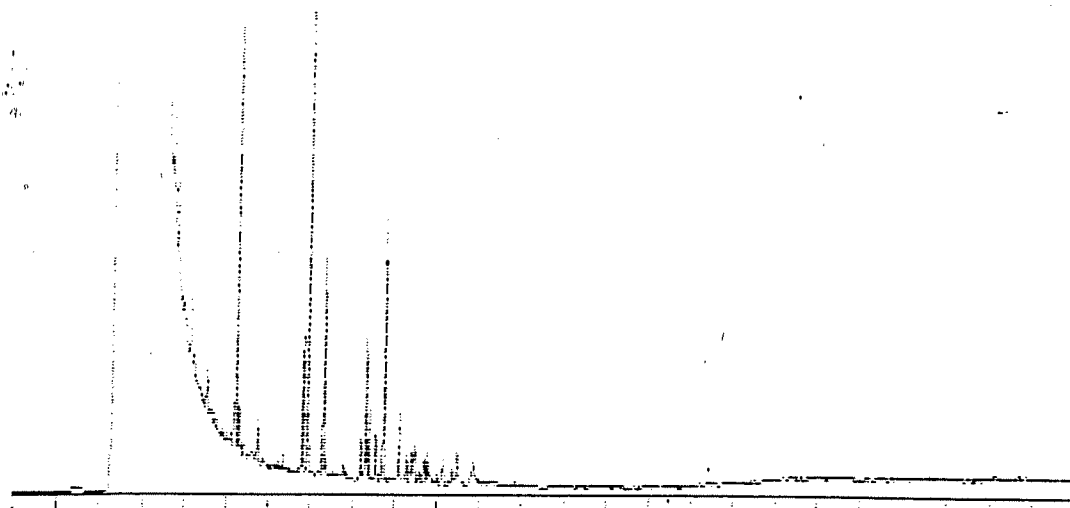
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
DIESEL C10-C25	15.50	DIESEL C10-C25
O-TERPHENYL	15.92	O-TERPHENYL
MOTOR OIL	17.50	O-TERPHENYL

L:ae File = L:AE29-15.PTS Printed on 05-29-1996 at 22:45:22
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mu.
Full Range: 100 millivolts

002293





[Interface 2] 0-25.Min Scale: 100 Mu
 GASOLINE Processed: 05-29-1996 23:23:52, segment 1, cycle 16
 RAW DATA SAVED IN FILE L:AE29-16.PTS

***** AREA PERCENT REPORT *****

***** 05-29-1996 23:23:57 Version 5.1.5 *****

* Sample Name: GASOLINE 50 PPM SUP605041 Data File: L:AE29-16

* Date: 05-29-1996 22:58:49 Method: DIESEL-2

* Interface: 2 Cycle#: 16 Operator JP Channel#: 0 Vial#: 11 A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

Instrument Type: 3400 536-01 Column Type: DB5/.25u

Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS:NAPTHA:DIESEL:0-TERPH 03/04/96

Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	2.300	45168816	97.259300	990589		100.000	45.6
2	3.633	50495	0.1093	1	17931	0.112	2.8
3	4.500	22111	0.0479	1	7295	0.049	3.0
4	5.000	9474	0.0205	1	2852	0.021	3.3
5	5.217	174765	0.3782	1	76858	0.387	2.3
6	5.417	8556	0.0185	1	2710	0.019	3.2
7	5.750	18573	0.0398	1	8032	0.041	2.3
8	5.883	5041	0.0109	1	1353	0.011	3.7
10	6.350	7319	0.0169	1	2513	0.017	3.1
11	6.817	58246	0.1261	1	24674	0.129	2.4
12	6.933	198477	0.4296	1	101287	0.439	2.0
13	7.317	38147	0.1908	1	40861	0.195	2.2
14	7.783	9221	0.0200	1	1978	0.020	4.7
15	8.183	14642	0.0317	1	6938	0.032	2.1
16	8.300	90275	0.1954	1	25056	0.200	3.6
17	8.550	19130	0.0414	1	8685	0.042	2.2
18	8.717	91702	0.1985	1	47589	0.203	1.9
19	9.083	26181	0.0567	1	12071	0.058	2.2

774770

1	2.306	4516.5815	97.7974%	45168816	990589	45.6	0V
2	3.633	5.0492	0.1093%	50493	17931	2.8	1
3	4.500	2.2111	0.0479%	22111	7295	3.0	1
4	5.000	0.9474	0.0205%	9474	2852	3.3	1
5	5.217	17.4765	0.3784%	174765	76858	2.5	1
6	5.417	0.8556	0.0185%	8556	2710	3.2	1
7	5.750	1.6372	0.0396%	16373	8032	2.3	1
8	5.885	0.5041	0.0109%	5041	1355	3.7	1
10	6.550	0.6234	0.0178%	7819	2513	3.1	1
11	6.817	5.8245	0.1261%	58246	24674	2.4	1
12	6.935	19.8477	0.4297%	198477	101287	2.0	1
13	7.317	8.8147	0.1909%	86147	40861	2.2	1
14	7.785	0.9221	0.0200%	9221	1978	4.7	1
15	8.185	1.4642	0.0517%	14642	6938	2.1	1
16	8.300	9.0275	0.1955%	90275	25056	3.6	1
17	9.550	1.9130	0.0414%	19130	8683	2.2	1
18	8.717	9.1702	0.1985%	91702	47589	1.9	1
19	9.085	2.6180	0.0567%	26181	12071	2.2	1
20	9.267	1.0164	0.0220%	10164	4368	2.5	1
	9.385	1.1013	0.0238%	11014	4420	2.5	1
	9.467	1.2865	0.0279%	12865	5559	2.3	1
23	9.585	0.3622	0.0083%	3622	1902	2.0	1
24	9.767	3.0759	0.0666%	30760	5690	5.4	1

Total Area: 46204104 Area Reject: 2000 One sample per 1.000 sec

EXTERNAL STANDARD TABLE

***** 05-29-1996 23:23:57 Version 5.1.5 *****
 * Sample Name: GASOLINE... 50 PPM SU9605041 Data File: L:\AE29-13
 * Date: 05-29-1996 22:58:49 Method: DIESEL-2 05-29-1996 21:28:45 # 275
 * Interface: 2 Cycle#: 16 Operator JF Channel#: 0 Vial#: N.A.
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
 * Instrument Type: 5400 536-01 Column Type: DB5/.25u
 * Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS:NAPHTHA:DIESEL:0-TERPH 05/04/96

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION(%) mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.306		4516.5815	97.7974%	45168816	990589	45.6	0V		1.0000E-04
2	3.633		5.0492	0.1093%	50493	17931	2.8	1		1.0000E-04
3	4.500		2.2111	0.0479%	22111	7295	3.0	1		1.0000E-04
4	5.000		0.9474	0.0205%	9474	2852	3.3	1		1.0000E-04
5	5.217		17.4765	0.3784%	174765	76858	2.5	1		1.0000E-04
6	5.417		0.8556	0.0185%	8556	2710	3.2	1		1.0000E-04
7	5.750		1.6372	0.0396%	16373	8032	2.3	1		1.0000E-04
8	5.885		0.5041	0.0109%	5041	1355	3.7	1		1.0000E-04
10	6.550	GASOLINE TO C10	0.6234	0.0178%	7819	2513	3.1	1	2.917	1.0530E-04
11	6.817		5.8245	0.1261%	58246	24674	2.4	1		1.0000E-04
12	6.935		19.8477	0.4297%	198477	101287	2.0	1		1.0000E-04
13	7.317		8.8147	0.1909%	86147	40861	2.2	1		1.0000E-04
14	7.785		0.9221	0.0200%	9221	1978	4.7	1		1.0000E-04
15	8.185		1.4642	0.0517%	14642	6938	2.1	1		1.0000E-04
16	8.300		9.0275	0.1955%	90275	25056	3.6	1		1.0000E-04
17	9.550		1.9130	0.0414%	19130	8683	2.2	1		1.0000E-04
18	8.717		9.1702	0.1985%	91702	47589	1.9	1		1.0000E-04
19	9.085		2.6180	0.0567%	26181	12071	2.2	1		1.0000E-04
20	9.267		1.0164	0.0220%	10164	4368	2.5	1		1.0000E-04
	9.385		1.1013	0.0238%	11014	4420	2.5	1		1.0000E-04
	9.467		1.2865	0.0279%	12865	5559	2.3	1		1.0000E-04
23	9.585		0.3622	0.0083%	3622	1902	2.0	1		1.0000E-04
24	9.767		3.0759	0.0666%	30760	5690	5.4	1		1.0000E-04

002296

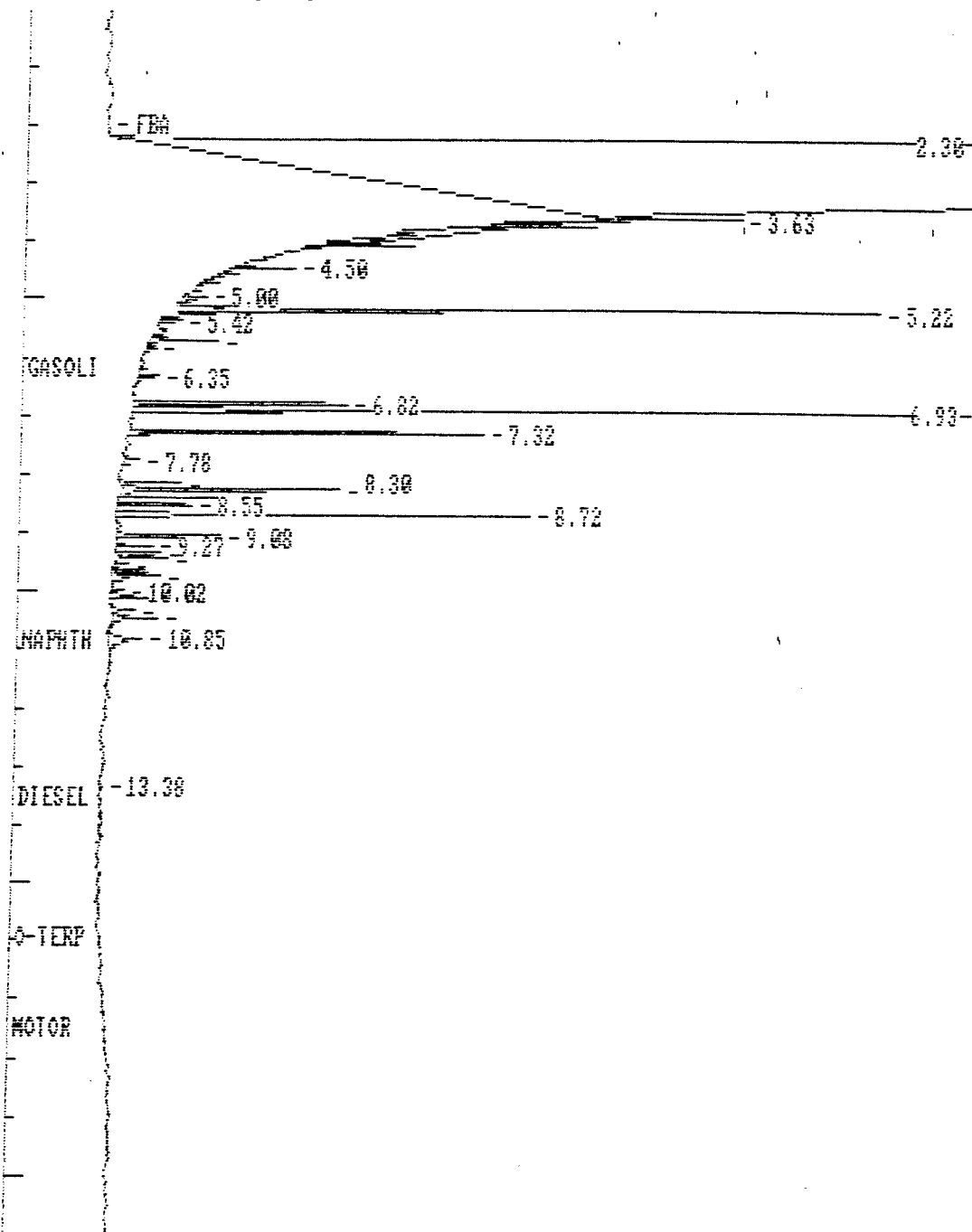
27	10.117	0.1674	0.00562	1274	1574	1.7			1.0018-04
28	10.130	0.1787	0.00562	1774	3154	5.7			1.0000-04
27	10.367	0.7031	0.01352	7031	2737	2.3			1.0105-04
28	10.463	1.3397	0.04051	13397	7533	7.5			1.0702-04
29	10.850 NAPHTHALENE	0.7229	0.01622	2530	4067	1.2			5.1704-05
0	13.565 DIESEL-010-005	0.1190	0.00322	1390	422	5.7	0		6.1751-05

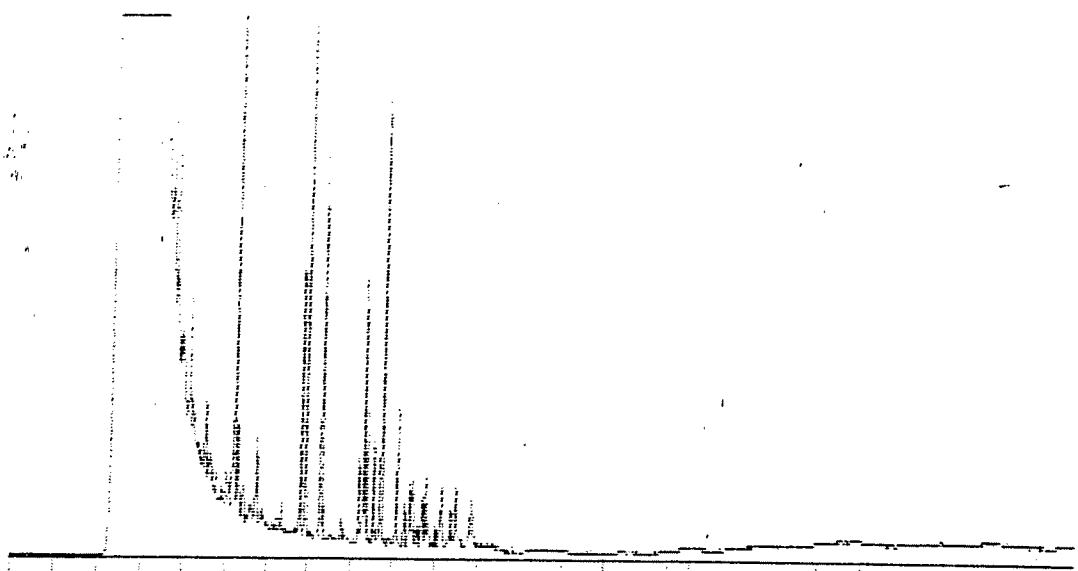
TOTAL AMOUNT = 4618.6094

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
O-TERPHENYL	15.92	O-TERPHENYL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AE29-16.PTS Printed on 05-29-1996 at 23:25:58
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts





[Interface 2] 0-25 Min Scale: 100 Mv
 GASOLINE Processed: 05-30-1996 00:02:13, segment 1, cycle 17
 RAW DATA SAVED IN FILE L:AE29-17.PTS

***** AREA PERCENT REPORT *****

***** 05-30-1996 00:02:19 Version 5.1.5 *****
 * Sample Name: GASOLINE 100 PPM SU9605041 Data File: L:AE29-17
 * Date: 05-29-1996 23:37:11 Method: DIESEL-2
 * Interface: 2 Cycle#: 17 Operator JP Channel#: 0 U'slt#: N.F.
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 Instrument Type: 5400 556-01 Column Type: DB5/.25u
 Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS:NAPTHA:DIESEL:0-TERPH 05/04/96

 Starting Delay: 0.00 Run Time: 25.00

PK No	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	2.300	45035636	95.133000	1	990707	100.000	45.5
2	3.633	136964	0.2893	1	43596	0.304	3.1
3	3.900	47697	0.1008	1	9267	0.106	5.1
4	4.100	65054	0.1374	1	24449	0.144	2.7
5	4.500	58783	0.1242	1	15423	0.131	3.8
6	4.900	6528	0.0138	1	2673	0.014	2.4
7	5.000	17905	0.0378	1	5528	0.040	3.2
8	5.217	352920	0.7455	1	155425	0.784	2.3
9	5.417	30744	0.0649	1	5465	0.068	5.6
10	5.750	36284	0.0766	1	15429	0.081	2.4
11	5.883	15632	0.0330	1	2787	0.035	5.6
12	6.133	3744	0.0079	1	1232	0.008	3.0
13	6.233	4023	0.0085	1	2144	0.009	1.9
14	6.350	13972	0.0295	1	4874	0.031	2.9
15	6.800	117367	0.2479	1	49631	0.261	2.4
16	6.953	400029	0.8450	1	202993	0.888	2.0
17	7.233	6125	0.0129	1	1036	0.014	5.9
18	7.317	173961	0.3675	1	75687	0.386	2.3

1748261

22	8.136	14734	0.0115	1	1088	0.012	5.1
23	8.203	150717	0.0609	1	17135	0.086	2.0
24	8.573	53106	0.0638	1	17135	0.086	2.0
25	8.717	28388	0.0384	1	93403	0.416	2.0
26	8.853	5412	0.0115	1	1088	0.012	5.1
27	9.063	52029	0.0059	1	24835	0.116	2.0
28	9.237	17907	0.0378	1	7979	0.040	2.0
29	9.450	64636	0.0365	1	11855	0.144	5.1
30	9.593	7170	0.0151	1	3521	0.016	2.0
31	9.767	64477	0.0362	1	12715	0.145	5.1
32	10.017	6479	0.0137	1	3351	0.014	1.9
33	10.150	56862	0.0779	1	10993	0.082	3.4
34	10.483	69402	0.1466	1	11802	0.154	5.9
35	10.856	40469	0.0555	1	8565	0.090	4.7
36	11.835	3650	0.0077	1	1250	0.008	2.9

Total Area: 47539686 Area Reject: 2000 One sample per 1.000 sec

```

***** EXTERNAL STANDARD TABLE *****
***** 05-30-1996 00:02:19 Version 5.1.5 *****
* Sample Name: GASOLINE 100 PPM SU9605041 Data File: L:AE29-17
* Date: 05-29-1996 23:37:11 Method: DIESEL-2 05-29-1996 21:23:45 # 675
* Interface: 2 Cycle#: 17 Operator JP Channel#: 0 Vial#: H.A.
* Starting Peak Width: 40 Threshold: 10 Area Threshold: 1000
*****
* Instrument Type: 3400 536-01 Column Type: DB5/ 25u
* Solvent Description: HE 2ML/MIN
* Conditions: 45.4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS:NAPTHA:DIESEL:0-TERPH 03/04/96
*****
Starting Delay: 0.00 min Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	% CONC/AREA
1	2.500		4503.5635	95.1890%	45035636	990707	45.5 0V			1.0000E-04
2	3.633		13.6964	0.2895%	136964	43596	3.1 1			1.0000E-04
3	3.900		4.7697	0.1008%	47697	9267	5.1 1			1.0000E-04
4	4.100		6.5054	0.1375%	65054	24449	2.7 1			1.0000E-04
5	4.500		5.8783	0.1242%	58783	15423	3.8 1			1.0000E-04
6	4.900		0.6528	0.0138%	6528	2673	2.4 1			1.0000E-04
7	5.000		1.7905	0.0378%	17905	5528	3.2 1			1.0000E-04
8	5.217		35.2920	0.7459%	352920	135425	2.3 1			1.0000E-04
9	5.417		3.0744	0.0650%	30744	5463	5.6 1			1.0000E-04
10	5.750		3.6284	0.0767%	36284	15429	2.4 1			1.0000E-04
11	5.883		1.5632	0.0330%	15632	2787	5.6 1			1.0000E-04
12	6.133	GASOLINE TO C10	0.3945	0.0083%	3744	1232	3.0 1	0	-5.942	1.0530E-04
13	6.233		0.4022	0.0085%	4023	2144	1.9 1			1.0000E-04
14	6.350		1.3972	0.0295%	13972	4874	2.9 1			1.0000E-04
	6.800		11.7366	0.2481%	117367	49631	2.4 1			1.0000E-04
16	6.933		40.0029	0.8455%	400029	202993	2.0 1			1.0000E-04
17	7.235		0.6125	0.0129%	6125	1036	5.9 1			1.0000E-04
18	7.517		17.3960	0.3677%	173961	75687	2.3 1			1.0000E-04

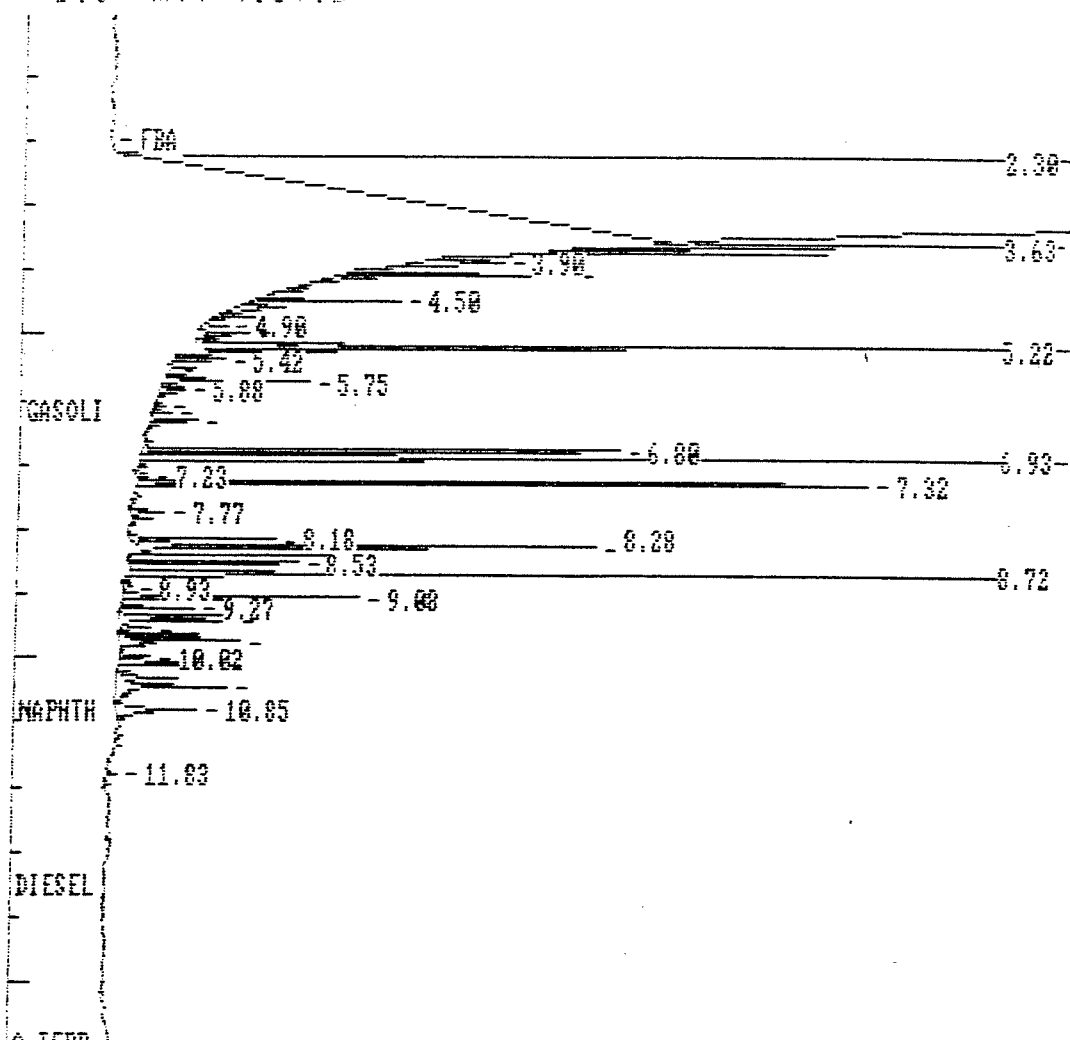
14	7.757	1.1134	0.02481	11770	5484	7.1	1.0000E-04
16	8.167	2.8907	0.02111	18971	14410	1.9	1.0000E-04
21	8.123	11.6719	0.73112	180715	47739	7.8	1.0000E-04
22	8.537	5.4475	0.05751	59276	17947	3.0	1.0000E-04
23	8.717	13.7138	0.59760	137183	95447	2.0	1.0000E-04
	8.955	0.5472	0.01151	5472	1086	5.0	1.0000E-04
25	9.363	5.1629	0.11003	51629	24837	3.1	1.0000E-04
26	9.767	1.7907	0.03782	17907	7979	2.3	1.0000E-04
27	9.450	6.4630	0.13662	64630	11855	5.5	1.0000E-04
28	9.563	0.7170	0.01522	7170	3521	3.0	1.0000E-04
29	9.767	6.4477	0.13632	64477	12715	5.1	1.0000E-04
30	10.017	0.6479	0.01372	6479	3351	1.9	1.0000E-04
31	10.150	3.6962	0.07792	36962	10893	3.4	1.0000E-04
32	10.483	6.9402	0.14672	69402	11302	5.9	1.0000E-04
33	10.850 NAPHTHALENE	1.2434	0.02632	40469	8565	4.7	5.0724E-05
34	11.833	0.3650	0.00772	3650	1250	2.9	1.0000E-04

TOTAL AMOUNT = 4731.1626

PEAKS NOT FOUND IN THIS RUN

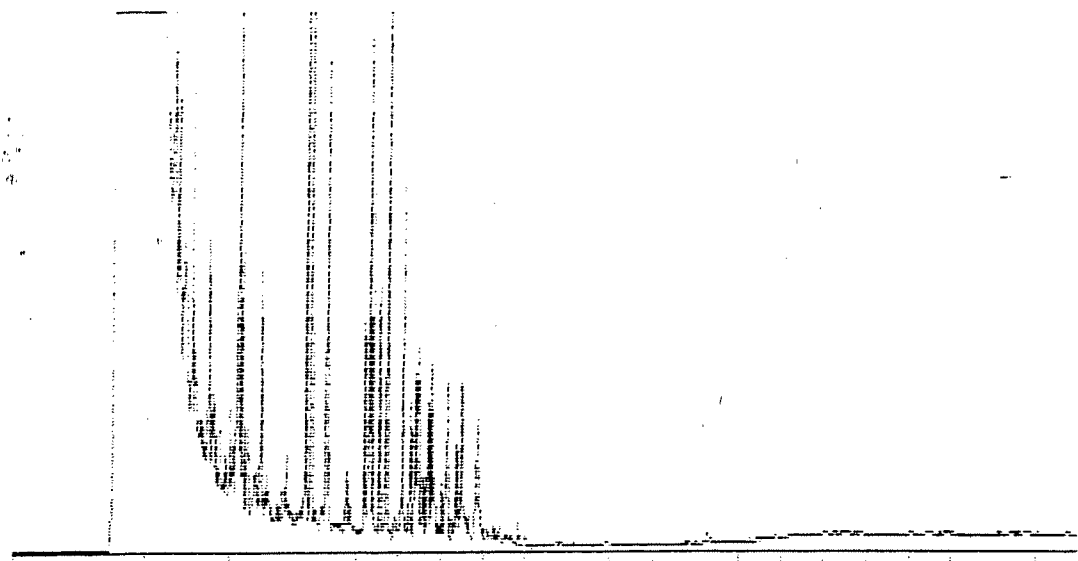
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.92	O-TERPHENYL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AE29-17.PTS Printed on 05-30-1996 at 00:02:20
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mV.
Full Range: 100 millivolts



W-121

MOTOR



[Interface 2] 0-25 Min Scale: 100 Mu
 GASOLINE Processed: 05-30-1996 00:40:43, segment 3, cycle 18
 RAW DATA SAVED IN FILE L:AE29-18.PTS

***** AREA PERCENT REPORT *****

***** 05-30-1996 00:40:49 Version 5.1.5 *****
 * Sample Name: GASOLINE 250 PPM SU9605041 Data File: L:AE29-18
 * Date: 05-30-1996 00:15:41 Method: DIESEL-2
 * Interface: 2 Cycle#: 18 Operator JF Channel#: 0 Vial#: N.A.
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 Instrument Type: 5400 536-01 Column Type: DB5/.25u
 Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS:NAPHTHA:DIESEL:G-TERPH 03/04/96

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.300	45170456	87.676400	0	990788	100.000	45.6
2	3.633	406551	0.7891	1	111595	0.900	3.6
3	3.900	127922	0.2483	1	25108	0.283	5.1
4	4.100	177632	0.3448	1	61850	0.393	2.9
5	4.500	146120	0.2836	1	41352	0.323	3.5
6	5.000	77761	0.1509	1	14368	0.172	5.4
7	5.217	1221654	2.3712	1	497045	2.705	2.5
8	5.617	40104	0.0778	1	7271	0.089	5.5
9	5.750	93613	0.1817	1	44443	0.207	2.1
10	5.883	26057	0.0506	1	7384	0.058	3.5
11	6.233	17629	0.0342	1	5107	0.039	3.5
12	6.350	48026	0.0932	1	11944	0.106	4.0
13	6.817	304473	0.5910	1	132287	0.674	2.3
14	6.933	1040892	2.0204	1	510205	2.304	2.0
15	7.067	7974	0.0155	1	2844	0.018	2.8
16	7.183	14444	0.0280	1	3128	0.032	4.6
17	7.317	455852	0.8848	1	221811	1.009	2.1
18	7.533	9001	0.0175	1	2552	0.020	3.5

4929 204

19	8.650	5754	0.0015	1	1519	0.001	1.0
20	8.705	58519	0.0080	1	11184	0.007	1.0
21	8.787	75351	0.0460	1	50585	0.047	1.0
22	8.800	476629	0.0251	1	134791	1.075	2.0
23	8.550	102101	0.1984	1	45759	0.226	2.1
24	8.717	487897	0.9470	1	255337	1.000	1.0
25	8.900	15405	0.0250	1	5126	0.030	4.0
26	9.085	155273	0.2639	1	25550	0.301	2.1
27	9.267	48196	0.0935	1	23482	0.107	2.1
28	9.385	59034	0.1146	1	23886	0.131	2.5
29	9.467	69175	0.1345	1	28905	0.153	2.4
30	9.585	18227	0.0354	1	9495	0.040	1.9
31	9.767	191484	0.3717	1	31029	0.424	6.7
32	10.150	95070	0.1845	1	27702	0.210	3.4
33	10.235	5642	0.0110	1	2596	0.012	2.2
34	10.483	147398	0.2861	1	23531	0.326	5.2
35	10.850	104094	0.2020	1	22082	0.230	4.7
36	11.100	5251	0.0102	1	1834	0.012	2.9
37	11.250	11256	0.0218	1	2770	0.025	4.1
38	11.400	5081	0.0099	1	2624	0.011	1.9
39	11.533	3904	0.0076	1	1145	0.009	3.4
40	11.650	3874	0.0075	1	1234	0.009	3.1
41	11.835	8982	0.0174	1	3881	0.020	2.5
42	11.983	5916	0.0115	1	1986	0.013	3.0

Total Area: 51519508 Area Reject: 2000 One sample per 1.000 sec

***** EXTERNAL STANDARD TABLE *****

***** 05-30-1996 00:40:49 Version 5.1.5 *****

* Sample Name: GASOLINE 250 PPM SU9605041 Data File: L:AE29-18 *

* Date: 05-30-1996 00:15:41 Method: DIESEL-2 05-28-1996 21:28:45 # 475 *

* Interface: 2 Cycle#: 18 Operator JP Channel#: 0 Unit#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: 3400 536-01 Column Type: DB5/.25u *

* Solvent Description: HE 2ML/MIN *

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *

* Detector 0: FID Detector 1: *

* Misc. Information: GAS:NAPTHA:DIESEL:O-TERPH 03/04/96 *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.300		4517.0454	87.7977%	45170456	990786	45.6 DU			1.0000E-04
2	3.633		40.6531	0.7902%	406531	111595	3.6 1			1.0000E-04
3	3.960		12.7922	0.2486%	127922	25108	5.1 1			1.0000E-04
4	4.100		17.7632	0.3453%	177632	61850	2.9 1			1.0000E-04
5	4.500		14.6120	0.2840%	146120	41352	3.5 1			1.0000E-04
	5.000		7.7761	0.1511%	77761	14368	5.4 1			1.0000E-04
	5.317		122.1653	2.3745%	1221654	497045	2.5 1			1.0000E-04
6	5.617		4.0104	0.0780%	40104	7271	5.5 1			1.0000E-04
9	5.750		9.3613	0.1820%	93613	44443	2.1 1			1.0000E-04
10	5.865		2.6057	0.0506%	26057	7384	3.5 1			1.0000E-04

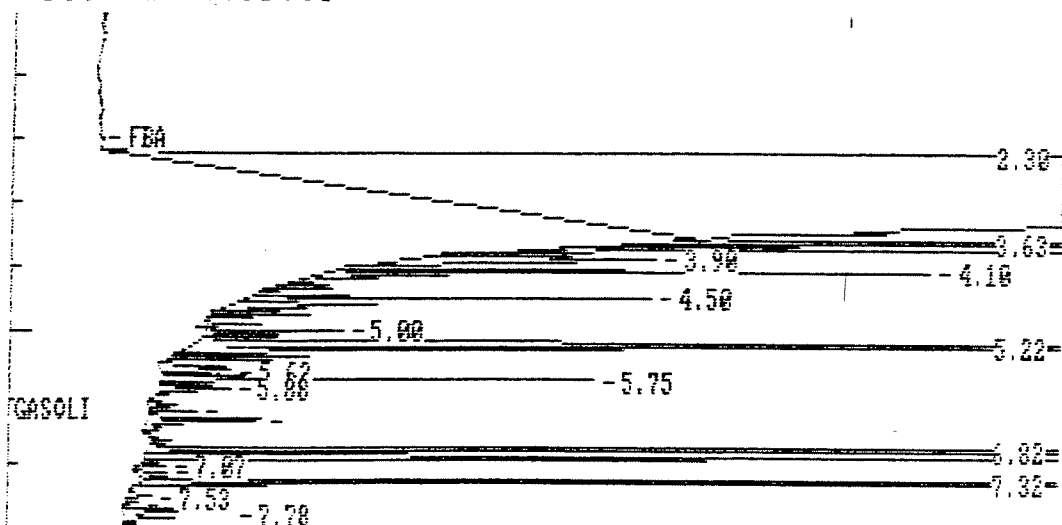
11	6.385	1461162	70	110	1.8524	0.0061%	17609	5107	5.1	1	1.0000E-04
12	6.550				4.8616	0.0453%	48019	11744	4.1	1	1.0000E-04
13	6.817				50.4175	0.0918%	504175	151197	2.5	1	1.0000E-04
14	6.875				104.4392	0.1250%	1041391	512207	1.0	1	1.0000E-04
15	7.067				0.7874	0.0155%	7874	2544	2.5	1	1.0000E-04
16	7.185				1.4444	0.0281%	14444	5128	4.6	1	1.0000E-04
17	7.517				45.5851	0.0860%	455851	221511	1.1	1	1.0000E-04
18	7.533				10.9800	0.0175%	9001	2552	5.5	1	1.0000E-04
19	7.650				0.5739	0.0073%	5739	1514	2.5	1	1.0000E-04
20	7.783				5.5219	0.1081%	55619	11289	4.9	1	1.0000E-04
21	8.185				7.5331	0.1464%	75331	36585	2.1	1	1.0000E-04
22	8.300				47.6629	0.9264%	476629	134791	5.5	1	1.0000E-04
23	8.550				10.2201	0.1986%	102201	45759	2.2	1	1.0000E-04
24	8.717				48.7597	0.9485%	487597	255337	1.9	1	1.0000E-04
25	8.900				1.3405	0.0261%	13405	3126	4.3	1	1.0000E-04
26	9.083				13.5973	0.2645%	135973	63550	2.1	1	1.0000E-04
27	9.267				4.8196	0.0937%	48196	23482	2.1	1	1.0000E-04
28	9.583				5.9034	0.1147%	59034	23886	2.5	1	1.0000E-04
29	9.467				6.9173	0.1345%	69173	28905	1.4	1	1.0000E-04
30	9.583				1.8227	0.0354%	18227	9495	1.9	1	1.0000E-04
31	9.767				19.1483	0.3722%	191484	51029	6.2	1	1.0000E-04
32	10.150				9.5069	0.1848%	95070	27702	3.4	1	1.0000E-04
33	10.285				0.5642	0.0110%	5642	2596	2.2	1	1.0000E-04
34	10.483				14.7398	0.2865%	147398	28531	5.2	1	1.0000E-04
35	10.870	NAPHTHALENE			3.1862	0.0622%	104094	22062	4.7	1	3.0724E-05
36	11.100				0.5250	0.0102%	5251	1834	2.9	1	1.0000E-04
37	11.250				1.1255	0.0219%	11256	2770	4.1	1	1.0000E-04
38	11.400				0.5080	0.0099%	5081	2634	1.9	1	1.0000E-04
39	11.533				0.3904	0.0076%	3904	1145	3.4	1	1.0000E-04
40	11.650				0.3874	0.0075%	3874	1234	3.1	1	1.0000E-04
	11.833				0.8962	0.0175%	8962	3881	2.5	1	1.0000E-04
42	11.985				0.5916	0.0115%	5916	1956	5.0	1	1.0000E-04

TOTAL AMOUNT = 5144.8330

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET. TIME	REFERENCE PEAK
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.92	O-TERPHENYL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AE29-18.FTS Printed on 05-30-1996 at 00:40:50
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mu.
Full Range: 100 millivolts

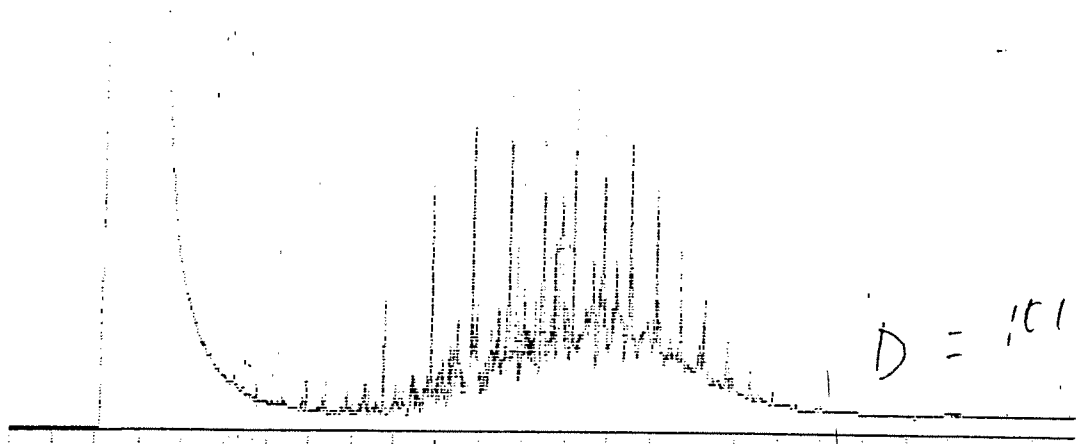


002305

8.16 8.30
 -8.55 8.70
 -8.92 -8.80
 -9.27
 -9.50 -9.77
 -10.28 -10.48
 -11.10
 -11.80

[illegible][illegible]

1. The first step is to identify the problem or question that needs to be addressed. This involves understanding the context and the specific requirements of the task.



[Interface 2] 0-25 Min Scale: 100 Mv
 CV DIESEL Processed: 05-30-1996 01:19:14, segment 4, cycle 19
 RAW DATA SAVED IN FILE L:AE29-19.PTS

***** AREA PERCENT REPORT *****

***** 05-30-1996 01:19:19 Version 5.1.5 *****

* Sample Name: CV DIESEL 250 PPM SUP605044 Data File: L:AE29-19

* Date: 05-30-1996 00:54:11 Method: DIESEL-2

* Interface: 2 Cycle#: 19 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

Instrument Type: 3400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS:NAPTHA:DIESEL:O-TERPH 03/04/96

Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	2.150	4595306	66.997600	971255	100.000	4.7	
2	5.217	4486	0.0654	1	2226	0.098	2.0
3	5.750	4453	0.0649	1	2447	0.097	1.8
4	6.367	5988	0.0873	1	1436	0.130	4.2
5	6.817	6060	0.0885	1	2475	0.132	2.4
6	6.950	13751	0.2005	1	5562	0.299	2.5
7	7.383	23449	0.3419	1	6050	0.510	3.9
8	7.750	3984	0.0581	1	1321	0.087	3.0
9	7.883	8687	0.1267	1	3776	0.189	2.3
10	8.183	6623	0.0966	1	1482	0.144	4.5
11	8.300	40620	0.5922	1	6000	0.884	6.8
12	8.733	47076	0.6863	1	20635	1.024	2.3
13	8.933	3852	0.0562	1	1377	0.084	2.8
14	9.017	16773	0.2445	1	4612	0.365	3.6
15	9.200	12334	0.1798	1	3200	0.268	3.9
16	9.400	9986	0.1456	1	4035	0.217	2.5
17	9.467	10556	0.1539	1	4684	0.230	2.3
18	9.550	14085	0.2054	1	3744	0.307	3.8

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9	9.737	7367	0.0014	1797	0.111	4.7
10	9.870	15265	1.0988	21344	1.540	2.9
11	9.950	3760	0.0559	1554	0.351	2.1
12	10.055	10156	0.1461	4672	0.221	2.7
13	10.155	26415	0.3853	7430	0.525	3.5
14	10.300	18152	0.1851	8953	0.423	2.7
15	10.385	18456	0.2691	7178	0.402	2.6
16	10.500	54547	0.5519	11286	0.745	3.2
17	10.800	106361	1.5507	52147	2.315	2.9
18	10.935	8246	0.1202	10592	0.179	0.8
19	11.250	53319	0.4858	9292	0.725	3.6
20	11.417	59081	0.8614	11988	1.286	4.9
21	11.650	108524	1.5822	50995	2.362	2.1
22	11.853	62044	0.9046	20684	1.550	3.0
23	12.250	59528	0.8679	11719	1.295	5.1
24	12.417	122238	1.7822	42573	2.660	2.9
25	12.617	18900	0.2756	6151	0.411	3.1
26	12.717	46947	0.6845	19912	1.022	2.4
27	12.833	212484	5.0979	31227	4.624	6.8
28	13.150	124830	1.8200	52581	2.716	2.4
29	13.433	16695	0.2434	4865	0.363	3.4
30	13.600	64245	0.9367	14366	1.398	4.5
31	13.833	171408	2.4991	40851	3.750	4.2
32	14.150	124867	1.8205	16349	2.717	7.6
33	14.467	151505	1.9175	41200	2.862	5.2
34	14.750	12205	0.1779	2000	0.266	6.1
35	14.900	32311	0.4711	5344	0.705	6.0
36	15.083	101158	1.4748	30692	2.201	5.3
37	15.333	5215	0.0469	1420	0.070	2.5
38	15.417	11736	0.1711	3943	0.255	3.0
39	15.550	6170	0.0900	1515	0.134	4.1
40	15.667	52028	0.7585	20466	1.132	2.5
41	15.867	11358	0.1653	1931	0.247	5.9
42	16.133	20866	0.3042	4816	0.454	4.3
43	16.233	58671	0.5638	15518	0.842	2.9
44	16.783	25330	0.3693	8728	0.551	2.9
45	16.917	15354	0.2239	2597	0.354	5.9
46	17.333	11931	0.1739	5072	0.260	2.4
47	17.533	4885	0.0712	1087	0.106	4.5
48	17.867	6832	0.0996	2579	0.149	2.6
49	18.417	5558	0.0810	1762	0.121	5.2
50	19.000	2478	0.0361	863	0.054	2.9

Total Area: 6858911 Area Reject: 2000 One sample per 1.000 sec

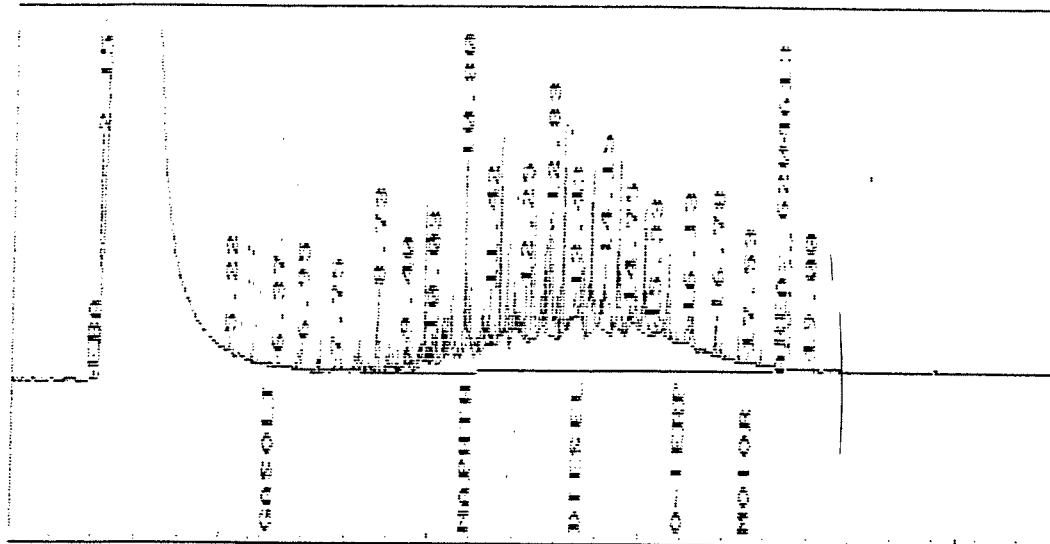
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** ** ** ** **
***** EXTERNAL STANDARD TABLE *****
***** 05-30-1996 01:19:19 Version 5.1.5 *****
* Sample Name: CU DIESEL 250 PPM SU9605044 Data File: L:AE29-19 *
* Date: 05-30-1996 00:54:11 Method: DIESEL-2 05-29-1996 21:28:45 # 675 *
* Interface: 2 Cycle#: 19 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *
*****
* Instrument Type: 3400 536-01 Column Type: DB5/.25u *
  Solvent Description: HE 2ML/MIN *
  Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
* Detector 0: FID Detector 1: *
* Misc. Information: GAS:NAPHTHA:DIESEL:O-TERPH 03/04/96 *
*****

```

START TIME= 10:45:19.08
 STOP TIME= 10:45:19.08
 AREA= 2704.7
 File of data file= L-4524-1.PTB
 Date= 05-31-1996 Time= 07:27:47
 Sample Name= CU DISSOL 250 PPM
 Start Time= 0.00 Stop Time= 25.00 Min. Scale= 5013 Max. Scale= 10000

(51977 x 10) = (4.0585 x 10^5) : 252 / 252 = 1013



Starting Material: 0.00
 Area Weight: 2100
 Amount injected: 1.00
 Sample Weight: 1.0000

Ending Material: 15.00
 One sample per: 1.0000 ml
 Dilution factor: 1.00

PK	RET	PEAK	CONCENTRATION IN	NORMALIZED	AREA	HEIGHT	AREA/	REF	DELTA	CONC
NUM	TIME	NAME	mg/kg	CONC			HEIGHT BL	PEAK	RET TIME	AREA
1	2.150		459.5506	67.8612%	4595506	971255	4.7 00			1.0000E-04
2	3.217		0.4485	0.0662%	4486	2226	2.0 1			1.0000E-04
3	5.750		0.4453	0.0658%	4453	2447	1.8 1			1.0000E-04
4	6.567		0.5988	0.0884%	5988	1456	4.2 1			1.0000E-04
5	6.817		0.6060	0.0895%	6060	2475	2.4 1			1.0000E-04
6	6.950		1.3751	0.2031%	13751	5562	2.5 1			1.0000E-04
7	7.585		2.5448	0.3463%	25449	6050	5.9 1			1.0000E-04
8	7.750		0.3984	0.0588%	3984	1321	3.0 1			1.0000E-04
9	7.885		0.8687	0.1283%	8687	3776	2.3 1			1.0000E-04
10	8.185		0.6523	0.0979%	6523	1482	4.5 1			1.0000E-04
11	8.300		4.0620	0.5399%	40620	6000	6.8 1			1.0000E-04
12	8.753		4.7076	0.5952%	47076	20635	2.3 1			1.0000E-04
13	8.955		0.3852	0.0569%	3852	1577	2.8 1			1.0000E-04
14	9.017		1.6773	0.2477%	16773	4612	3.6 1			1.0000E-04
15	9.200		1.2334	0.1621%	12334	3200	3.9 1			1.0000E-04
16	9.400		0.9986	0.1475%	9986	4035	2.5 1			1.0000E-04
17	9.467		1.0556	0.1559%	10556	4684	2.3 1			1.0000E-04
18	9.550		1.4085	0.2080%	14085	3744	3.8 1			1.0000E-04
19	9.717		0.7569	0.1088%	7569	1747	4.2 1			1.0000E-04
20	9.850		7.5365	1.1150%	75365	36354	2.0 1			1.0000E-04
21	9.950		0.3700	0.0546%	3700	1554	2.4 1			1.0000E-04
22	10.055		1.0156	0.1500%	10156	4672	2.2 1			1.0000E-04
23	10.155		2.6415	0.3901%	26415	7460	3.5 1			1.0000E-04
24	10.500		1.9552	0.2887%	19552	8955	2.2 1			1.0000E-04
25	10.585		1.8455	0.2725%	18455	7178	2.6 1			1.0000E-04
26	10.500		3.6547	0.5597%	36547	11286	3.2 1			1.0000E-04
27	10.800	NAPHTHALENE	3.2678	0.4826%	106561	52147	2.0 1	0	-4.608	5.0724E-05
28	10.533		0.8246	0.1218%	8246	10592	0.8 1			1.0000E-04
29	11.250		3.5518	0.4920%	35519	9292	3.6 1			1.0000E-04
30	11.417		5.9081	0.8725%	59081	11988	4.9 1			1.0000E-04
31	11.650		10.8524	1.6026%	108524	50995	2.1 1			1.0000E-04
32	11.855		6.2044	0.9162%	62044	20684	3.0 1			1.0000E-04
33	12.250		5.9528	0.8791%	59528	11719	5.1 1			1.0000E-04
34	12.417		12.2238	1.8052%	122238	42573	2.9 1			1.0000E-04
35	12.617		1.8900	0.2791%	18900	6151	3.1 1			1.0000E-04
36	12.717		4.6947	0.6933%	46947	19912	2.4 1			1.0000E-04
37	12.855		21.2484	3.1379%	212484	31227	6.8 1			1.0000E-04
38	13.150		12.4830	1.8454%	124830	52581	2.4 1			1.0000E-04
39	13.455	DIESEL C10-C25	1.0410	0.1537%	16695	4865	3.4 1	0	-4.938	6.2357E-05
40	13.600		6.4245	0.9487%	64245	14366	4.5 1			1.0000E-04
41	13.835		17.1408	2.5313%	171408	40851	4.2 1			1.0000E-04
42	14.150		12.4867	1.8440%	124867	16349	7.6 1			1.0000E-04
43	14.467		13.1505	1.9420%	131505	41200	3.2 1			1.0000E-04
44	14.750		1.2205	0.1802%	12205	2000	6.1 1			1.0000E-04
45	14.900		3.2311	0.4771%	32311	5344	6.0 1			1.0000E-04
46	15.085		10.1158	1.4939%	101158	30692	3.3 1			1.0000E-04
47	15.355		0.3215	0.0475%	3215	1420	2.3 1			1.0000E-04
48	15.417		1.1736	0.1733%	11736	5943	3.0 1			1.0000E-04
	15.550		0.6170	0.0911%	6170	1515	4.1 1			1.0000E-04
50	15.667		5.2028	0.7683%	52028	20466	2.5 1			1.0000E-04
51	15.867	O-TERPHEHYL	0.3674	0.0543%	11358	1931	5.9 1	0	-3.514	3.2408E-05
52	16.135		2.0866	0.3081%	20866	4816	4.3 1			1.0000E-04

002310

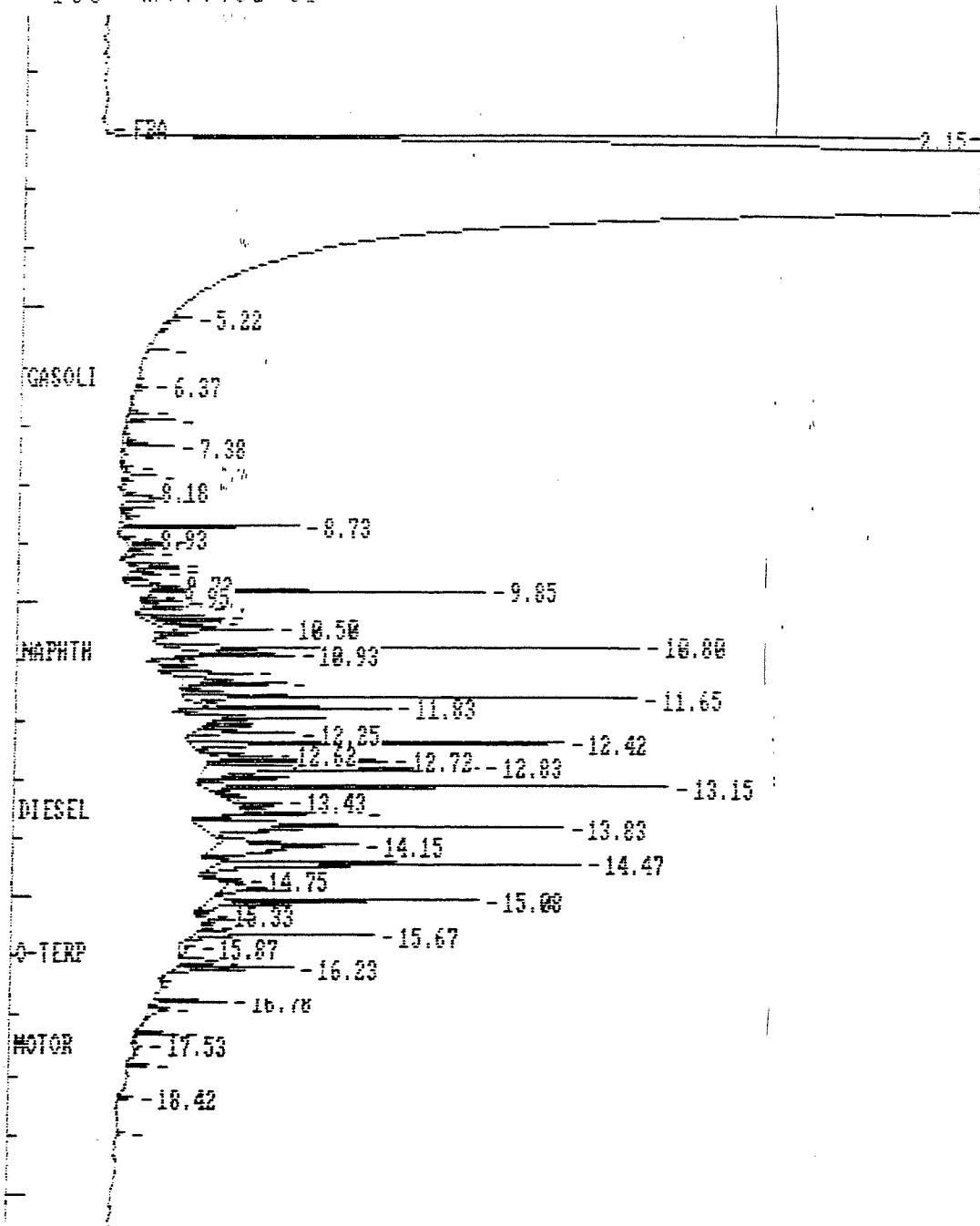
83	16.077	0.8471	0.87111	81171	18118	1.8	1	1.8	1.8
84	16.789	0.8519	0.87411	81181	18128	1.8	1	1.8	1.8
85	16.817	0.8554	0.87672	81194	18137	1.8	1	1.8	1.8
86	17.033	0.8581	0.87911	81201	18147	1.8	1	1.8	1.8
87	17.659 MOTOR OIL	0.8728	0.89721	81218	18157	4.5	1	0	1.8
88	17.867	0.8832	0.10092	81222	18169	1.8	1	1.8	1.8
89	18.417	0.8858	0.08211	81238	18172	3.2	1	1.8	1.8
90	19.000	0.02478	0.03661	81248	865	2.8	1	1.8	1.8

TOTAL AMOUNT = 677.1625

PEAKS NOT FOUND IN THIS RUN

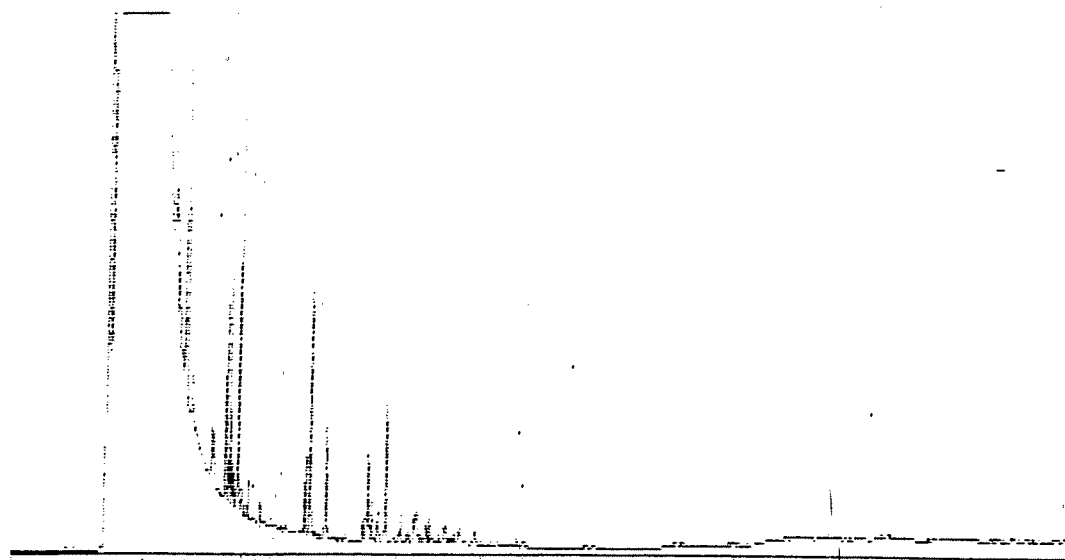
NAME ADJUSTED RET. TIME. REFERENCE PEAK
GASOLINE TO C10 6.17 GASOLINE TO C10.

Data File = L:AE29-19.PTS. Printed on 05-30-1996 at 01:19:21
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mV.
Full Range: 100 millivolts



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[Interface 2] 0-25 Min Scale: 100 MU
 CU GASOLIN Processed: 05-30-1996 01:57:44, segment 1, cycle 20
 RAW DATA SAVED IN FILE L:AE29-20.PTS

***** AREA PERCENT REPORT *****

***** 05-30-1996 01:57:50 Version 5.1.5 *****
 * Sample Name: CU GASOLINE 50 PPM SU9605043 Data File: L:AE29-20 *
 * Date: 05-30-1996 01:52:42 Method: DIESEL-2 *
 * Interface: 2 Cycle#: 20 Operator JP Channel#: 0 Visi#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 Instrument Type: 3400 556-01 Column Type: DB5/0.25u
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 01: FID Detector 1: *
 * Misc. Information: GAS:NAPHTHA:DIESEL:O-TERPH 03/04/96 *

 Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.150	3781787	7.300200	983540	8.392	3.8	
2	2.300	45061308	90.559900	958062	100.000	47.0	
3	3.953	138250	0.2778	1	71304	0.307	1.9
4	4.583	38435	0.0772	1	9251	0.085	4.2
5	5.000	154130	0.3098	1	40637	0.342	3.8
6	5.217	156093	0.3137	1	72567	0.346	2.2
7	5.450	12867	0.0259	1	6614	0.029	1.9
8	5.750	6939	0.0139	1	3854	0.015	1.8
9	6.367	3289	0.0066	1	1042	0.007	3.2
10	6.817	28801	0.0579	1	14012	0.064	2.1
11	6.953	101432	0.2038	1	46191	0.225	2.2
12	7.317	43194	0.0868	1	20426	0.096	2.1
13	7.783	2845	0.0057	1	1199	0.006	2.4
14	8.200	8638	0.0174	1	4065	0.019	2.1
15	8.300	61262	0.1231	1	15659	0.136	3.9
16	8.550	11897	0.0239	1	5592	0.026	2.1
17	8.717	51405	0.1033	1	24809	0.114	2.1
18	9.083	22662	0.0455	1	5173	0.050	4.4

Gas = 768072
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 (5.1977410)
 394/50 = 80

19	8.400	7057	0.0142	1	2604	0.016	2.7
20	8.467	8969	0.0180	1	3998	0.020	2.2
21	8.783	17476	0.0351	1	4140	0.039	4.2
22	10.017	2299	0.0046	1	1022	0.005	2.2
23	10.167	12593	0.0253	1	2904	0.028	4.3
24	10.500	7350	0.0148	1	2430	0.016	3.0
25	10.867	8320	0.0167	1	2387	0.018	3.5
26	11.850	4351	0.0087	1	1617	0.010	2.7
27	12.000	4959	0.0100	1	1375	0.011	3.6

Total Area: 49758888 Area Reject: 2000 One sample per 1.000 sec

```

** ** ** ** **
***** EXTERNAL STANDARD TABLE *****
***** 05-30-1996 01:57:50 Version 5.1.5 *****
* Sample Name: CU GASOLINE 50 PPM SU9605043 Data File: L:9E28-20
* Date: 05-30-1996 01:32:42 Method: DIESEL-2 05-29-1996 21:28:45 # 675
* Interface: 2 Cycle#: 20 Operator JF Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
*****
* Instrument Type: 3400 536-01 Column Type: DB5/.25u
* Solvent Description: HE 2ML/MIN
* Conditions: 45 AMIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS:NAPHTHA:DIESEL:O-TERPH 03/04/96
*****
Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.150		578.1787	7.6011%	3781787	983540	3.8	0V			1.0000E-04
2	2.300		4506.1606	90.5704%	45061608	958062	47.0	0V			1.0000E-04
3	3.933		13.8250	0.2779%	138250	71304	1.9	1			1.0000E-04
4	4.585		3.8435	0.0773%	38435	9251	4.2	1			1.0000E-04
5	5.000		15.4130	0.3098%	154130	40637	3.8	1			1.0000E-04
6	5.217		15.6093	0.5137%	156093	72567	2.2	1			1.0000E-04
7	5.450		1.2867	0.0259%	12867	6614	1.9	1			1.0000E-04
8	5.750		0.6939	0.0139%	6939	3854	1.8	1			1.0000E-04
9	6.367		0.3289	0.0066%	3289	1042	3.2	1			1.0000E-04
10	6.817		2.8801	0.0579%	28801	14012	2.1	1			1.0000E-04
11	6.933		10.1432	0.2039%	101432	46191	2.2	1			1.0000E-04
12	7.317		4.3194	0.0868%	43194	20426	2.1	1			1.0000E-04
13	7.783		0.2845	0.0057%	2845	1199	2.4	1			1.0000E-04
14	8.200		0.8637	0.0174%	8638	4065	2.1	1			1.0000E-04
15	8.300		6.1262	0.1231%	61262	15659	3.9	1			1.0000E-04
16	8.550		1.1897	0.0239%	11897	5592	2.1	1			1.0000E-04
17	8.717		5.1405	0.1033%	51405	24809	2.1	1			1.0000E-04
18	9.083		2.2662	0.0455%	22662	5173	4.4	1			1.0000E-04
19	9.400		0.7057	0.0142%	7057	2604	2.7	1			1.0000E-04
20	9.467		0.8969	0.0180%	8969	3998	2.2	1			1.0000E-04
21	9.783		1.7476	0.0351%	17476	4140	4.2	1			1.0000E-04
	10.017		0.2298	0.0046%	2299	1022	2.2	1			1.0000E-04
23	10.167		1.2593	0.0253%	12593	2904	4.3	1			1.0000E-04
24	10.500		0.7350	0.0148%	7350	2430	3.0	1			1.0000E-04
25	10.867	NAPHTHALENE	0.2556	0.0051%	8320	2387	3.5	1	0	1.1536	3.0724E-05

002311

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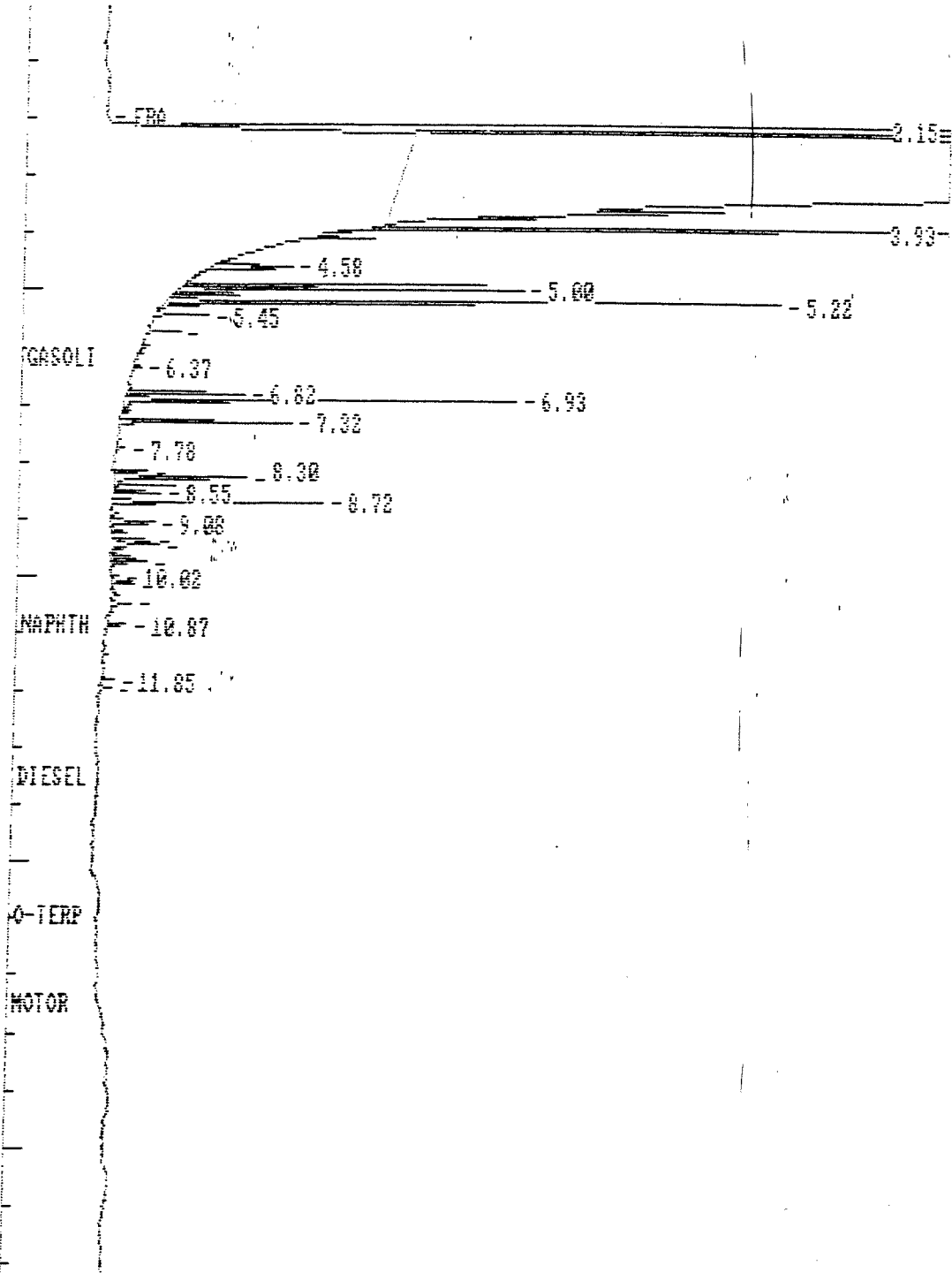
1 0000
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TOTAL AMOUNT = 4575 5.05

PEAKS NOT FOUND IN THIS RUN

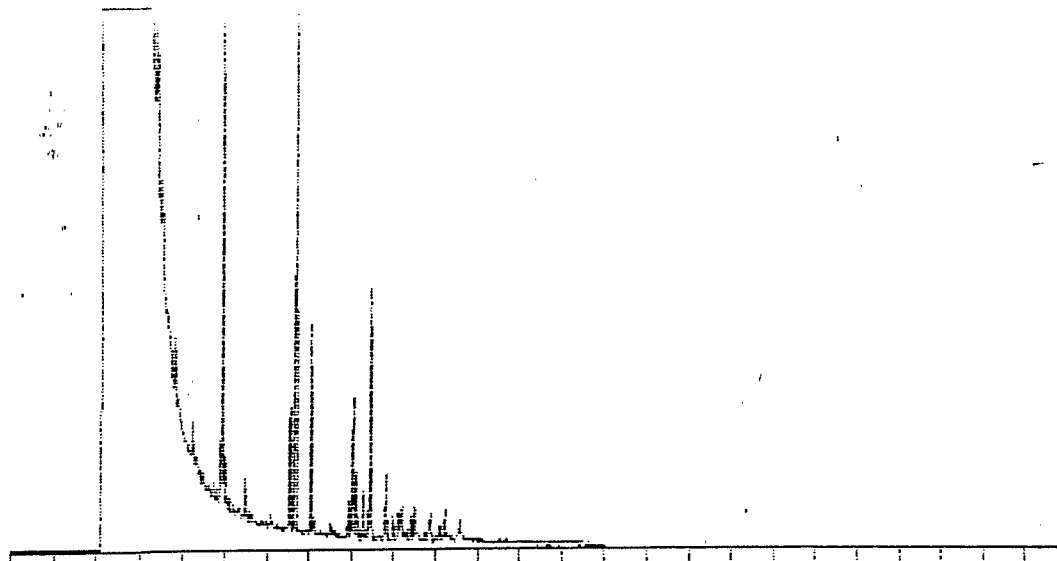
NAME	ADJUSTED RET.TIME	REFERENCE PEAK
GASOLINE TO C10	5.17	GASOLINE TO C10
DIESEL C10-C25	15.50	DIESEL C10-C25
3-TERPHENYL	15.92	3-TERPHENYL
MOTOR OIL	17.50	3-TERPHENYL

Data File = L:\AE28-20.PTS Printed on 05-30-1996 at 01:57:51
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 min.
Full Range: 100 millivolts



002315

SEQUENCE RECORDED IN D:DIESEL-2.SFQ



[Interface 2] 0-25 Min Scale: 100 Mv
C10;C25 Processed: 07-16-1996 15:51:34, segment 2, cycle 27
RAW DATA SAVED IN FILE L:AG10-27.PTS

***** AREA PERCENT REPORT *****

***** 07-16-1996 15:51:44 Version 5.1.5 *****
* Sample Name: GASOLINE 50 PPM SU9606013 Data File: L:AG10-27 *
* Date: 07-16-1996 15:37:25 Method: DIESEL-2 *
* Interface: 2 Cycle#: 27 Operator JF Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *
* *****
* Instrument Type: 3400 536-01 Column Type: DB5/.25u *
* Solvent Description: HE 2ML/MIN *
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
* Detector 0: FID Detector 1: *
* Misc. Information: GAS;NAPTHA;DIESEL;0-TERPH 05/29/96 *
* *****
Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.150	48455764	98.031800	993819		100.000	48.8
2	4.217	26380	0.0534	1	6915	0.054	3.8
3	4.483	6746	0.0136	1	1791	0.014	2.3
4	4.933	219159	0.4434	1	95601	0.452	2.3
5	5.300	6010	0.0122	1	1441	0.012	4.2
6	5.483	17150	0.0347	1	7264	0.035	2.4
7	5.600	4879	0.0099	1	1468	0.010	3.3
8	6.083	6307	0.0128	1	2421	0.013	2.6
9	6.550	54692	0.1106	1	22168	0.113	2.5
10	6.667	186299	0.3769	1	95416	0.384	2.0
11	6.967	3855	0.0078	1	602	0.008	6.4
12	7.050	81691	0.1653	1	38326	0.169	2.1
13	7.517	6301	0.0127	1	2092	0.013	3.0
14	7.917	13801	0.0279	1	6323	0.028	2.2
	8.033	87404	0.1768	1	25398	0.180	3.4
16	8.283	18839	0.0381	1	8540	0.039	2.2
17	8.450	86626	0.1753	1	45999	0.179	1.9

6785.739513
/5.1977 x 10
= 38.4/50 = 77

002316

18	8.817	34208	0.0692	1	11825	0.071	2.9
19	9.117	9988	0.0202	1	4054	0.021	2.5
20	9.200	12171	0.0246	1	5039	0.025	2.4
21	9.317	2970	0.0060	1	1610	0.006	1.8
22	9.500	30737	0.0622	1	5962	0.063	5.2
23	9.750	2973	0.0060	1	1344	0.006	2.2
24	9.883	17040	0.0345	1	5184	0.035	3.3
25	10.217	18072	0.0366	1	5086	0.037	3.6
26	10.567	18535	0.0375	1	3791	0.038	4.9

Total Area: 49428596 Area Reject: 2000 One sample per 1.000 sec.

```

***** EXTERNAL STANDARD TABLE *****
***** 07-16-1996 15:51:44 Version 5.1.5 *****
* Sample Name: GASOLINE 50 PPM SU9606013 Data File: L:AG10-27 *
* Date: 07-16-1996 15:37:25 Method: DIESEL-2 06-28-1996 14:32:23 # 694 *
* Interface: 2 Cycle#: 27 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *
*****
* Instrument Type: 3400 536-01 Column Type: DB5/.25u *
* Solvent Description: HE 2ML/MIN *
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
* Detector 0: FID Detector 1: *
* Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96 *
*****
Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.150		4845.5762	98.0378%	48455764	993819	48.8 0V			1.0000E-04
2	4.217		2.6380	0.0534%	26380	6915	3.8 1			1.0000E-04
3	4.483		0.6746	0.0136%	6746	1791	3.8 1			1.0000E-04
4	4.933		21.9159	0.4434%	219159	95601	2.3 1			1.0000E-04
5	5.300		0.6010	0.0122%	6010	1441	4.2 1			1.0000E-04
6	5.483		1.7150	0.0347%	17150	7264	2.4 1			1.0000E-04
7	5.600		0.4878	0.0099%	4879	1468	3.3 1			1.0000E-04
8	6.083	GASOLINE TO C10	0.3278	0.0066%	6307	2421	2.6 1	0	-1.404	5.1977E-05
9	6.550		5.4692	0.1107%	54692	22168	2.5 1			1.0000E-04
10	6.667		18.6299	0.3769%	186299	95416	2.0 1			1.0000E-04
11	6.967		0.3855	0.0078%	3855	602	6.4 1			1.0000E-04
12	7.050		8.1691	0.1653%	81691	38326	2.1 1			1.0000E-04
13	7.517		0.6301	0.0127%	6301	2092	3.0 1			1.0000E-04
14	7.917		1.3801	0.0279%	13801	6323	2.2 1			1.0000E-04
15	8.033		8.7404	0.1768%	87404	25398	3.4 1			1.0000E-04
16	8.283		1.8838	0.0381%	18839	8540	2.2 1			1.0000E-04
17	8.450		8.6626	0.1753%	86626	45999	1.9 1			1.0000E-04
18	8.817		3.4208	0.0692%	34208	11825	2.9 1			1.0000E-04
19	9.117		0.9988	0.0202%	9988	4054	2.5 1			1.0000E-04
20	9.200		1.2170	0.0246%	12171	5039	2.4 1			1.0000E-04
21	9.317		0.2970	0.0060%	2970	1610	1.8 1			1.0000E-04
22	9.500		3.0736	0.0622%	30737	5962	5.2 1			1.0000E-04
23	9.750		0.2973	0.0060%	2973	1344	2.2 1			1.0000E-04
24	9.883		1.7040	0.0345%	17040	5184	3.3 1			1.0000E-04
25	10.217		1.8072	0.0366%	18072	5086	3.6 1			1.0000E-04

002317

26 10.567

1.8535

0.03752

18535

3791

4.9 1

1.0000E-04

TOTAL AMOUNT = 4942.5566

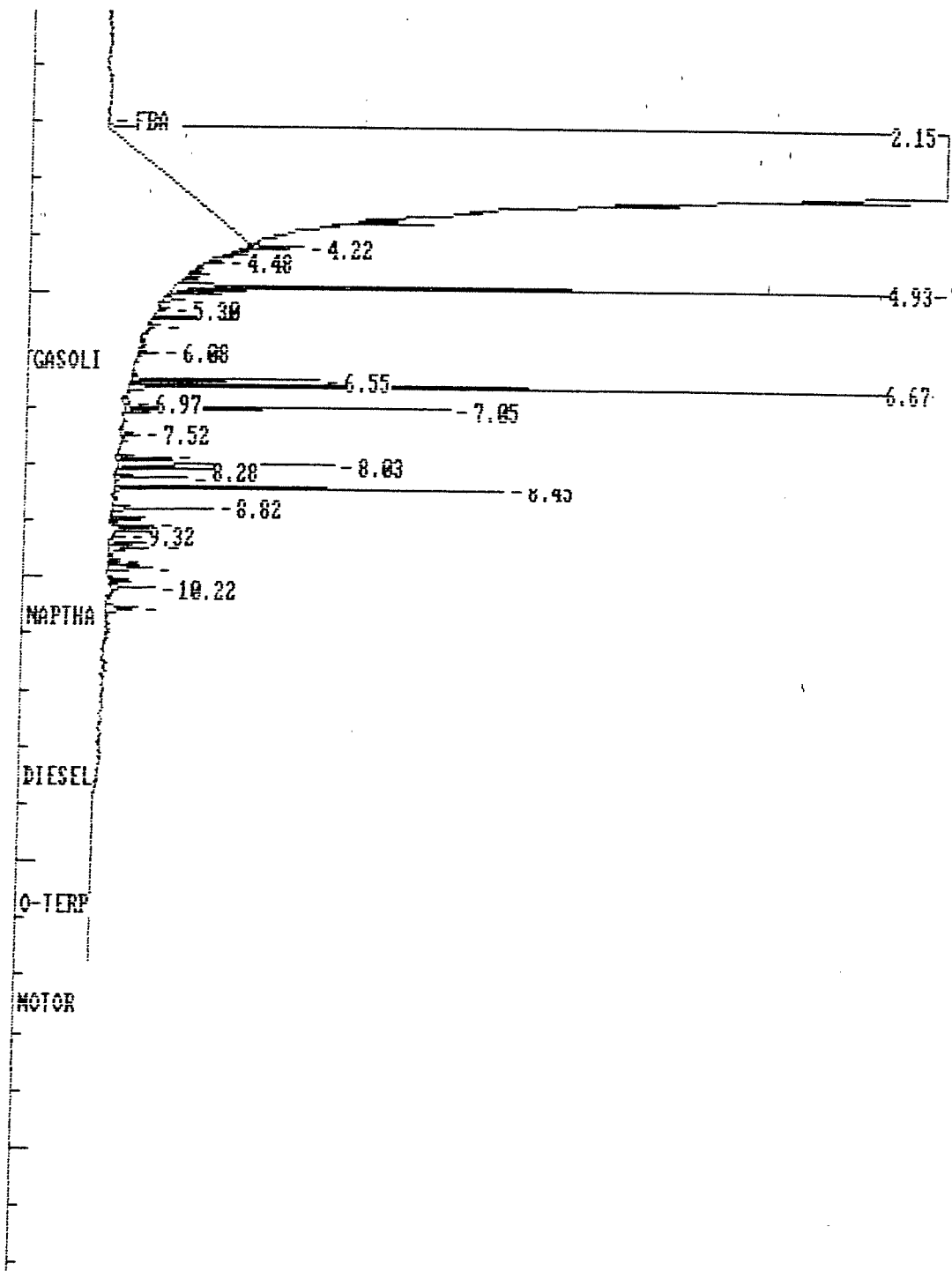
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
NAPTHALENE	10.68	NAPTHALENE
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.72	O-TERPHENYL
HYDRAULIC OIL	16.00	HYDRAULIC OIL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AG10-27.PTS Printed on 07-16-1996 at 15:51:45

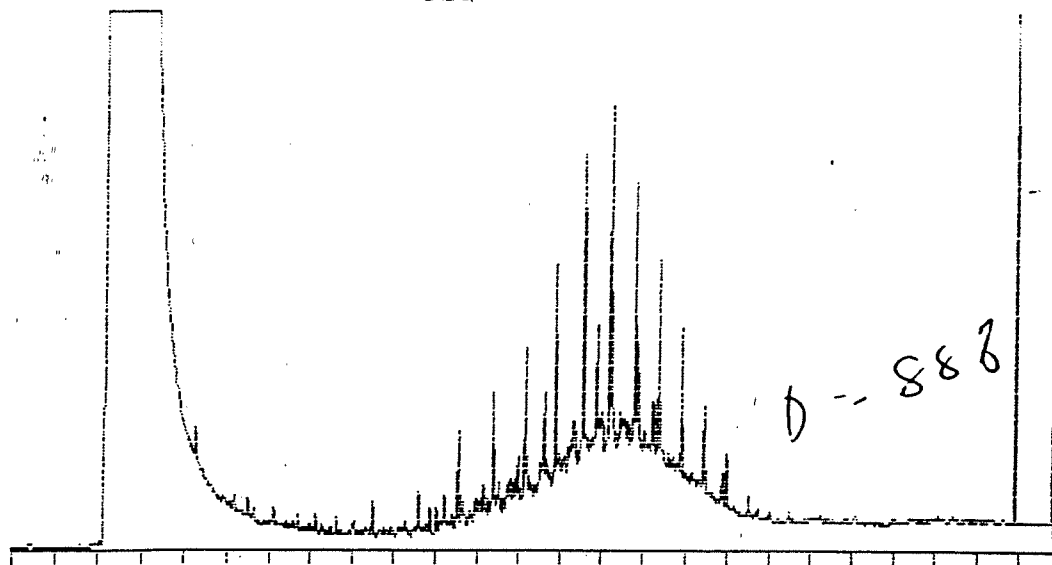
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

Full Range: 100 millivolts



002318

L



[Interface 2] 0-25 Min Scale: 100 Mu

DIESEL 25 Processed: 07-16-1996 16:26:14, segment 3, cycle 28

RAW DATA SAVED IN FILE L:AG10-28.PTS

***** AREA PERCENT REPORT *****

***** 07-16-1996 16:26:25 Version 5.1.5' *****

* Sample Name: DIESEL 250 PPM SU9607030 Data File: L:AG10-28 *

* Date: 07-16-1996 16:01:10 Method: DIESEL-2 *

* Interface: 2 Cycle#: 28 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: 3400 536-01 Column Type: DB5/.25u *

* Solvent Description: HE 2ML/MIN *

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *

* Detector 0: FID Detector 1: *

* Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96 *

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.150	48043896	96.761000	0	993482	100.000	48.4
2	4.233	5512	0.0111	1	5415	0.011	1.0
3	5.150	7026	0.0142	1	2960	0.015	2.4
4	5.483	6225	0.0125	1	3380	0.013	1.8
5	5.617	4555	0.0092	1	2343	0.009	1.9
6	6.100	8121	0.0164	1	2856	0.017	2.8
7	6.683	6571	0.0132	1	2712	0.014	2.4
8	7.117	10701	0.0216	1	3103	0.022	3.4
9	7.467	3315	0.0067	1	1215	0.007	2.7
10	7.617	7416	0.0149	1	2983	0.015	2.5
11	8.033	7809	0.0157	1	2419	0.016	3.2
12	8.333	4897	0.0099	1	1317	0.010	3.7
13	8.483	13663	0.0275	1	6001	0.028	2.3
14	8.933	5533	0.0111	1	1478	0.012	3.7
15	9.133	4832	0.0097	1	1183	0.010	4.1
	9.583	25173	0.0507	1	7433	0.052	3.4
17	9.850	10321	0.0208	1	4506	0.021	2.3
18	10.017	10997	0.0221	1	4269	0.023	2.6

19	10.200	15140	0.0505	1	5272	0.052	2.8
20	10.533	35895	0.0723	1	16964	0.075	2.1
21	10.650	17594	0.0354	1	3848	0.037	4.6
22	10.967	12901	0.0260	1	3079	0.027	4.2
23	11.083	5754	0.0116	1	2243	0.012	2.6
24	11.150	16534	0.0333	1	5035	0.034	3.3
	11.367	71925	0.1449	1	22214	0.150	3.2
26	11.700	6555	0.0132	1	2418	0.014	2.7
27	11.983	39828	0.0802	1	7373	0.083	5.4
28	12.133	90443	0.1822	1	27187	0.188	3.3
29	12.500	10774	0.0217	1	3004	0.022	3.6
30	12.600	44697	0.0900	1	14671	0.093	3.0
31	12.850	103581	0.2086	1	39671	0.216	2.6
32	13.067	8457	0.0170	1	2343	0.018	3.6
33	13.250	13460	0.0271	1	1964	0.028	6.9
34	13.317	23140	0.0466	1	6207	0.048	3.7
35	13.533	135151	0.2722	1	55793	0.281	2.4
36	13.850	42674	0.0859	1	19546	0.089	2.2
37	14.000	9976	0.0201	1	5470	0.021	1.8
38	14.167	268721	0.5412	1	63406	0.559	4.2
39	14.767	147085	0.2962	1	47932	0.306	3.1
40	15.200	48402	0.0975	1	9634	0.101	5.0
41	15.350	94760	0.1908	1	36276	0.197	2.6
42	15.583	5676	0.0114	1	2312	0.012	2.5
43	15.700	4190	0.0084	1	2112	0.009	2.0
44	15.900	51183	0.1031	1	25935	0.107	2.0
45	16.433	33662	0.0678	1	15866	0.070	2.1
46	16.867	13247	0.0267	1	5208	0.028	2.5
47	16.967	21902	0.0441	1	9854	0.046	2.2
48	17.500	10051	0.0202	1	3614	0.021	2.8
49	17.717	5811	0.0117	1	1914	0.012	3.0
	18.017	3601	0.0073	1	1454	0.007	2.5
	18.467	3690	0.0074	1	1473	0.008	2.5
52	19.233	3941	0.0079	1	1160	0.008	3.4
53	20.083	4218	0.0085	1	1308	0.009	3.2
54	21.017	4075	0.0082	1	976	0.008	4.2
55	23.617	2681	0.0054	1	729	0.006	3.7
56	24.767	34188	0.0689	1	18880	0.071	1.8

Total Area: 49652120 . Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 07-16-1996 16:26:25 Version 5.1.5 *****

* Sample Name: DIESEL 250 PPM SU9607030 Data File: L:AG10-28 *

* Date: 07-16-1996 16:01:10 Method: DIESEL-2 06-28-1996 14:32:23 # 694 *

* Interface: 2 Cycle#: 28 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: 3400 536-01 Column Type: DB5/.25u *

* Solvent Description: HE 2ML/MIN *

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *

* Detector 0: FID Detector 1: *

* Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96 *

Starting Delay: 0.00 Ending retention time: 25.00

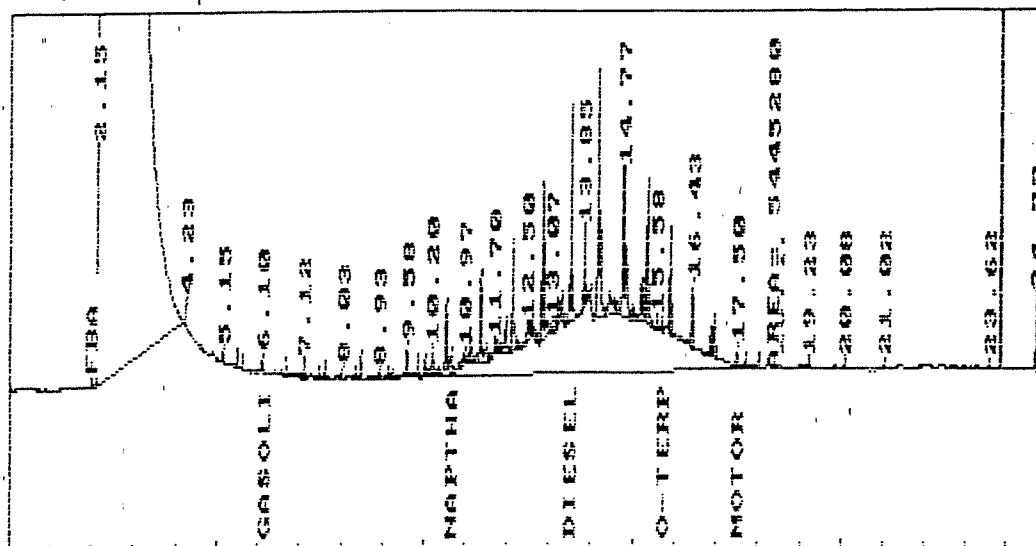
A reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

002321

START TIME= 8.433 START HEIGHT= 7285
 STOP TIME= 18.517 STOP HEIGHT= 9980
 AREA = 5445280
 Plot of data file: L:AG10-28.PTS
 Date: 07-17-1996 Time: 06:19:50
 Sample Name: DIESEL 250 PPM SU960
 Start Time= 0.02 Stop Time = 25.03 Min. Scale= 5129 Max. Scale= 105129

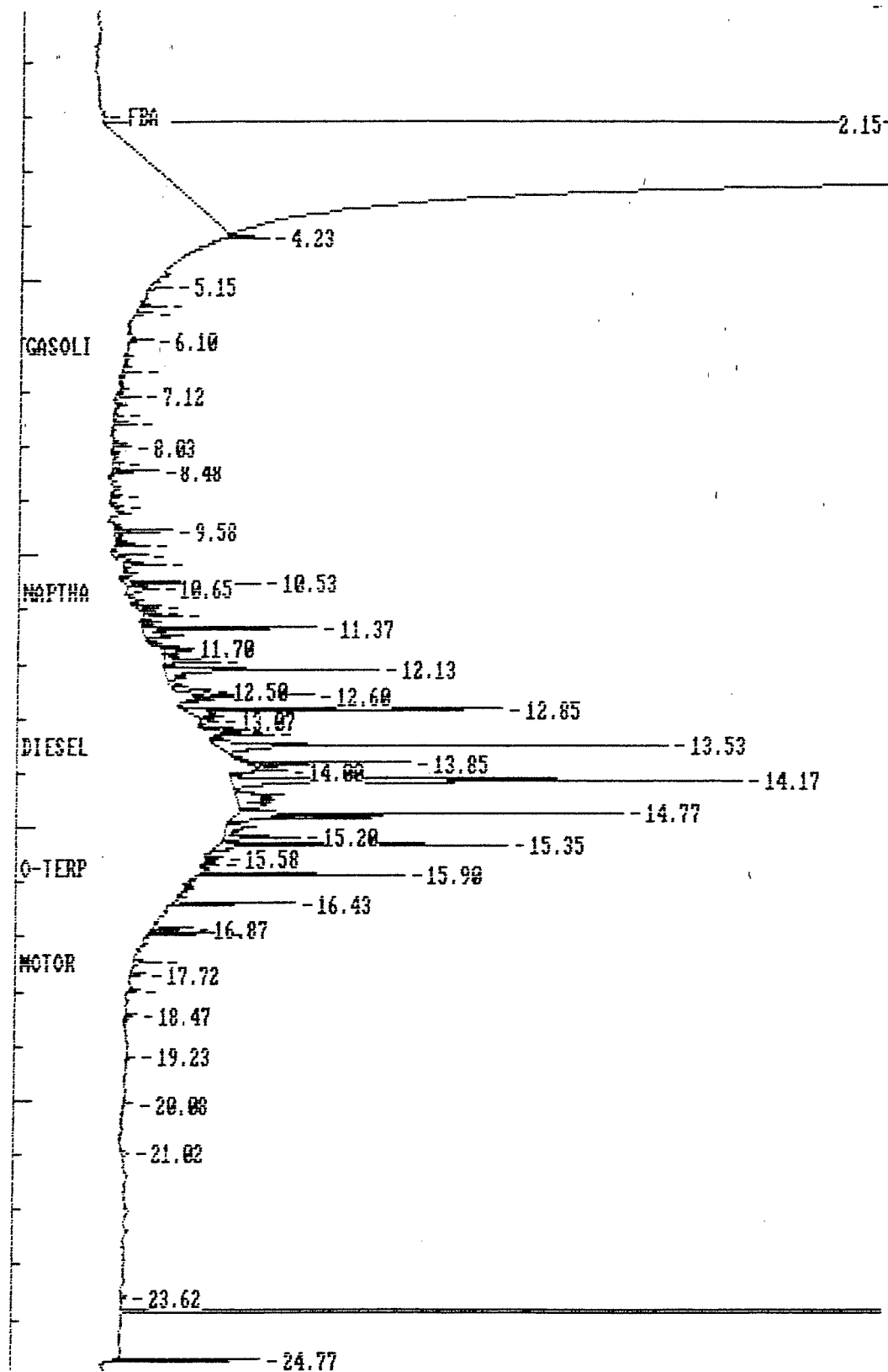


PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	Z DELTA RET TIME	CONC/AREA
1	2.150		4804.3896	96.9753%	48043896	993482	48.4 0V			1.0000E-04
	4.233		0.5512	0.0111%	5512	5415	1.0 1			1.0000E-04
	5.150		0.7026	0.0142%	7026	2960	2.4 1			1.0000E-04
4	5.483		0.6225	0.0126%	6225	3380	1.8 1			1.0000E-04
5	5.617		0.4555	0.0092%	4555	2343	1.9 1			1.0000E-04
6	6.100	GASOLINE TO C10	0.4221	0.0085%	8121	2856	2.8 1	0	-1.134	5.1977E-05
7	6.683		0.6571	0.0133%	6571	2712	2.4 1			1.0000E-04
8	7.117		1.0701	0.0216%	10701	3103	3.4 1			1.0000E-04
9	7.467		0.3315	0.0067%	3315	1215	2.7 1			1.0000E-04
10	7.617		0.7416	0.0150%	7416	2983	2.5 1			1.0000E-04
11	8.033		0.7808	0.0158%	7809	2419	3.2 1			1.0000E-04
12	8.333		0.4897	0.0099%	4897	1317	3.7 1			1.0000E-04
13	8.483		1.3663	0.0276%	13663	6001	2.3 1			1.0000E-04
14	8.933		0.5533	0.0112%	5533	1478	3.7 1			1.0000E-04
15	9.133		0.4832	0.0098%	4832	1183	4.1 1			1.0000E-04
16	9.583		2.5173	0.0508%	25173	7433	3.4 1			1.0000E-04
17	9.850		1.0321	0.0208%	10321	4506	2.3 1			1.0000E-04
18	10.017		1.0997	0.0222%	10997	4269	2.6 1			1.0000E-04
19	10.200		1.5140	0.0306%	15140	5372	2.8 1			1.0000E-04
20	10.533		3.5894	0.0725%	35895	16964	2.1 1			1.0000E-04
21	10.650	NAPTHALENE	0.5406	0.0109%	17594	3848	4.6 1	0	-1.2809	3.0724E-05
22	10.967		1.2901	0.0260%	12901	3079	4.2 1			1.0000E-04
23	11.083		0.5754	0.0116%	5754	2243	2.6 1			1.0000E-04
24	11.150		1.6534	0.0334%	16534	5035	3.3 1			1.0000E-04
25	11.367		7.1925	0.1452%	71925	22214	3.2 1			1.0000E-04
26	11.700		0.6554	0.0132%	6555	2418	2.7 1			1.0000E-04
27	11.983		3.9828	0.0804%	39828	7373	5.4 1			1.0000E-04
	12.133		9.0443	0.1826%	90443	27187	3.3 1			1.0000E-04
29	12.500		1.0774	0.0217%	10774	3004	3.6 1			1.0000E-04
30	12.600		4.4696	0.0902%	44697	14671	3.0 1			1.0000E-04
31	12.850		10.3581	0.2091%	103581	39671	2.6 1			1.0000E-04
32	13.067		0.8457	0.0171%	8457	2343	3.6 1			1.0000E-04
33	13.250		1.3460	0.0272%	13460	1964	6.9 1			1.0000E-04
34	13.317		2.3139	0.0467%	23140	6207	3.7 1			1.0000E-04
35	13.533	DIESEL C10-C25	5.4851	0.1107%	135151	55793	2.4 1	0	1.2469	4.0585E-05
36	13.850		4.2674	0.0861%	42674	19546	2.2 1			1.0000E-04
37	14.000		0.9976	0.0201%	9976	5470	1.8 1			1.0000E-04
38	14.167		26.8721	0.5424%	268721	63406	4.2 1			1.0000E-04
39	14.767		14.7085	0.2969%	147085	47932	3.1 1			1.0000E-04
40	15.200		4.8401	0.0977%	48402	9634	5.0 1			1.0000E-04
41	15.350		9.4760	0.1913%	94760	36276	2.6 1			1.0000E-04
42	15.583		0.5676	0.0115%	5676	2312	2.5 1			1.0000E-04
43	15.700	O-TERPHENYL	0.1358	0.0027%	4190	2112	2.0 1	0	-1.1272	3.2408E-05
44	15.900	HYDRAULIC OIL	4.3460	0.0877%	51183	25935	2.0 1	0	-1.625	8.4912E-05
45	16.433		3.3661	0.0679%	33662	15866	2.1 1			1.0000E-04
46	16.867		1.3247	0.0267%	13247	5208	2.5 1			1.0000E-04
47	16.967		2.1902	0.0442%	21902	9854	2.2 1			1.0000E-04
48	17.500	MOTOR OIL	0.7260	0.0147%	10051	3614	2.8 1	0	0	7.2227E-05
49	17.717		0.5811	0.0117%	5811	1914	3.0 1			1.0000E-04
50	18.017		0.3600	0.0073%	3601	1454	2.5 1			1.0000E-04
51	18.467		0.3689	0.0074%	3690	1473	2.5 1			1.0000E-04
52	19.233		0.3941	0.0080%	3941	1160	3.4 1			1.0000E-04
	20.083		0.4218	0.0085%	4218	1308	3.2 1			1.0000E-04
	21.017		0.4075	0.0082%	4075	976	4.2 1			1.0000E-04
55	23.617		0.2680	0.0054%	2681	729	3.7 1			1.0000E-04
56	24.767		3.4187	0.0690%	34188	18880	1.8 1			1.0000E-04

002323

TOTAL AMOUNT = 4954.2402

Data File = L:AG10-28.PTS Printed on 07-16-1996 at 16:26:26
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



002324

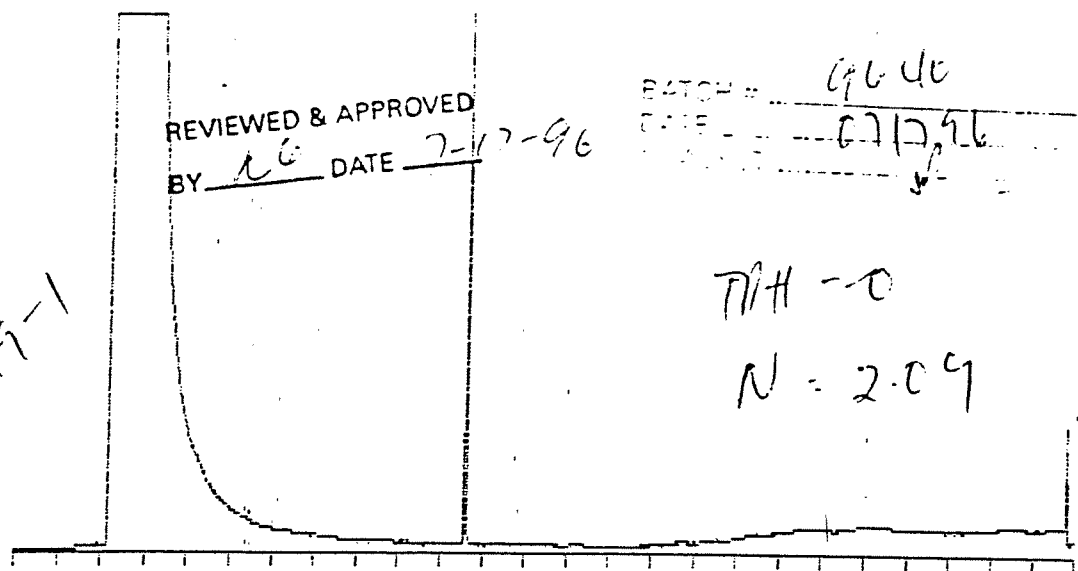
Fuel. TOT
07-1219-1

REVIEWED & APPROVED
BY LC DATE 7-17-96

BATCH # 9646
DATE 07/17/96

PH - 0
N - 2.09

m⁴/L



[Interface 2] 0-25 Min Scale: 100 Mu
*M BLANK Processed: 07-16-1996 17:36:08, segment 1, cycle 30
RAW DATA SAVED IN FILE L:AG10-30.PTS

***** AREA PERCENT REPORT *****

***** 07-16-1996 17:36:18 Version 5.1.5 *****
* Sample Name: *M BLANK B#9640/960715/25ML>5ML
Data File: L:AG10-30
* Date: 07-16-1996 17:11:04 Method: DIESEL-2
* Interface: 2 Cycle#: 30 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

Instrument Type: 3400 536-01 Column Type: DB5/.25u
* Solvent Description: HE 2ML/MIN
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS;NAPTHA;DIESEL;0-TERPH 05/29/96

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	49068836	99.23790	0	993978	100.000	49.4
2	10.583	340921	0.6895	1	164418	0.695	2.1
3	24.767	35904	0.0726	1	19513	0.073	1.8

Total Area: 49445660 Area Rejected: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 07-16-1996 17:36:18 Version 5.1.5 *****
* Sample Name: *M BLANK B#9640/960715/25ML>5ML
Data File: L:AG10-30
* Date: 07-16-1996 17:11:04 Method: DIESEL-2 06-28-1996 14:32:23 # 694
* Interface: 2 Cycle#: 30 Operator JP Channel#: 0 Vial#: N.A.
Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

```

* Solvent Description: HE 2ML/MIN
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS:NAPTHA:DIESEL:O-TERPH 05/29/96
*****
Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1:000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

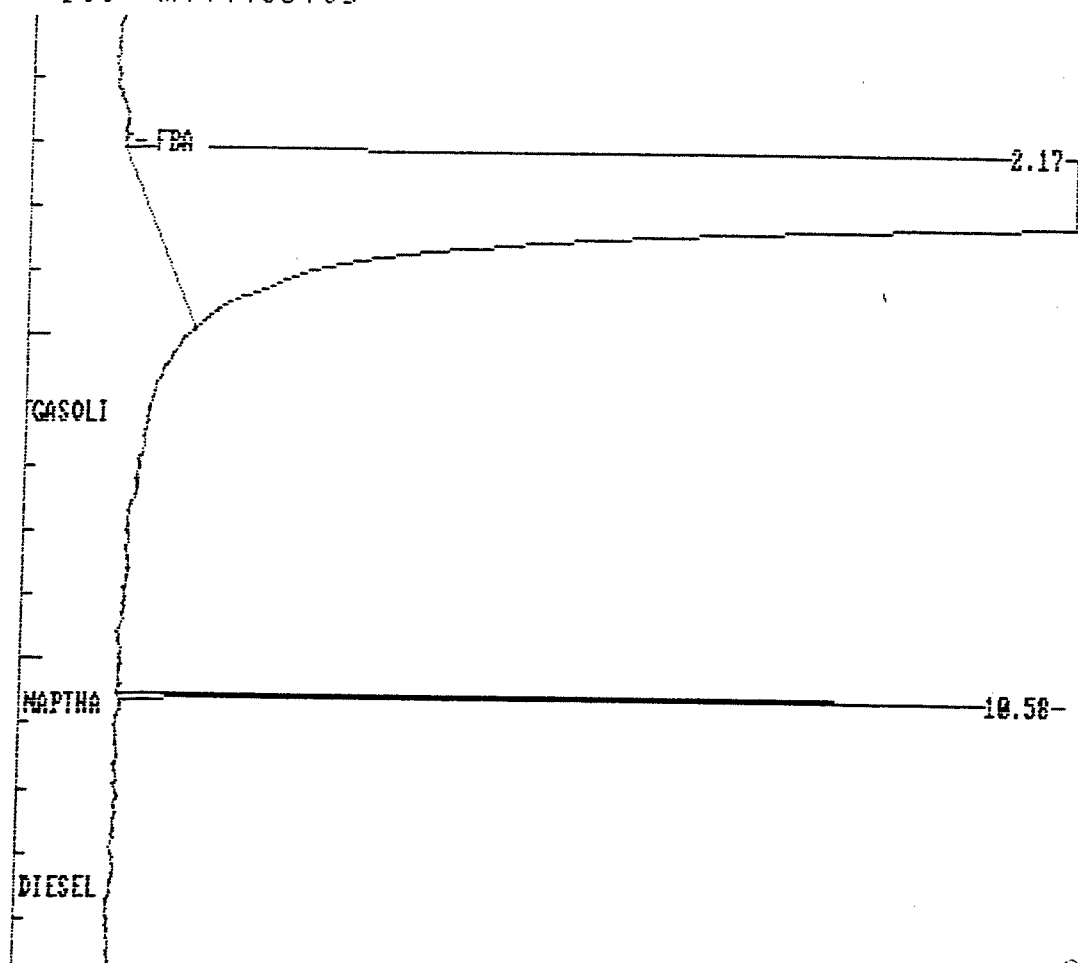
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.167		4906.8833	99.7142%	49068836	993978	49.4 0V			1.0000E-04
2	10.583	NAPTHALENE	10.4745	0.2129%	340921	164418	2.1 1	0	-.9051	3.0724E-05
3	24.767		3.5904	0.0730%	35904	19513	1.8 1			1.0000E-04

TOTAL AMOUNT = 4920.9482

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.72	O-TERPHENYL
HYDRAULIC OIL	16.00	HYDRAULIC OIL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AG10-30.PTS Printed on 07-16-1996 at 17:36:18
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



0-TEMP

MOTOR

-24.77

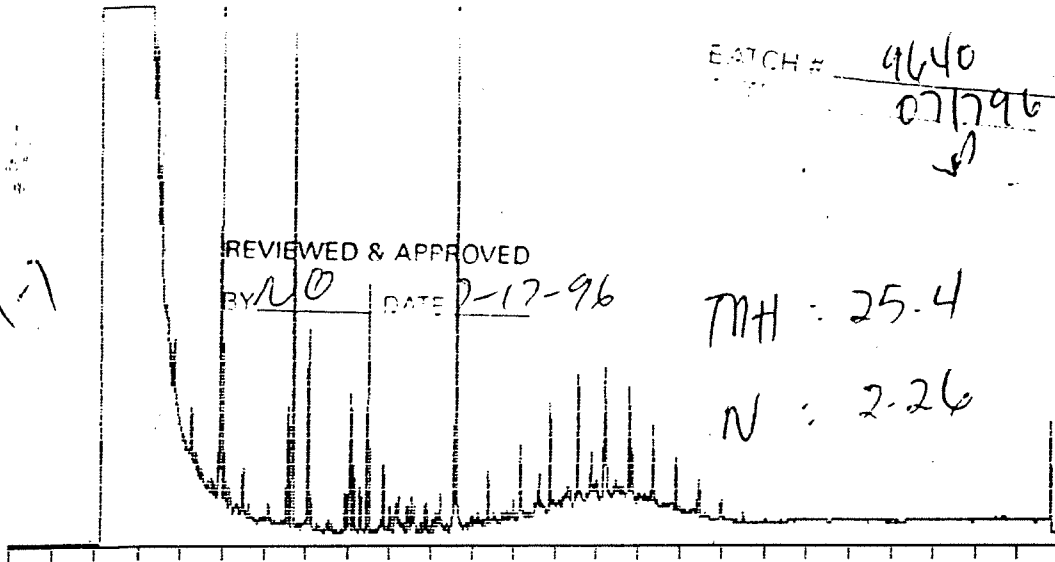
BATCH # 4640
07/17/96
✓

Final Tot
07-2451-7

REVIEWED & APPROVED
BY MO DATE 7-17-96

TH : 25.4

N : 2.26



[Interface 2] 0-25 Min Scale: 100 Mu
*LCS-1 Processed: 07-16-1996 18:11:04, segment 2, cycle 31
RAW DATA SAVED IN FILE L:AG10-31.PTS

***** AREA PERCENT REPORT *****

***** 07-16-1996 18:11:14 Version 5.1.5 *****

* Sample Name: *LCS-1 B#9640/960715/25ML>5ML Data File: L:AG10-31 *

* Date: 07-16-1996 17:46:01 Method: DIESEL-2 *

* Interface: 2 Cycle#: 31 Operator JF Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

Instrument Type: 3400 536-01 Column Type: DB5/.25u *

* Solvent Description: HE 2ML/MIN *

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *

* Detector 0: FID Detector 1: *

* Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96 *

Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	2.167	48010184	96.147900	0	993864	100.000	48.3
2	4.233	13083	0.0262	1	9308	0.027	1.4
3	4.950	221258	0.4431	1	92757	0.461	2.6
4	5.317	9132	0.0183	1	1816	0.019	5.0
5	5.500	21259	0.0426	1	8564	0.044	2.5
6	5.617	6894	0.0138	1	2356	0.014	2.9
7	5.883	2778	0.0056	1	931	0.006	3.0
8	6.100	8797	0.0176	1	3279	0.018	2.7
9	6.567	53204	0.1065	1	21345	0.111	2.5
10	6.683	182512	0.3655	1	93412	0.380	2.0
11	6.983	3304	0.0066	1	890	0.007	3.7
12	7.067	81199	0.1626	1	36111	0.169	2.2
13	7.533	6234	0.0125	1	1828	0.013	3.4
14	7.933	13917	0.0279	1	6565	0.029	2.1
15	8.050	85672	0.1716	1	24855	0.178	3.4
16	8.300	18809	0.0377	1	8005	0.039	2.3
17	8.467	89220	0.1787	1	45384	0.186	2.0

Gas: 728052
(5-1977410) / 5

7.57

TH = 17.85 + 7.57 = 24.42 002328

18	8.683	2714	0.0054	1	630	0.006	4.3
19	8.833	24961	0.0500	1	11957	0.052	2.1
20	9.000	10525	0.0211	1	4186	0.022	2.5
21	9.133	10879	0.0218	1	4278	0.023	2.5
22	9.217	12079	0.0242	1	4823	0.025	2.5
23	9.517	22814	0.0457	1	5676	0.048	4.0
24	9.600	6951	0.0139	1	3622	0.014	1.9
25	9.900	24655	0.0494	1	5340	0.051	4.6
26	10.100	11967	0.0240	1	2807	0.025	4.3
27	10.233	17968	0.0360	1	6223	0.037	2.9
28	10.583	368317	0.7376	1	152318	0.767	2.4
29	10.983	7389	0.0148	1	1713	0.015	4.3
30	11.167	6558	0.0131	1	2230	0.014	2.9
31	11.283	3873	0.0078	1	1464	0.008	2.6
32	11.383	31148	0.0624	1	9992	0.065	3.1
33	11.983	29295	0.0587	1	3597	0.061	8.1
34	12.150	33327	0.0667	1	13461	0.069	2.5
35	12.600	28673	0.0574	1	6707	0.060	4.3
36	12.867	45791	0.0917	1	19462	0.095	2.4
37	13.333	28770	0.0576	1	3722	0.060	7.7
38	13.533	60719	0.1216	1	23467	0.126	2.6
39	13.850	19530	0.0391	1	7576	0.041	2.6
40	14.000	4074	0.0082	1	2502	0.008	1.6
41	14.167	84594	0.1694	1	23485	0.176	3.6
42	14.450	17868	0.0358	1	2242	0.037	8.0
43	14.783	64459	0.1291	1	19835	0.134	3.2
44	15.033	5746	0.0115	1	1381	0.012	4.2
45	15.350	33255	0.0666	1	14075	0.069	2.4
47	15.917	22352	0.0448	1	9506	0.047	2.4
48	16.317	2167	0.0043	1	589	0.005	3.7
49	16.433	13835	0.0277	1	5915	0.029	2.3
50	16.983	8749	0.0175	1	3669	0.018	2.4
51	17.500	4256	0.0085	1	1754	0.009	2.4
52	24.767	36001	0.0721	1	19004	0.075	1.9

Total Area: 49933696 Area Reject: 2000 One sample per 1.000 sec

 ***** 07-16-1996 18:11:15 Version 5.1.5 *****
 * Sample Name: *LCS-1 B#9640/960715/25ML>5ML

Data File: L:AG10-31
 * Date: 07-16-1996 17:46:01 Method: DIESEL-2 06-28-1996 14:32:23 # 694 *
 * Interface: 2 Cycle#: 31 Operator JF Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 0: FID Detector 1: *
 * Misc. Information: GAS:NAPHTHA:DIESEL;O-TERPH 05/29/96 *

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
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002329

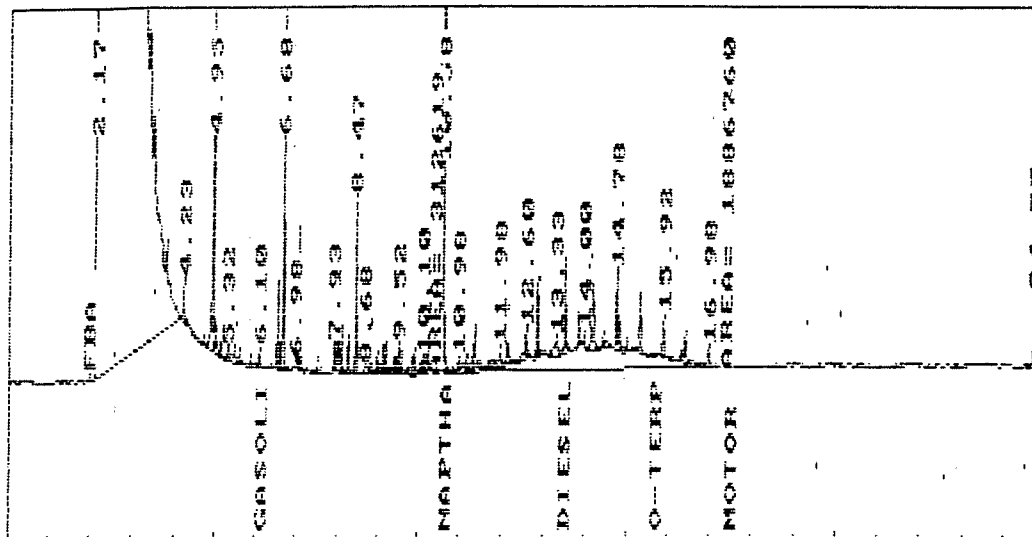
START TIME= 8.433 START HEIGHT= 7259
 STOP TIME= 10.533 STOP HEIGHT= 7259
 AREA = 312619
 START TIME= 10.633 START HEIGHT= 7259
 STOP TIME= 17.550 STOP HEIGHT= 8876
 ZA = 1886760

Plot of data file: L:AG10-31.PTS

Date: 07-17-1996 Time: 14:00:37

Sample Name: *LCS-1 B#9640

Start Time= 0.02 Stop Time = 25.03 Min. Scale= 4949 Max. Scale= 104949



$$= 2199379 \left(4.585 \times 10^5 \right) \left(\frac{5}{75} \right)$$

$$= 17.85$$

1	2.167	4801.0181	0.7290%	48010184	993864	48.3 00			1.0000E-04
2	4.233	1.5063	0.0264%	13083	9308	1.4 1			1.0000E-04
3	4.950	22.1257	0.4458%	221258	92757	2.4 1			1.0000E-04
4	5.317	0.9132	0.0184%	9132	1816	5.0 1			1.0000E-04
5	5.500	2.1259	0.0428%	21259	8564	2.5 1			1.0000E-04
	5.617	0.6894	0.0139%	6894	2356	2.9 1			1.0000E-04
7	5.883	0.2778	0.0056%	2778	931	3.0 1			1.0000E-04
8	6.100 GASOLINE TO C10	0.4572	0.0092%	8797	3279	2.7 1	0	-1.134	5.1977E-05
9	6.567	5.3204	0.1072%	53204	21345	2.5 1			1.0000E-04
10	6.683	18.2512	0.3677%	182512	93412	2.0 1			1.0000E-04
11	6.983	0.3304	0.0067%	3304	890	3.7 1			1.0000E-04
12	7.067	8.1199	0.1636%	81199	36111	2.2 1			1.0000E-04
13	7.533	0.6234	0.0126%	6234	1828	3.4 1			1.0000E-04
14	7.933	1.3916	0.0280%	13917	6565	2.1 1			1.0000E-04
15	8.050	8.5672	0.1726%	85672	24855	3.4 1			1.0000E-04
16	8.300	1.8809	0.0379%	18809	8005	2.3 1			1.0000E-04
17	8.467	8.9219	0.1798%	89220	45384	2.0 1			1.0000E-04
18	8.683	0.2714	0.0055%	2714	630	4.3 1			1.0000E-04
19	8.833	2.4961	0.0503%	24961	11957	2.1 1			1.0000E-04
20	9.000	1.0525	0.0212%	10525	4186	2.5 1			1.0000E-04
21	9.133	1.0878	0.0219%	10879	4278	2.5 1			1.0000E-04
22	9.217	1.2078	0.0243%	12079	4823	2.5 1			1.0000E-04
23	9.517	2.2814	0.0460%	22814	5676	4.0 1			1.0000E-04
24	9.600	0.6951	0.0140%	6951	3622	1.9 1			1.0000E-04
25	9.900	2.4655	0.0497%	24655	5340	4.6 1			1.0000E-04
26	10.100	1.1967	0.0241%	11967	2807	4.3 1			1.0000E-04
27	10.233	1.7967	0.0362%	17968	6223	2.9 1			1.0000E-04
28	10.583 NAPHTHALENE	11.3162	0.2280%	368317	152318	2.4 1	0	-1.9051	3.0724E-05
29	10.983	0.7389	0.0149%	7389	1713	4.3 1			1.0000E-04
30	11.167	0.6557	0.0132%	6558	2230	2.9 1			1.0000E-04
	11.283	0.3873	0.0078%	3873	1464	2.6 1			1.0000E-04
31	11.383	3.1148	0.0628%	31148	9992	3.1 1			1.0000E-04
33	11.983	2.9295	0.0590%	29295	3597	8.1 1			1.0000E-04
34	12.150	3.3327	0.0671%	33327	13461	2.5 1			1.0000E-04
35	12.600	2.8673	0.0578%	28673	6707	4.3 1			1.0000E-04
36	12.867	4.5791	0.0923%	45791	19462	2.4 1			1.0000E-04
37	13.333	2.8770	0.0580%	28770	3722	7.7 1			1.0000E-04
38	13.533 DIESEL C10-C25	2.4643	0.0496%	60719	23467	2.6 1	0	1.2469	4.0585E-05
39	13.850	1.9530	0.0393%	19530	7576	2.6 1			1.0000E-04
40	14.000	0.4074	0.0082%	4074	2502	1.6 1			1.0000E-04
41	14.167	8.4594	0.1704%	84594	23485	3.6 1			1.0000E-04
42	14.450	1.7868	0.0360%	17868	2242	8.0 1			1.0000E-04
43	14.783	6.4459	0.1299%	64459	19835	3.2 1			1.0000E-04
44	15.033	0.5745	0.0116%	5746	1381	4.2 1			1.0000E-04
45	15.350	3.3255	0.0670%	33255	14075	2.4 1			1.0000E-04
47	15.917 HYDRAULIC OIL	1.8979	0.0382%	22352	9506	2.4 1	0	-1.5208	8.4912E-05
48	16.317	0.2167	0.0044%	2167	589	3.7 1			1.0000E-04
49	16.433	1.3834	0.0279%	13835	5915	2.3 1			1.0000E-04
50	16.983	0.8749	0.0176%	8749	3669	2.4 1			1.0000E-04
51	17.500 MOTOR OIL	0.3074	0.0062%	4256	1754	2.4 1	0	0	7.2227E-05
52	24.767	3.6001	0.0725%	36001	19004	1.9 1			1.0000E-04

TOTAL AMOUNT = 4963.3701

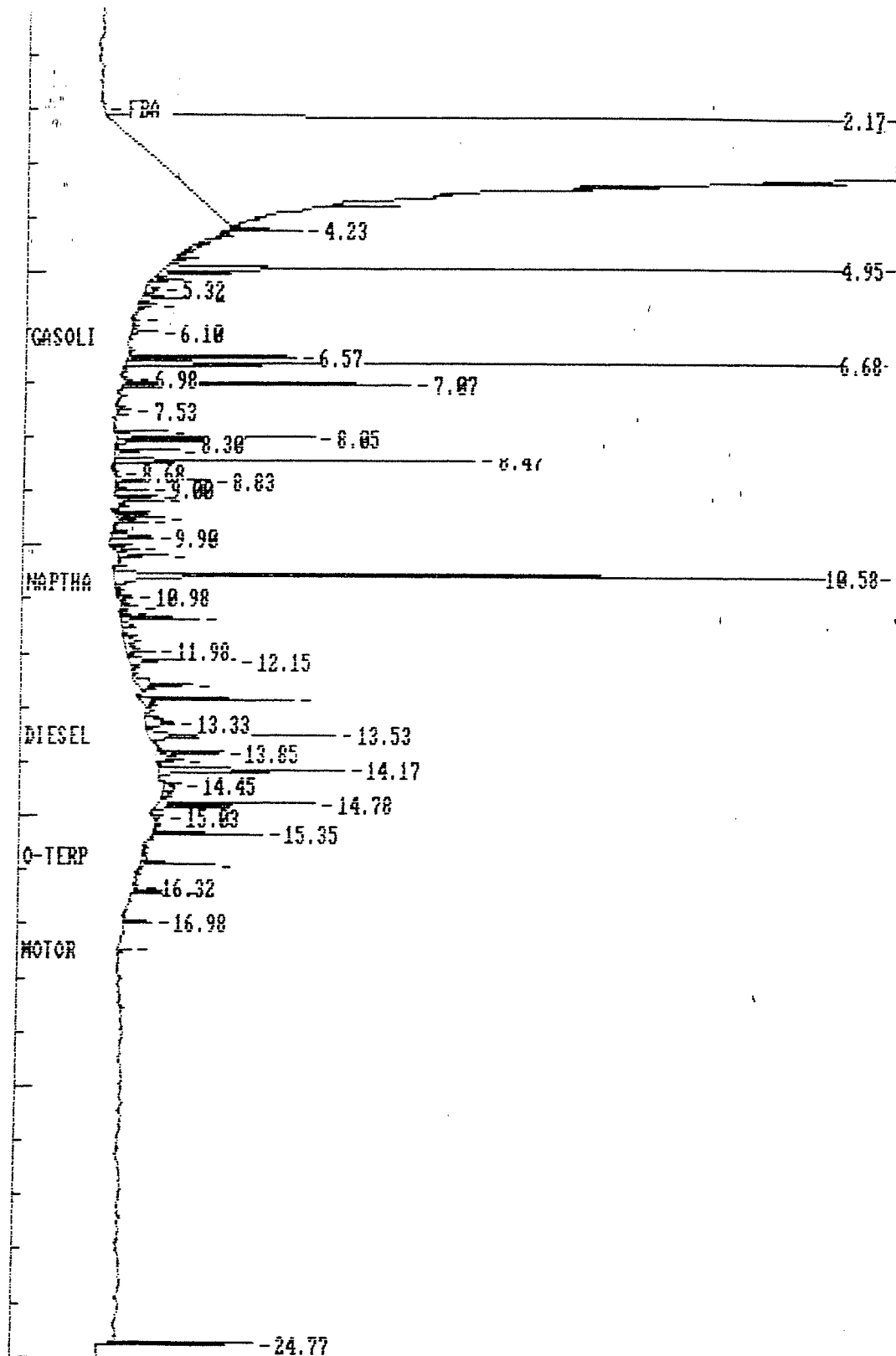
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
TERPHENYL	15.72	O-TERPHENYL

Data File = L:AG10-31.PTS Printed on 07-16-1996 at 18:11:16

002331

Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



002332

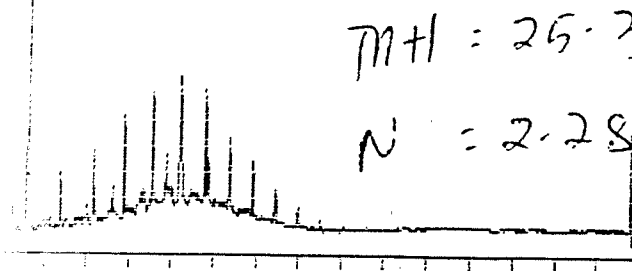
Free 1.701
07-24-96

PATCH # 9640
DATE 07/27/96
TIME 11:31

MOVED
7-17-96

M+1 = 25.3

N = 2.28



[Interface 2
*LCS-2 P
RAW DATA SAV

0.00
19:45:53, segment 3, cycle 32
RTS

INCENT REPORT

* Sample Name: 9640/960715/25ML>5ML
* Date: 07-1
* Interface:
* Starting P:

* Instrument:
*
* Conditions:
*
* Misc. Info:

Starting Del

9646:03 Version 5.1.5 *****
Data File: L:AG10-32
S: DIESEL-2
Generator JP Channel#: 0 Vial#: N.A.
Threshold: 10 Area Threshold: 1000

Column Type: DB5/.25u
FLOW 2ML/MIN
HOLD 300-6/MIN-16.25MIN HOLD
Detector 1:
DIESEL;O-TERPH 05/29/96

Run Time: 25.00

Pk No.	Ret Time	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	100	994227	100.000	48.6
2	4.233	1	8883	0.060	3.2
3	4.950	1	90486	0.466	2.5
4	5.317	1	1725	0.018	5.7
5	5.500	1	9655	0.038	1.9
6	5.617	1	1808	0.011	3.1
7	5.983	1	1104	0.005	2.1
8	6.117	1	3500	0.029	4.0
9	6.567	1	24487	0.115	2.3
10	6.683	1	91097	0.388	2.1
11	7.067	1	40955	0.174	2.0
12	7.533	1	1851	0.019	5.0
13	7.950	1	6527	0.029	2.2
14	8.050	1	27506	0.187	3.3
15	8.300	1	9248	0.040	2.1
16	8.467	1	45740	0.190	2.0
17	8.833	1	11893	0.053	2.2

762744
(5.19774u) (5/25)
= 7.93

002333

7.9 + 7.93 = 25.32

18	9.017	7329	0.0146	1	3733	0.015	2.0
19	9.150	10037	0.0200	1	3785	0.021	2.7
20	9.217	11524	0.0229	1	5235	0.024	2.2
21	9.333	2903	0.0058	1	1779	0.006	1.6
22	9.517	20295	0.0404	1	4965	0.042	4.1
23	9.600	7765	0.0155	1	3920	0.016	2.0
24	9.900	26801	0.0533	1	5619	0.056	4.8
25	10.033	5076	0.0101	1	2377	0.011	2.1
26	10.117	8936	0.0178	1	3148	0.019	2.8
27	10.233	25526	0.0508	1	6887	0.053	3.7
28	10.583	371148	0.7386	1	144900	0.769	2.6
29	10.983	6580	0.0131	1	1807	0.014	3.6
30	11.167	4880	0.0097	1	2021	0.010	2.4
31	11.283	2992	0.0060	1	1155	0.006	2.6
32	11.383	33150	0.0660	1	10261	0.069	3.2
33	11.983	29026	0.0578	1	3536	0.060	8.2
34	12.150	33050	0.0658	1	13251	0.068	2.5
35	12.600	36830	0.0733	1	6512	0.076	5.7
36	12.867	42874	0.0853	1	18743	0.089	2.3
37	13.333	29680	0.0591	1	3886	0.061	7.6
38	13.533	57626	0.1147	1	21065	0.119	2.7
39	13.867	42933	0.0854	1	8968	0.089	4.8
40	14.183	78343	0.1559	1	22842	0.162	3.4
41	14.617	4427	0.0088	1	1487	0.009	3.0
42	14.783	65269	0.1299	1	20940	0.135	3.1
43	15.033	4980	0.0099	1	1286	0.010	3.9
44	15.367	39441	0.0785	1	13355	0.082	3.0
45	15.600	3478	0.0069	1	1102	0.007	3.2
46	15.917	21019	0.0418	1	9934	0.044	2.1
47	16.450	13719	0.0273	1	5912	0.028	2.3
48	16.983	7435	0.0148	1	3574	0.015	2.1
49	17.500	5422	0.0108	1	1789	0.011	3.0
50	24.767	32614	0.0649	1	18618	0.068	1.8

Total Area: 50247852 Area Reject: 2000 One sample per 1.000 sec.

 * Sample Name: *LCS-2 B#9640/960715/25ML>5ML

Data File: L:AG10-32

* Date: 07-16-1996 18:20:50 Method: DIESEL-2 06-28-1996 14:32:23 # 694 *
 * Interface: 2 Cycle#: 32 Operator JF Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 0: FID Detector 1: *
 * Misc. Information: GAS:NAPTHA:DIESEL:O-TERPH 05/29/96 *

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
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002334

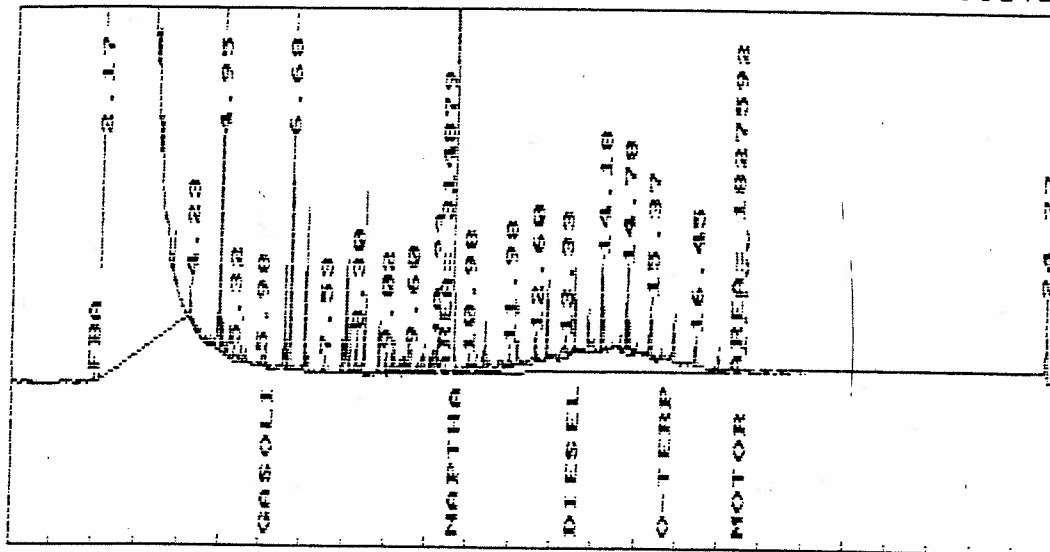
START TIME= 8.433 START HEIGHT= 7820
 STOP TIME= 10.533 STOP HEIGHT= 7820
 AREA = 314879
 START TIME= 10.633 START HEIGHT= 7820
 STOP TIME= 17.550 STOP HEIGHT= 9437
 EA = 1827592

Plot of data file: L:AG10-52.PTS

Date: 07-17-1996 Time: 14:01:29

Sample Name: *LCS-2 B#9640

Start Time= 0.02 Stop Time = 25.03 Min. Scale= 4800 Max. Scale= 104800



$$T/H: 2142471 (4.55 \times 10^5) \left(\frac{5}{25} \right)$$

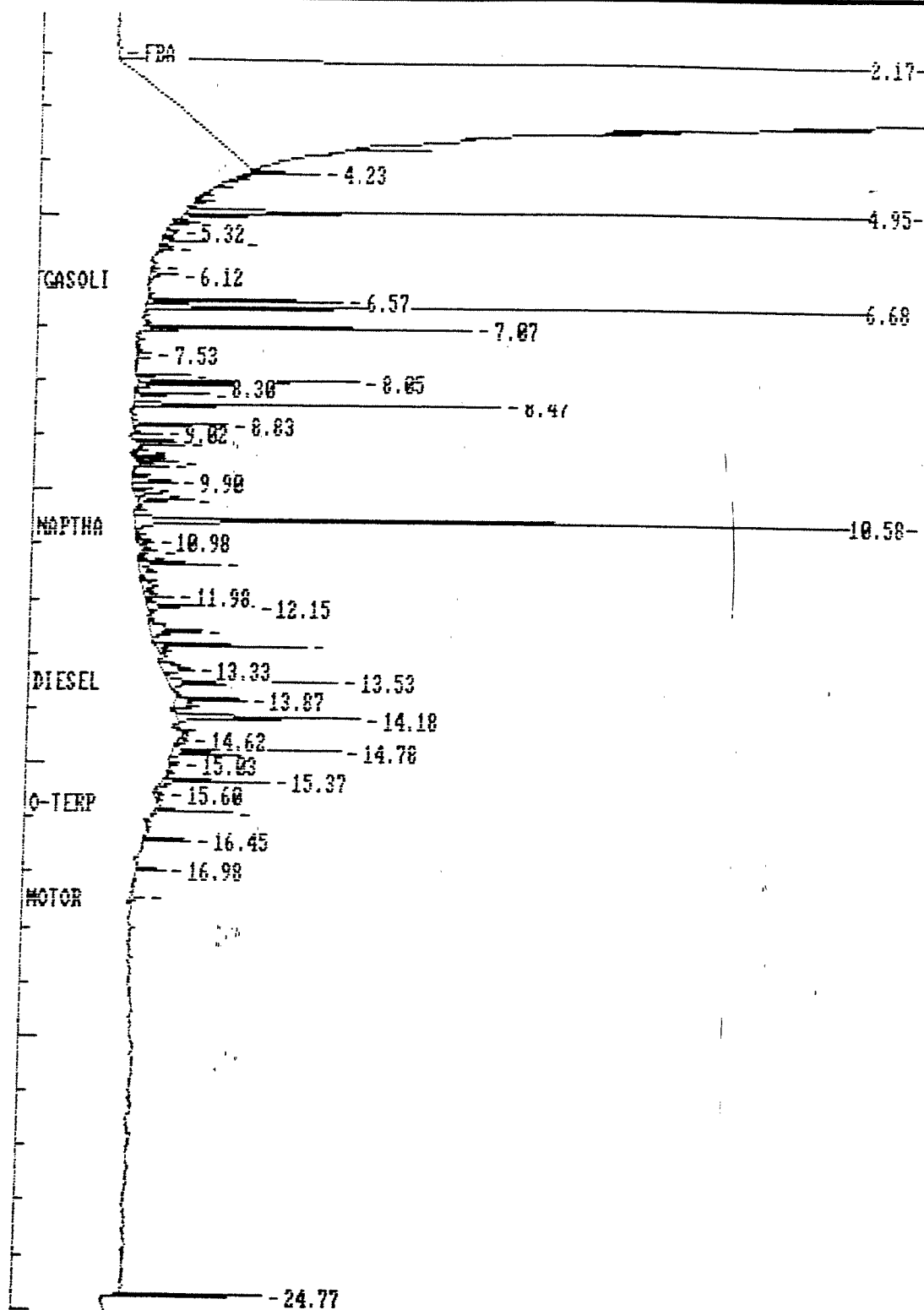
$$= 17.39$$

1	2.167	4827.4409	96.6594%	48274412	994227	48.6	0V			1.0000E-04
2	4.233	2.8794	0.0577%	28794	8883	3.2	1			1.0000E-04
3	4.950	22.4992	0.4505%	224992	90486	2.5	1			1.0000E-04
4	5.317	0.8730	0.0175%	8730	1725	5.1	1			1.0000E-04
5	5.500	1.8236	0.0365%	18236	9655	1.9	1			1.0000E-04
	5.617	0.5533	0.0111%	5533	1808	3.1	1			1.0000E-04
7	5.983	0.2329	0.0047%	2329	1104	2.1	1			1.0000E-04
8	6.117 GASOLINE TO C10	0.7256	0.0145%	13960	3500	4.0	1	0	- .8644	5.1977E-05
9	6.567	5.5378	0.1109%	55378	24487	2.3	1			1.0000E-04
10	6.683	18.7487	0.3754%	187487	91097	2.1	1			1.0000E-04
11	7.067	8.3921	0.1680%	83921	40955	2.0	1			1.0000E-04
12	7.533	0.9291	0.0186%	9291	1851	5.0	1			1.0000E-04
13	7.950	1.4172	0.0284%	14173	6527	2.2	1			1.0000E-04
14	8.050	9.0401	0.1810%	90401	27506	3.3	1			1.0000E-04
15	8.300	1.9518	0.0391%	19519	9248	2.1	1			1.0000E-04
16	8.467	9.1951	0.1841%	91952	45740	2.0	1			1.0000E-04
17	8.833	2.5650	0.0514%	25650	11893	2.2	1			1.0000E-04
18	9.017	0.7328	0.0147%	7329	3733	2.0	1			1.0000E-04
19	9.150	1.0037	0.0201%	10037	3785	2.7	1			1.0000E-04
20	9.217	1.1524	0.0231%	11524	5235	2.2	1			1.0000E-04
21	9.333	0.2903	0.0058%	2903	1779	1.6	1			1.0000E-04
22	9.517	2.0295	0.0406%	20295	4965	4.1	1			1.0000E-04
23	9.600	0.7764	0.0155%	7765	3920	2.0	1			1.0000E-04
24	9.900	2.6801	0.0537%	26801	5619	4.8	1			1.0000E-04
25	10.033	0.5076	0.0102%	5076	2377	2.1	1			1.0000E-04
26	10.117	0.8936	0.0179%	8936	3148	2.8	1			1.0000E-04
27	10.233	2.5526	0.0511%	25526	6887	3.7	1			1.0000E-04
28	10.583 NAPHTHALENE	11.4032	0.2283%	371148	144900	2.6	1	0	- .9051	3.0724E-05
29	10.983	0.6579	0.0132%	6580	1807	3.6	1			1.0000E-04
30	11.167	0.4880	0.0098%	4880	2021	2.4	1			1.0000E-04
	11.283	0.2992	0.0060%	2992	1155	2.6	1			1.0000E-04
	11.383	3.3150	0.0664%	33150	10261	3.2	1			1.0000E-04
33	11.983	2.9026	0.0581%	29026	3536	8.2	1			1.0000E-04
34	12.150	3.3050	0.0662%	33050	13251	2.5	1			1.0000E-04
35	12.600	3.6830	0.0737%	36830	6512	5.7	1			1.0000E-04
36	12.867	4.2874	0.0858%	42874	18743	2.3	1			1.0000E-04
37	13.333	2.9680	0.0594%	29680	3886	7.6	1			1.0000E-04
38	13.533 DIESEL C10-C25	2.3388	0.0468%	57626	21065	2.7	1	0	.2469	4.0585E-05
39	13.867	4.2933	0.0860%	42933	8968	4.8	1			1.0000E-04
40	14.183	7.8343	0.1569%	78343	22842	3.4	1			1.0000E-04
41	14.617	0.4427	0.0089%	4427	1487	3.0	1			1.0000E-04
42	14.783	6.5269	0.1307%	65269	20940	5.1	1			1.0000E-04
43	15.033	0.4980	0.0100%	4980	1286	3.9	1			1.0000E-04
44	15.367	3.9441	0.0790%	39441	13355	3.0	1			1.0000E-04
45	15.600 O-TERPHENYL	0.1127	0.0023%	3478	1102	3.2	1	0	- .7633	3.2408E-05
46	15.917 HYDRAULIC OIL	1.7847	0.0357%	21019	9934	2.1	1	0	- .5208	8.4912E-05
47	16.450	1.3719	0.0275%	13719	5912	2.3	1			1.0000E-04
48	16.983	0.7435	0.0149%	7435	3574	2.1	1			1.0000E-04
49	17.500 MOTOR OIL	0.3916	0.0078%	5422	1789	3.0	1	0	0	7.2227E-05
50	24.767	3.2613	0.0653%	32614	18618	1.8	1			1.0000E-04

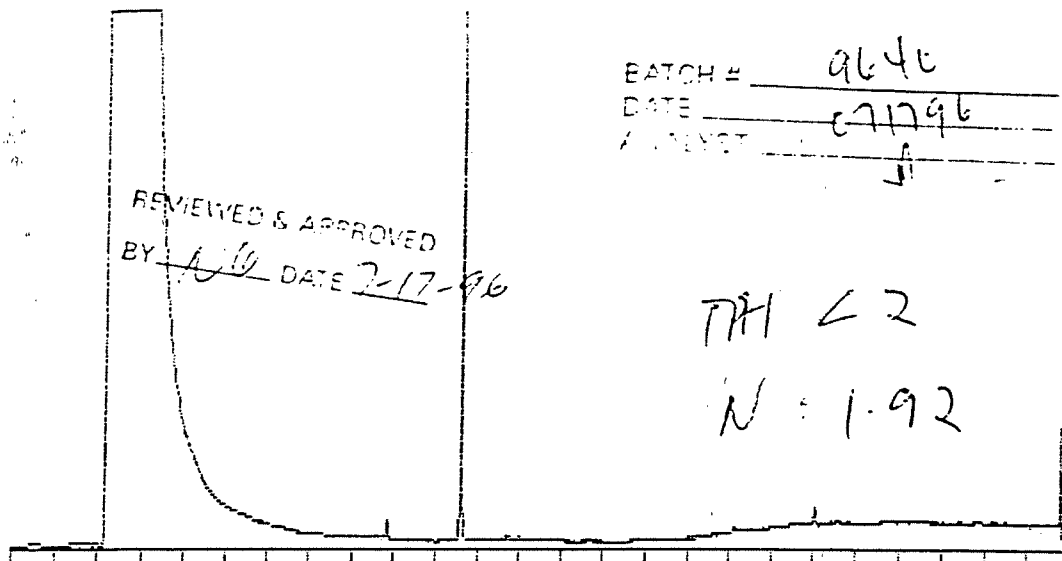
TOTAL AMOUNT = 4994.2778

Data File = L:AG10-32.PTS Printed on 07-16-1996 at 18:46:05
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Range: 100 millivolts

002336



002337



BATCH # 9640
DATE 07-17-96
ANALYST JF

REVIEWED & APPROVED
BY JF DATE 7-17-96

PHI < 2

N = 1.92

mg/L

[Interface 2] 0-25 Min Scale: 100 Mu

*G9607191- Processed: 07-16-1996 19:55:45, segment 1, cycle 34

RAW DATA SAVED IN FILE L:AG10-34.PTS

***** AREA PERCENT REPORT *****

***** 07-16-1996 19:55:55 Version 5.1.5 *****

* Sample Name: *G9607191-1 B#9640/960715/25ML>5ML

Data File: L:AG10-34

* Date: 07-16-1996 19:30:42 Method: DIESEL-2

* Interface: 2 Cycle#: 34 Operator JF Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS;NAPTHA;DIESEL;0-TERPH 05/29/96

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	48647232	99.237800	994276	100.000	48.9	
2	8.833	7951	0.0162	1	3535	0.016	2.2
3	10.600	312976	0.6385	1	142773	0.643	2.2
4	17.133	5702	0.0116	1	1303	0.012	4.4
5	19.033	11232	0.0229	1	3128	0.023	3.6
6	24.767	35790	0.0730	1	18987	0.074	1.9

Total Area: 49020884 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 07-16-1996 19:55:55 Version 5.1.5 *****

* Sample Name: *G9607191-1 B#9640/960715/25ML>5ML

Data File: L:AG10-34

* Date: 07-16-1996 19:30:42 Method: DIESEL-2 06-28-1996 14:32:23 # 694

* Interface: 2 Cycle#: 34 Operator JF Channel#: 0 Vial#: N.A.

002338

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u
 * Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 Detector 0: FID Detector 1:
 * Misc. Information: GAS:NAPTHA:DIESEL;D-TERPH 05/29/96

 Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

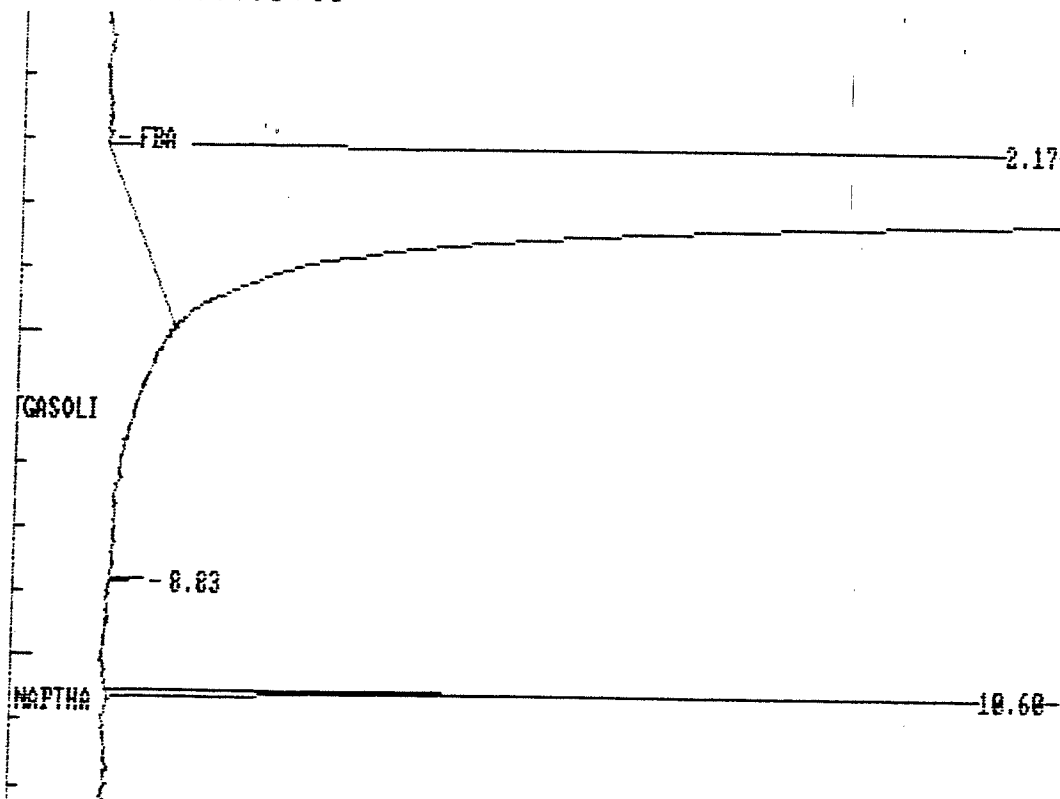
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF. PEAK	% DELTA RET TIME	CONC/AREA
1	2.167		4864.7231	99.6819%	48647232	994276	48.9 OV			1.0000E-04
2	8.833		0.7951	0.0163%	7951	3535	2.2 1			1.0000E-04
3	10.600	NAPTHALENE	9.6159	0.1970%	312976	142773	2.2 1	0	-0.7490	3.0724E-05
4	17.133	MDTOR OIL	0.4118	0.0084%	5702	1303	4.4 1	0	-2.095	7.2227E-05
5	19.033		1.1232	0.0230%	11232	3128	3.6 1			1.0000E-04
6	24.767		3.5789	0.0733%	35790	18987	1.9 1			1.0000E-04

TOTAL AMOUNT = 4880.2476

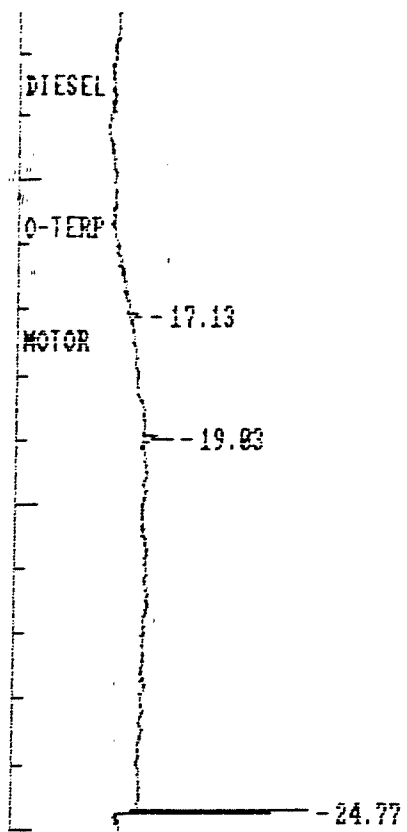
PEAKS NOT FOUND IN THIS RUN

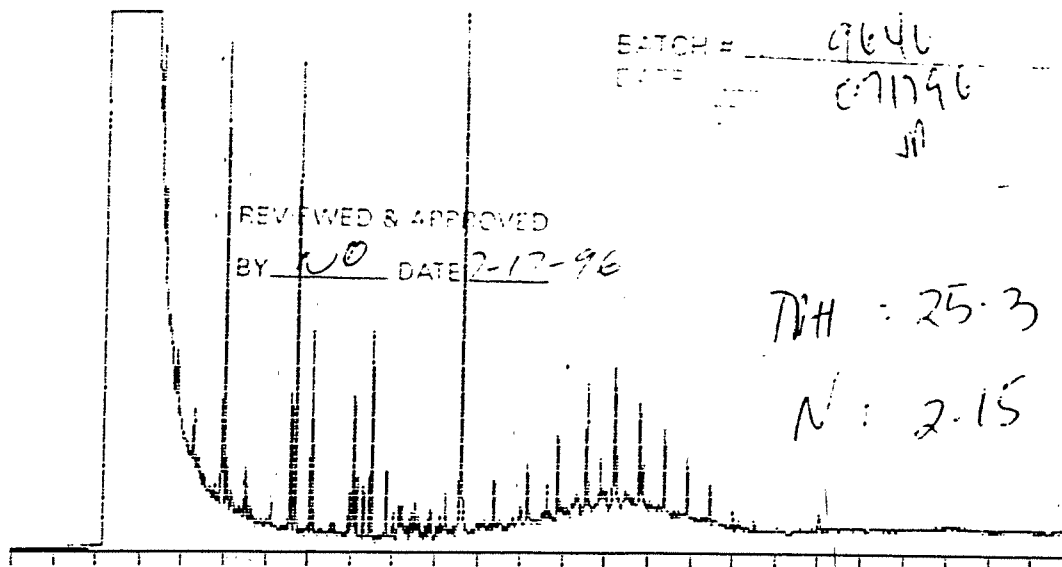
NAME	ADJUSTED RET. TIME.	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.72	O-TERPHENYL
'DRAULIC OIL	16.00	HYDRAULIC OIL

Data File = L:AG10-34.PTS Printed on 07-16-1996 at 19:55:56
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



002339





[Interface 2] 0-25 Min Scale: 100 Mu
 *G9607191- Processed: 07-16-1996 20:30:46, segment 2, cycle 35
 RAW DATA SAVED IN FILE L:AG10-35.PTS

***** AREA PERCENT REPORT *****

***** 07-16-1996 20:30:56 Version 5.1.5 *****

* Sample Name: *G9607191-1S1 B#9640/960715/25ML>5ML

Data File: L:AG10-35

* Date: 07-16-1996 20:05:43 Method: DIESEL-2

* Interface: 2 Cycle#: 35 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS:NAPTHA;DIESEL;O-TERPH 05/29/96

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	46375252	96.02820	0	993257	100.000	46.7
2	3.833	20846	0.0432	1	9705	0.045	2.1
3	4.250	25577	0.0530	1	9555	0.055	2.7
4	4.750	7951	0.0165	1	2660	0.017	2.7
5	4.967	207103	0.4288	1	85462	0.447	2.4
6	5.167	10335	0.0214	1	3813	0.022	2.7
7	5.333	7690	0.0159	1	1611	0.017	4.8
8	5.500	20693	0.0428	1	9354	0.045	2.2
9	5.633	8061	0.0167	1	2583	0.017	3.1
10	6.117	16622	0.0344	1	4097	0.036	4.1
11	6.567	53961	0.1117	1	25116	0.116	2.1
12	6.700	180087	0.3729	1	86795	0.388	2.1
13	7.000	5160	0.0107	1	1053	0.011	4.9
14	7.067	81880	0.1695	1	36921	0.177	2.2
15	7.533	6226	0.0129	1	1853	0.013	3.4
16	7.633	3982	0.0082	1	1951	0.009	2.0
17	7.950	13349	0.0276	1	7510	0.029	1.8

769 584
 (5.1977 x w) (1/2)

8.00

002341

17.25 + 8.00 = 25.25

18	8.050	100061	0.2072	1	24950	0.216	4.0
19	8.483	89184	0.1847	1	37862	0.192	2.4
20	8.683	2980	0.0062	1	902	0.006	3.3
21	8.833	30128	0.0624	1	12036	0.065	2.5
22	9.017	7759	0.0161	1	4461	0.017	1.7
23	9.217	41752	0.0865	1	6064	0.090	6.9
24	9.450	10006	0.0207	1	3810	0.022	2.6
25	9.533	22707	0.0470	1	5594	0.049	4.1
26	9.867	22182	0.0459	1	5299	0.048	4.2
27	10.050	4361	0.0090	1	1790	0.009	2.4
28	10.117	8316	0.0172	1	3343	0.018	2.5
29	10.233	19229	0.0398	1	7018	0.041	2.7
30	10.417	2286	0.0047	1	1330	0.005	1.7
31	10.600	350437	0.7256	1	147025	0.756	2.4
32	11.000	6296	0.0130	1	1560	0.014	4.0
33	11.167	5745	0.0119	1	1727	0.012	3.3
34	11.383	19896	0.0412	1	8787	0.043	2.3
35	11.533	5971	0.0124	1	1715	0.013	3.5
36	11.717	3535	0.0073	1	1356	0.008	2.6
37	12.000	10262	0.0212	1	3429	0.022	3.0
38	12.167	36666	0.0759	1	10831	0.079	3.4
39	12.517	4023	0.0083	1	1137	0.009	3.5
40	12.617	14507	0.0300	1	5898	0.031	2.5
41	12.867	41958	0.0869	1	15085	0.090	2.8
42	13.333	28474	0.0590	1	3644	0.061	7.8
43	13.550	55347	0.1146	1	23021	0.119	2.4
44	13.867	17817	0.0369	1	8033	0.038	2.2
45	14.017	2893	0.0060	1	2144	0.006	1.3
46	14.183	80041	0.1657	1	25122	0.173	3.2
47	14.783	61575	0.1275	1	18665	0.133	3.3
48	15.033	6397	0.0132	1	1612	0.014	4.0
49	15.217	3350	0.0069	1	1050	0.007	3.2
50	15.367	31919	0.0661	1	14797	0.069	2.2
51	15.600	2991	0.0062	1	1006	0.006	3.0
52	15.917	20233	0.0419	1	10333	0.044	2.0
53	16.333	2262	0.0047	1	656	0.005	3.4
54	16.450	13621	0.0282	1	6484	0.029	2.1
55	16.983	8004	0.0166	1	3350	0.017	2.4
56	17.133	5708	0.0118	1	1269	0.012	4.5
57	17.517	3941	0.0082	1	1663	0.008	2.4
58	19.033	8457	0.0175	1	2765	0.018	3.1
59	24.767	35313	0.0731	1	19168	0.076	1.8

Total Area: 48293352 Area Reject: 2000 One sample per 1.000 sec

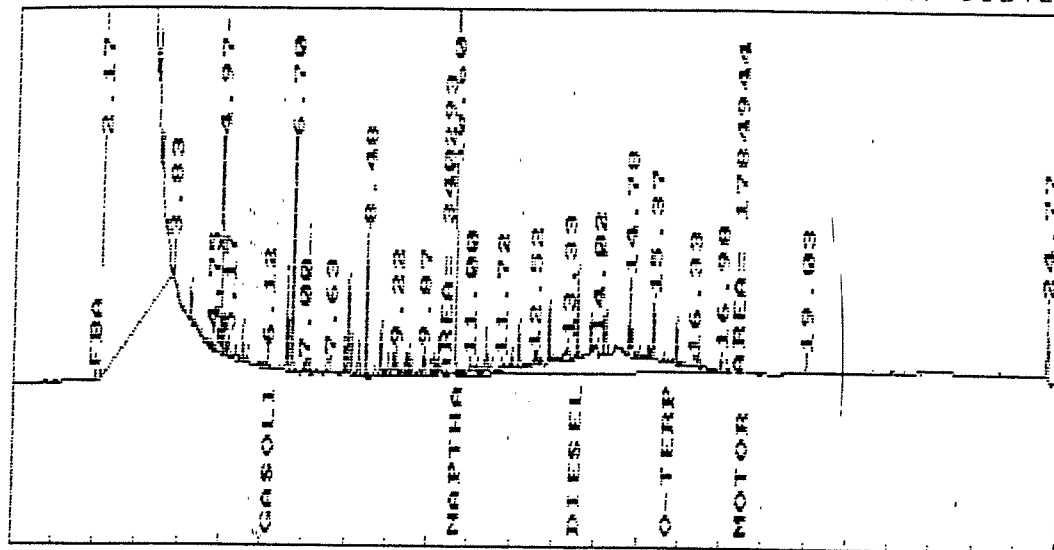
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*****
**          EXTERNAL STANDARD TABLE          **
*****
***** 07-16-1996 20:30:57 Version 5.1.5 *****
* Sample Name: *G9607191-1S1   B#9640/960715/25ML>5ML
                                     Data File: L:AG10-35
* Date: 07-16-1996 20:05:43 Method: DIESEL-2 06-28-1996 14:32:23 # 694
* Interface: 2 Cycle#: 35 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
*****
* Instrument Type: 3400 536-01 Column Type: DB5/.25u
* Solvent Description: HE 2ML/MIN
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS:NAPTHA:DIESEL;O-TERPH 05/29/96
*****

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002342

START TIME= 8.453 START HEIGHT= 7172
 STOP TIME= 10.550 STOP HEIGHT= 7172
 AREA = 340293
 START TIME= 10.650 START HEIGHT= 7172
 STOP TIME= 17.567 STOP HEIGHT= 9058
 AREA = 1784944
 Plot of data file: L:AG10-35.PTS
 Date: 07-17-1996 Time: 14:02:46
 Sample Name: *G9607191-1S1 B#9640
 Start Time= 0.02 Stop Time = 25.03 Min. Scale= 5016 Max. Scale= 105016



$$D = 2125237 / (4.0585 \times 10^5) (0.2)$$

17.25

Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

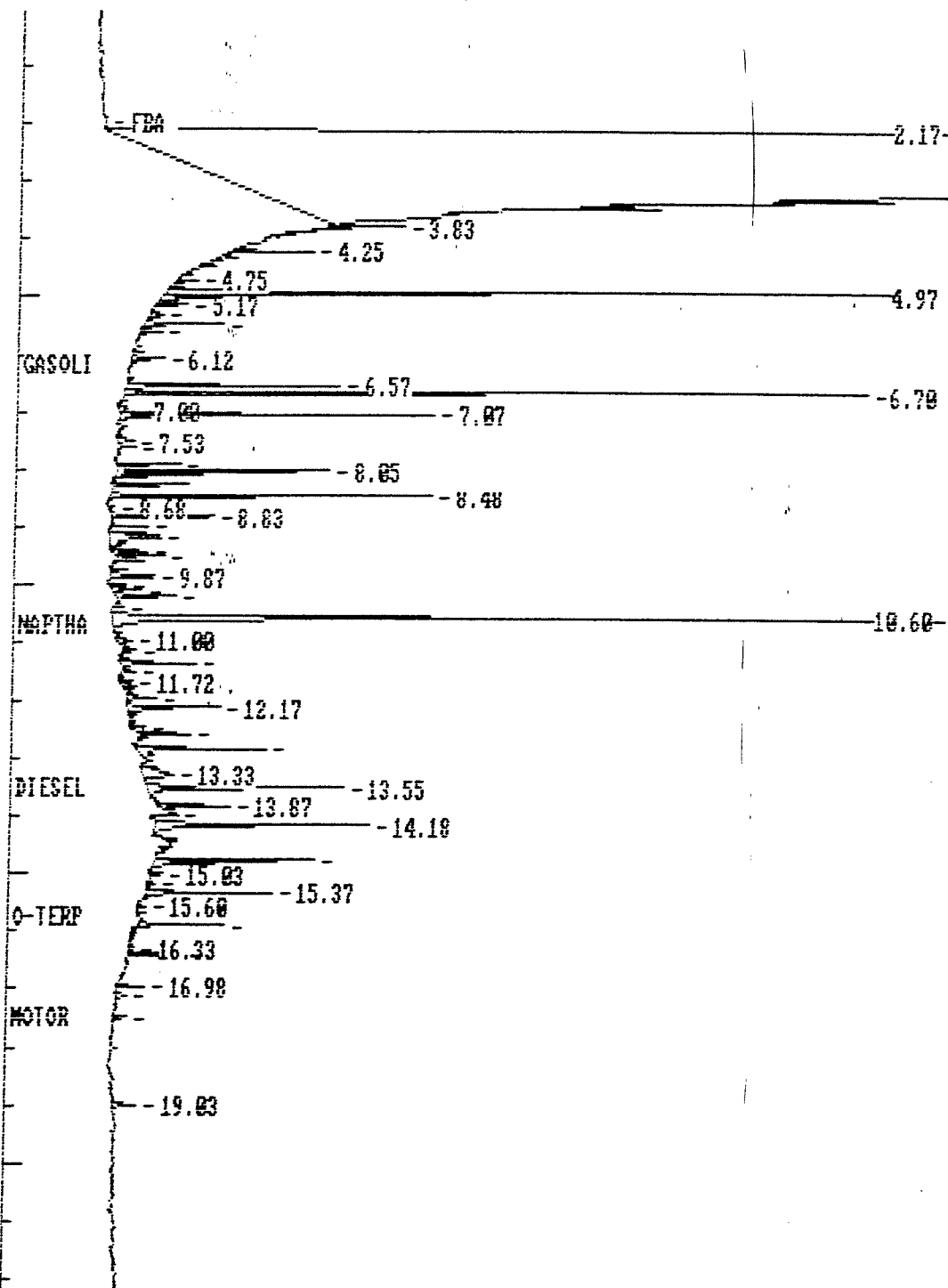
PLAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	-X DELTA RET TIME	CONC/AREA
1	2.167		4637.5249	96.6080%	46375252	993257	46.7 0V			1.0000E-04
2	3.833		2.0846	0.0434%	20846	9705	2.1 1			1.0000E-04
3	4.250		2.5577	0.0533%	25577	9555	2.7 1			1.0000E-04
4	4.750		0.7951	0.0166%	7951	2660	3.0 1			1.0000E-04
5	4.967		20.7103	0.4314%	207103	85462	2.4 1			1.0000E-04
6	5.167		1.0335	0.0215%	10335	3813	2.7 1			1.0000E-04
7	5.333		0.7689	0.0160%	7690	1611	4.8 1			1.0000E-04
8	5.500		2.0693	0.0431%	20693	9354	2.2 1			1.0000E-04
9	5.633		0.8061	0.0168%	8061	2583	3.1 1			1.0000E-04
10	6.117	GASOLINE TO C10	0.8640	0.0180%	16622	4097	4.1 1	0	-0.8644	5.1977E-05
11	6.567		5.3961	0.1124%	53961	25116	2.1 1			1.0000E-04
12	6.700		18.0086	0.3752%	180087	86795	2.1 1			1.0000E-04
13	7.000		0.5160	0.0107%	5160	1053	4.9 1			1.0000E-04
14	7.067		8.1880	0.1706%	81880	36921	2.2 1			1.0000E-04
15	7.533		0.6226	0.0130%	6226	1853	3.4 1			1.0000E-04
16	7.633		0.3982	0.0083%	3982	1951	2.0 1			1.0000E-04
17	7.950		1.3348	0.0278%	13349	7510	1.8 1			1.0000E-04
18	8.050		10.0061	0.2084%	100061	24950	4.0 1			1.0000E-04
19	8.483		8.9184	0.1858%	89184	37862	2.4 1			1.0000E-04
20	8.683		0.2980	0.0062%	2980	902	3.3 1			1.0000E-04
21	8.833		3.0127	0.0628%	30128	12036	2.5 1			1.0000E-04
22	9.017		0.7759	0.0162%	7759	4461	1.7 1			1.0000E-04
	9.217		4.1752	0.0870%	41752	6064	6.9 1			1.0000E-04
24	9.450		1.0006	0.0208%	10006	3810	2.6 1			1.0000E-04
25	9.533		2.2707	0.0473%	22707	5594	4.1 1			1.0000E-04
26	9.867		2.2181	0.0462%	22182	5299	4.2 1			1.0000E-04
27	10.050		0.4361	0.0091%	4361	1790	2.4 1			1.0000E-04
28	10.117		0.8316	0.0173%	8316	3343	2.5 1			1.0000E-04
29	10.235		1.9228	0.0401%	19229	7018	2.7 1			1.0000E-04
30	10.417		0.2286	0.0048%	2286	1330	1.7 1			1.0000E-04
31	10.600	NAPTHALENE	10.7668	0.2243%	350437	147025	2.4 1	0	-0.7490	3.0724E-05
32	11.000		0.6296	0.0131%	6296	1560	4.0 1			1.0000E-04
33	11.167		0.5745	0.0120%	5745	1727	3.3 1			1.0000E-04
34	11.383		1.9896	0.0414%	19896	8787	2.3 1			1.0000E-04
35	11.533		0.5971	0.0124%	5971	1715	3.5 1			1.0000E-04
36	11.717		0.3535	0.0074%	3535	1356	2.6 1			1.0000E-04
37	12.000		1.0262	0.0214%	10262	3429	3.0 1			1.0000E-04
38	12.167		3.6666	0.0764%	36666	10831	3.4 1			1.0000E-04
39	12.517		0.4023	0.0084%	4023	1137	3.5 1			1.0000E-04
40	12.617		1.4507	0.0302%	14507	5898	2.5 1			1.0000E-04
41	12.867		4.1958	0.0874%	41958	15085	2.8 1			1.0000E-04
42	13.333		2.8474	0.0593%	28474	3644	7.8 1			1.0000E-04
43	13.550	DIESEL C10-C25	2.2463	0.0468%	55347	23021	2.4 1	0	0.3703	4.0585E-05
44	13.867		1.7817	0.0371%	17817	8033	2.2 1			1.0000E-04
45	14.017		0.2893	0.0060%	2893	2144	1.3 1			1.0000E-04
46	14.183		8.0041	0.1667%	80041	25122	3.2 1			1.0000E-04
47	14.783		6.1575	0.1283%	61575	18665	3.3 1			1.0000E-04
	15.033		0.6397	0.0133%	6397	1612	4.0 1			1.0000E-04
	15.217		0.3350	0.0070%	3350	1050	3.2 1			1.0000E-04
50	15.367		3.1919	0.0665%	31919	14797	2.2 1			1.0000E-04
51	15.600	O-TERPHENYL	0.0969	0.0020%	2991	1006	3.0 1	0	-0.7633	3.2408E-05

002344

52	15.917	HYDRAULIC OIL	1.7180	0.0558%	20255	10335	2.0	1	0	-5208	8.4912E-05
53	16.333		0.2262	0.0047%	2262	656	3.4	1			1.0000E-04
54	16.450		1.3620	0.0284%	13621	6484	2.1	1			1.0000E-04
55	16.983		0.8004	0.0167%	8004	3550	2.4	1			1.0000E-04
56	17.133		0.5708	0.0119%	5708	1269	4.5	1			1.0000E-04
57	17.517	MOTOR OIL	0.2846	0.0059%	3941	1663	2.4	1	0	.0952	7.2227E-05
58	19.033		0.8457	0.0176%	8457	2765	3.1	1			1.0000E-04
59	24.767		3.5313	0.0736%	35313	19168	1.8	1			1.0000E-04

TOTAL AMOUNT = 4800.3540

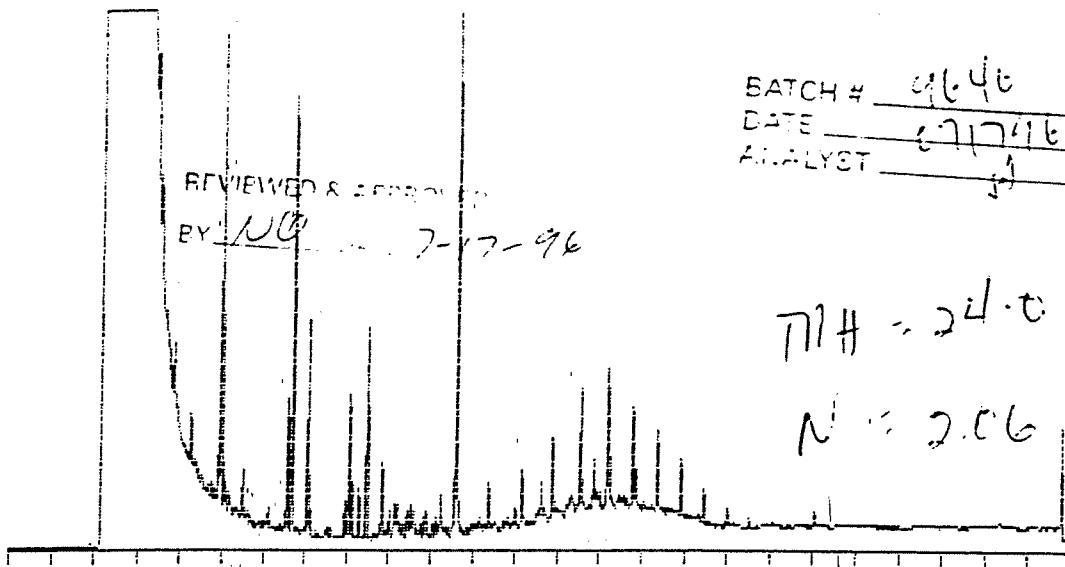
Data File = L:AG10-35.PTS, Printed on 07-16-1996 at 20:30:58
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



002345

- 24.77

002346



BATCH # 4646
DATE 6/17/96
ANALYST J

[Interface 2] 0-25 Min Scale: 100 Mu
*G9607191- Processed: 07-16-1996 21:05:32, segment 3, cycle 36
RAW DATA SAVED IN FILE L:AG10-36.PTS

***** AREA PERCENT REPORT *****

***** 07-16-1996 21:05:42 Version 5.1.5 *****

* Sample Name: *G9607191-1S2 B#9640/960715/25ML>5ML

Data File: L:AG10-36

* Date: 07-16-1996 20:40:28 Method: DIESEL-2

* Interface: 2 Cycle#: 36 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	47752792	96.303400	0	993895	100.000	48.0
2	4.233	29545	0.0596	1	8995	0.062	3.3
3	4.500	6171	0.0124	1	1931	0.013	3
4	4.950	208097	0.4197	1	87258	0.436	2
5	5.317	7354	0.0148	1	1489	0.015	4.9
6	5.500	16482	0.0332	1	8723	0.035	1.9
7	5.617	3895	0.0079	1	1703	0.008	2.3
8	6.117	16361	0.0330	1	3567	0.034	4.6
9	6.567	51329	0.1035	1	23931	0.107	2.1
10	6.683	173998	0.3509	1	79854	0.364	2.2
11	7.067	76679	0.1546	1	39029	0.161	2.0
12	7.283	4768	0.0096	1	1308	0.010	3.6
13	7.533	6067	0.0122	1	1944	0.013	3.1
14	7.633	3684	0.0074	1	1737	0.008	2.1
15	7.950	13083	0.0264	1	6738	0.027	1.9
16	8.050	83578	0.1686	1	25842	0.175	3.2
17	8.300	17222	0.0347	1	8929	0.036	1.9

002347

714 = 16.51 + 7.47 = 23.97

18	8.467	85954	0.1733	1	38959	0.180	2.2
19	8.683	2961	0.0060	1	748	0.006	4.0
20	8.833	30589	0.0617	1	13172	0.064	2.3
21	9.017	7187	0.0145	1	4068	0.015	1.8
22	9.150	8555	0.0173	1	3852	0.018	2.2
23	9.217	9425	0.0190	1	4531	0.020	2.1
24	9.333	3239	0.0065	1	1765	0.007	1.8
25	9.450	9910	0.0200	1	3744	0.021	2.6
26	9.533	24635	0.0497	1	4868	0.052	5.1
27	9.900	19342	0.0390	1	4917	0.041	3.9
28	10.033	4629	0.0093	1	2078	0.010	2.2
29	10.117	8027	0.0162	1	3261	0.017	2.5
30	10.233	26612	0.0537	1	6963	0.056	3.8
31	10.600	335202	0.6760	1	136134	0.702	2.5
32	10.983	5965	0.0120	1	1483	0.012	4.0
33	11.167	10643	0.0215	1	2172	0.022	4.9
34	11.383	29055	0.0586	1	8548	0.061	3.4
35	11.717	3362	0.0068	1	1324	0.007	2.5
36	12.000	15608	0.0315	1	3307	0.033	4.7
37	12.167	34450	0.0695	1	10568	0.072	3.3
38	12.617	29247	0.0590	1	6654	0.061	4.4
39	12.867	40544	0.0818	1	14575	0.085	2.8
40	13.333	26940	0.0543	1	3436	0.056	7.8
41	13.550	53407	0.1077	1	22362	0.112	2.4
42	13.867	17016	0.0343	1	7575	0.036	2.2
43	14.017	2735	0.0055	1	1996	0.006	1.4
44	14.183	78389	0.1581	1	24890	0.164	3.1
45	14.783	61695	0.1244	1	18048	0.129	3.4
46	15.033	10510	0.0212	1	1509	0.022	7.0
47	15.367	31717	0.0640	1	14392	0.066	2.2
48	15.917	20838	0.0420	1	10083	0.044	2.1
49	16.450	12643	0.0255	1	6263	0.026	2.0
50	16.983	7967	0.0161	1	3152	0.017	2.5
51	17.517	4810	0.0097	1	1683	0.010	2.9
52	19.033	7243	0.0146	1	2570	0.015	2.8
53	24.767	33648	0.0679	1	18470	0.070	1.8

Total Area: 49585804 Area Reject: 2000 One sample per 1.000 sec

***** EXTERNAL STANDARD TABLE *****

***** 07-16-1996 21:05:42 Version 5.1.5 *****

* Sample Name: *G9607191-1S2 B#9640/960715/25ML>5ML

Data File: L:AG10-36

* Date: 07-16-1996 20:40:28 Method: DIESEL-2 06-28-1996 14:32:23 # 694 *

* Interface: 2 Cycle#: 36 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: 3400 536-01 Column Type: DB5/.25u *

* Solvent Description: HE 2ML/MIN *

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *

* Detector 0: FID Detector 1: *

* Misc. Information: GAS;NAPTHA;DIESEL;0-TERPH 05/29/96 *

Starting Delay: 0.00 Ending retention time: 25.00

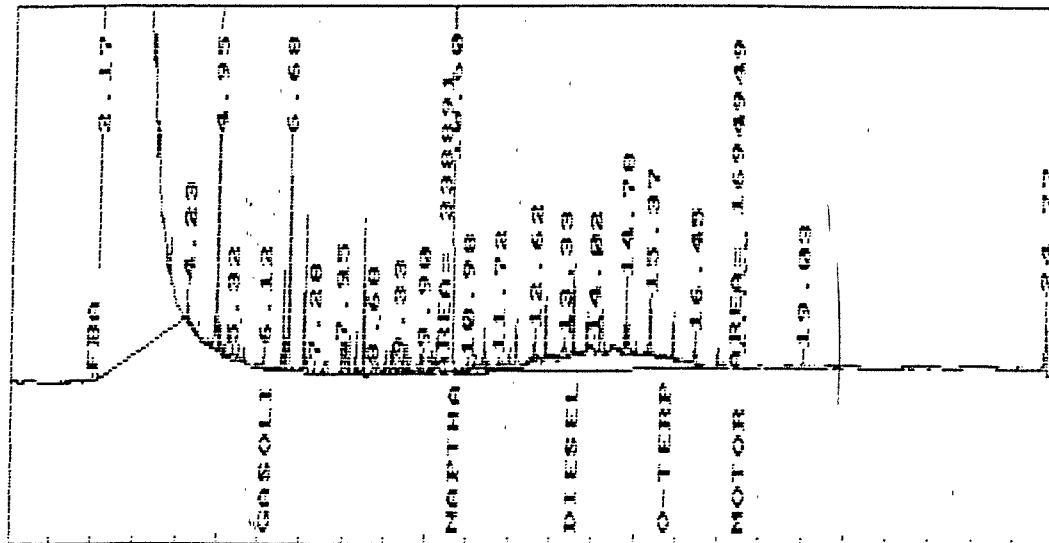
Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

002348

START TIME= 8.433 START HEIGHT= 7131
 STOP TIME= 10.550 STOP HEIGHT= 7131
 AREA = 338891
 START TIME= 10.650 START HEIGHT= 7131
 STOP TIME= 17.567 STOP HEIGHT= 9017
 AREA = 1694949
 lot of data file: L:AG10-36.PTS
 Date: 07-17-1996 Time: 14:03:34
 Sample Name: *G9607191-152 B#9640
 Start Time= 0.02 Stop Time = 25.03 Min. Scale= 4975 Max. Scale= 104975



$$D = 2033840 \left(\frac{6.5585 \times 10^5}{10} \right) (=)$$

$$= 1651$$

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.167		4775.2793	96.8430%	47752792	993895	48.0 0V			1.0000E-04
2	4.233		2.9545	0.0599%	29545	8995	3.3 1			1.0000E-04
	4.500		0.6171	0.0125%	6171	1931	3.2 1			1.0000E-04
4	4.950		20.8097	0.4220%	208097	87258	2.4 1			1.0000E-04
5	5.317		0.7354	0.0149%	7354	1489	4.9 1			1.0000E-04
6	5.500		1.6482	0.0334%	16482	8723	1.9 1			1.0000E-04
7	5.617		0.3895	0.0079%	3895	1703	2.3 1			1.0000E-04
8	6.117	GASOLINE TO C10	0.8504	0.0172%	16361	3567	4.6 1	0	- .8644	5.1977E-05
9	6.567		5.1329	0.1041%	51329	23931	2.1 1			1.0000E-04
10	6.683		17.3998	0.3529%	173998	79854	2.2 1			1.0000E-04
11	7.067		7.6679	0.1555%	76679	39029	2.0 1			1.0000E-04
12	7.283		0.4768	0.0097%	4768	1308	3.6 1			1.0000E-04
13	7.533		0.6067	0.0123%	6067	1944	3.1 1			1.0000E-04
14	7.633		0.3684	0.0075%	3684	1737	2.1 1			1.0000E-04
15	7.950		1.3082	0.0265%	13083	6738	1.9 1			1.0000E-04
16	8.050		8.3577	0.1695%	83578	25842	3.2 1			1.0000E-04
17	8.300		1.7222	0.0349%	17222	8929	1.9 1			1.0000E-04
18	8.467		8.5954	0.1743%	85954	38959	2.2 1			1.0000E-04
19	8.683		0.2961	0.0060%	2961	748	4.0 1			1.0000E-04
20	8.833		3.0588	0.0620%	30589	13172	2.3 1			1.0000E-04
21	9.017		0.7187	0.0146%	7187	4068	1.8 1			1.0000E-04
22	9.150		0.8555	0.0173%	8555	3852	2.2 1			1.0000E-04
23	9.217		0.9425	0.0191%	9425	4531	2.1 1			1.0000E-04
24	9.333		0.3239	0.0066%	3239	1765	1.8 1			1.0000E-04
25	9.450		0.9910	0.0201%	9910	3744	2.6 1			1.0000E-04
26	9.533		2.4635	0.0500%	24635	4868	5.1 1			1.0000E-04
27	9.900		1.9342	0.0392%	19342	4917	3.9 1			1.0000E-04
28	10.033		0.4629	0.0094%	4629	2078	2.2 1			1.0000E-04
	10.117		0.8027	0.0163%	8027	3261	2.5 1			1.0000E-04
30	10.233		2.6612	0.0540%	26612	6963	3.8 1			1.0000E-04
31	10.600	NAPHTHALENE	10.2988	0.2089%	335202	136134	2.5 1	0	- .7490	3.0724E-05
32	10.983		0.5965	0.0121%	5965	1483	4.0 1			1.0000E-04
33	11.167		1.0643	0.0216%	10643	2172	4.9 1			1.0000E-04
34	11.383		2.9055	0.0589%	29055	8548	3.4 1			1.0000E-04
35	11.717		0.3361	0.0068%	3362	1324	2.5 1			1.0000E-04
36	12.000		1.5608	0.0317%	15608	3307	4.7 1			1.0000E-04
37	12.167		3.4450	0.0699%	34450	10568	3.3 1			1.0000E-04
38	12.617		2.9247	0.0593%	29247	6654	4.4 1			1.0000E-04
39	12.867		4.0544	0.0822%	40544	14575	2.8 1			1.0000E-04
40	13.333		2.6940	0.0546%	26940	3436	7.8 1			1.0000E-04
41	13.550	DIESEL C10-C25	2.1675	0.0440%	53407	22362	2.4 1	0	.3703	4.0585E-05
42	13.867		1.7016	0.0345%	17016	7575	2.2 1			1.0000E-04
43	14.017		0.2735	0.0055%	2735	1996	1.4 1			1.0000E-04
44	14.183		7.8389	0.1590%	78389	24890	3.1 1			1.0000E-04
45	14.783		6.1695	0.1251%	61695	18048	3.4 1			1.0000E-04
46	15.033		1.0510	0.0213%	10510	1509	7.0 1			1.0000E-04
47	15.367		3.1717	0.0643%	31717	14392	2.2 1			1.0000E-04
48	15.917	HYDRAULIC OIL	1.7693	0.0359%	20838	10083	2.1 1	0	- .5208	8.4912E-05
49	16.450		1.2643	0.0256%	12643	6263	2.0 1			1.0000E-04
50	16.983		0.7967	0.0162%	7967	3152	2.5 1			1.0000E-04
51	17.517	MOTOR OIL	0.3474	0.0070%	4810	1683	2.9 1	0	.0952	7.2227E-05
52	19.033		0.7243	0.0147%	7243	2570	2.8 1			1.0000E-04
53	24.767		3.3648	0.0682%	33648	18470	1.8 1			1.0000E-04

TOTAL AMOUNT = 4930.9517

PEAKS NOT FOUND IN THIS RUN

002350

NAME
O-TERPHENYL

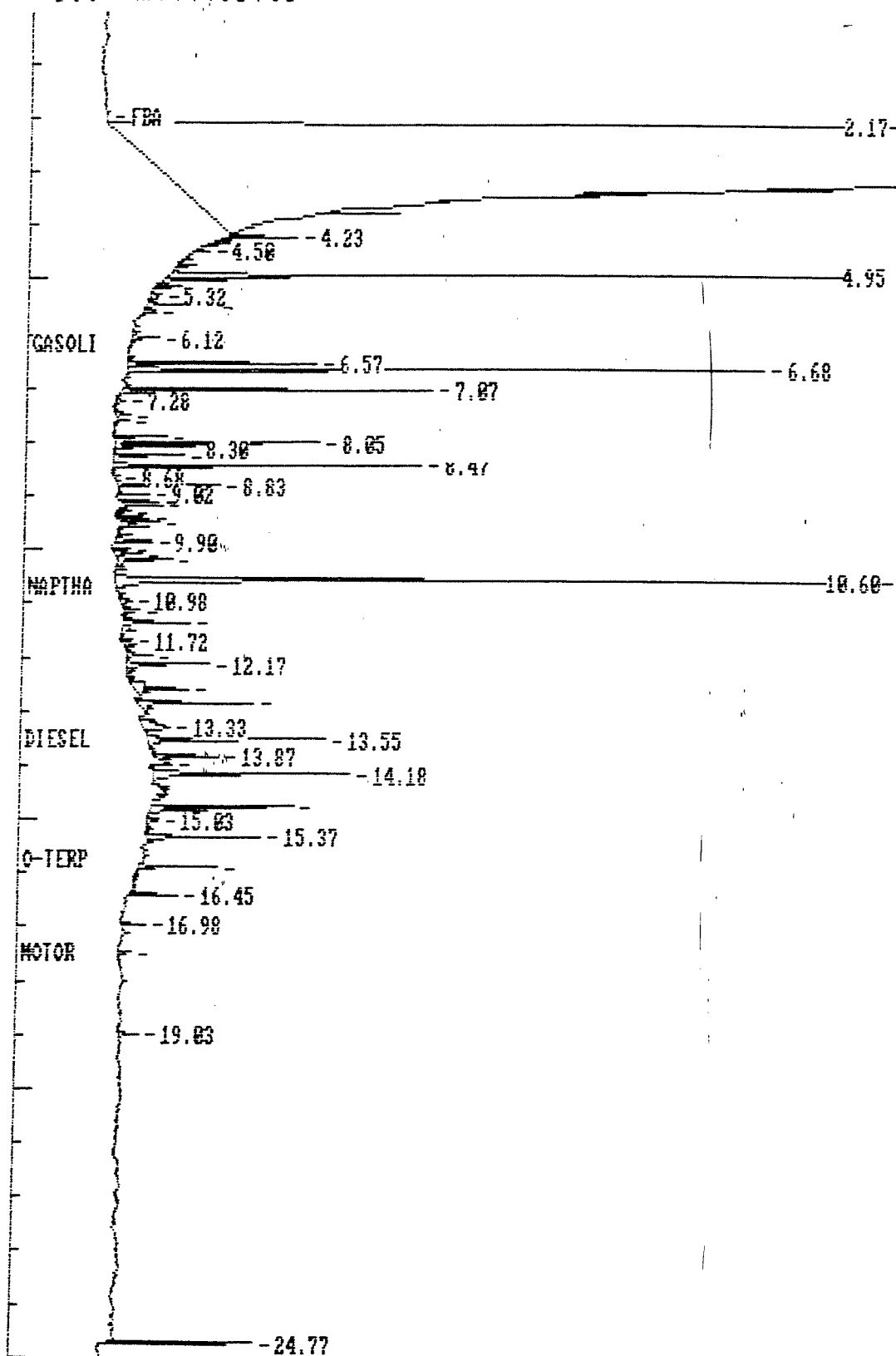
ADJUSTED RET.TIME.
15.72

REFERENCE PEAK
O-TERPHENYL

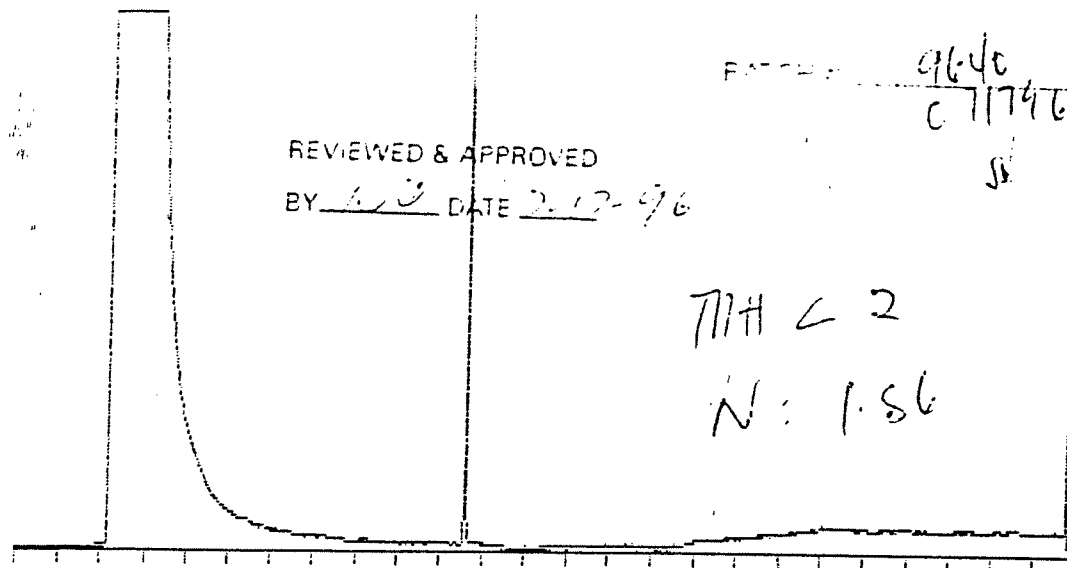
Data File = L:AG10-36.PTS Printed on 07-16-1996 at 21:05:43

Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

11 Range: 100 millivolts



002351



[Interface 2] 0-25 Min Scale: 100 Mu
 *G9607191- Processed: 07-16-1996 21:40:22, segment 4, cycle 37
 RAW DATA SAVED IN FILE L:AG10-37.PTS

AREA PERCENT REPORT

***** 07-16-1996 21:40:32 Version 5.1.5 *****
 * Sample Name: *G9607191-2 B#9640/960715/25ML>5ML
 Data File: L:AG10-37
 * Date: 07-16-1996 21:15:19 Method: DIESEL-2
 * Interface: 2 Cycle#: 37 Operator JP Channel#: 0 Vial#: N.A.
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u
 * Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS;NAPHTHA;DIESEL;O-TERPH 05/29/96

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	48873568	99.318600	993949		100.000	49.2
2	10.600	302041	0.6138	1	134793	0.618	2.2
3	24.767	33264	0.0676	1	19192	0.068	1.7

Total Area: 49208872 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 07-16-1996 21:40:32 Version 5.1.5 *****
 * Sample Name: *G9607191-2 B#9640/960715/25ML>5ML
 Data File: L:AG10-37
 * Date: 07-16-1996 21:15:19 Method: DIESEL-2 06-28-1996 14:32:23 # 694
 * Interface: 2 Cycle#: 37 Operator JP Channel#: 0 Vial#: N.A.
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u

002352

* Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96

 Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

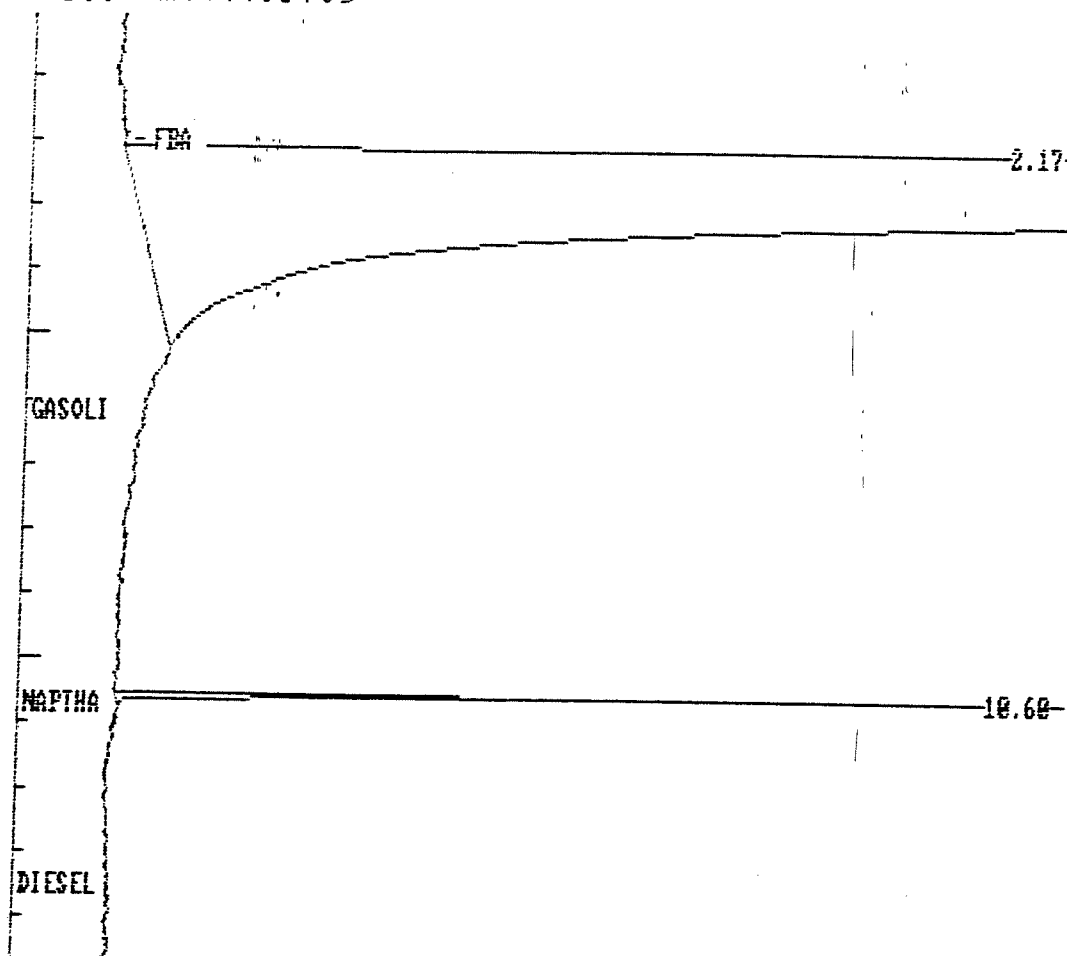
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	Z DELTA RET TIME	CONC/AREA
1	2.167		4887.3564	99.7427%	48873568	993949	49.2 0V			1.0000E-04
2	10.600	NAPTHALENE	9.2799	0.1894%	302041	134793	2.2 1	0	-0.7490	3.0724E-05
3	24.767		3.3264	0.0679%	33264	19192	1.7 1			1.0000E-04

TOTAL AMOUNT = 4899.9624

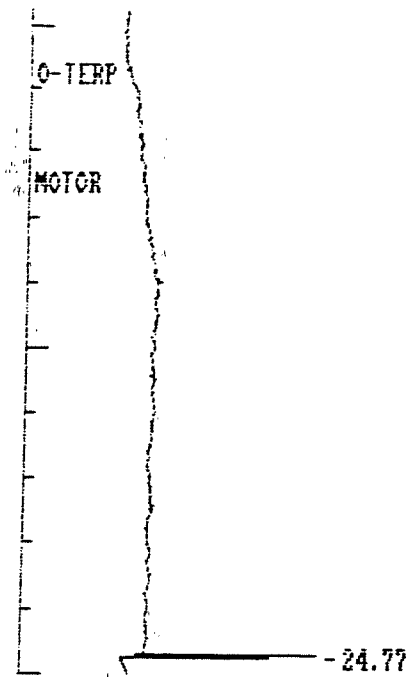
PEAKS NOT FOUND IN THIS RUN

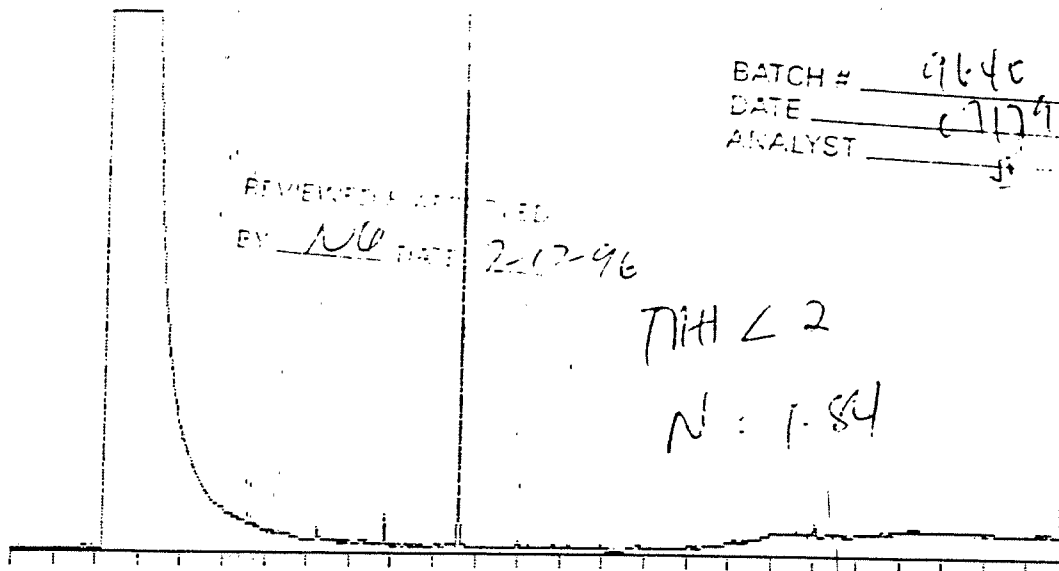
NAME	ADJUSTED RET. TIME	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.72	O-TERPHENYL
HYDRAULIC OIL	16.00	HYDRAULIC OIL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AG10-37.PTS Printed on 07-16-1996 at 21:40:33
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



002353





BATCH # 9640
DATE 7/17/96
ANALYST J

REVIEWED BY N1H DATE 2-12-96

N1H < 2

N: 1.84

9640

[Interface 2] 0-25 Min Scale: 100 Mv

*G9607191- Processed: 07-16-1996 22:15:09, segment 1, cycle 38

RAW DATA SAVED IN FILE L:AG10-38.PTS

***** AREA PERCENT REPORT *****

***** 07-16-1996 22:15:19 Version 5.1.5 *****

* Sample Name: *G9607191-3 B#9640/960715/25ML>5ML

Data File: L:AG10-38

* Date: 07-16-1996 21:50:06 Method: DIESEL-2

* Interface: 2 Cycle#: 38 Operator JF Channel#: 0 Vial#: N.A.

Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS:NAPHTHA:DIESEL:0-TERPH 05/29/96

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	48849464	99.262900	994492		100.000	49.1
2	7.233	8616	0.0175	1	2685	0.018	3.2
3	8.833	10629	0.0216	1	5104	0.022	2.1
4	10.600	300059	0.6097	1	133099	0.614	2.3
5	13.967	3935	0.0080	1	1143	0.008	3.4
6	19.033	5875	0.0119	1	2143	0.012	2.7
7	24.767	33633	0.0683	1	19083	0.069	1.8

Total Area: 49212212 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 07-16-1996 22:15:19 Version 5.1.5 *****

* Sample Name: *G9607191-3 B#9640/960715/25ML>5ML

Data File: L:AG10-38

* Date: 07-16-1996 21:50:06 Method: DIESEL-2 06-28-1996 14:32:23 # 694 *

002355


```

* Interface: 2   Cycle#: 38   Operator JF   Channel#: 0   Vial#: N.A.
* Starting Peak Width: 10   Threshold: 10   Area Threshold: 1000
*****
* Instrument Type: 3400 536-01   Column Type: DB5/.25u
* Solvent Description: HE 2ML/MIN
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
* Detector 0: FID   Detector 1: -
* Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96
*****
Starting Delay: 0.00   Ending retention time: 25.00
Area reject: 2000   One sample per 1.000 sec.
Amount injected: 1.00   Dilution factor: 1.00
Sample Weight: 1.00000

```

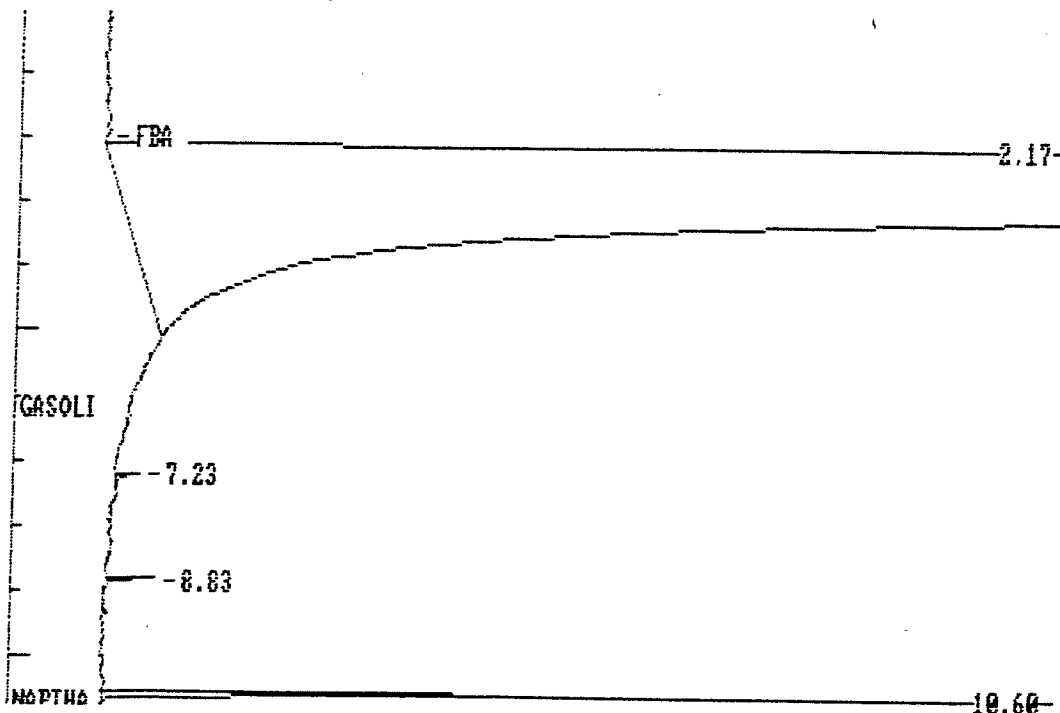
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.167		4884.9463	99.6839%	48849464	994492	49.1 0V			1.0000E-04
2	7.233		0.8616	0.0176%	8616	2685	3.2 1			1.0000E-04
3	8.833		1.0629	0.0217%	10629	5104	2.1 1			1.0000E-04
4	10.600	NAPTHALENE	9.2190	0.1881%	300059	133099	2.3 1	0	-7.490	3.0724E-05
5	13.967		0.3935	0.0080%	3935	1143	3.4 1			1.0000E-04
6	19.033		0.5874	0.0120%	5875	2143	2.7 1			1.0000E-04
7	24.767		3.3633	0.0686%	33633	19083	1.8 1			1.0000E-04

TOTAL AMOUNT = 4900.4346

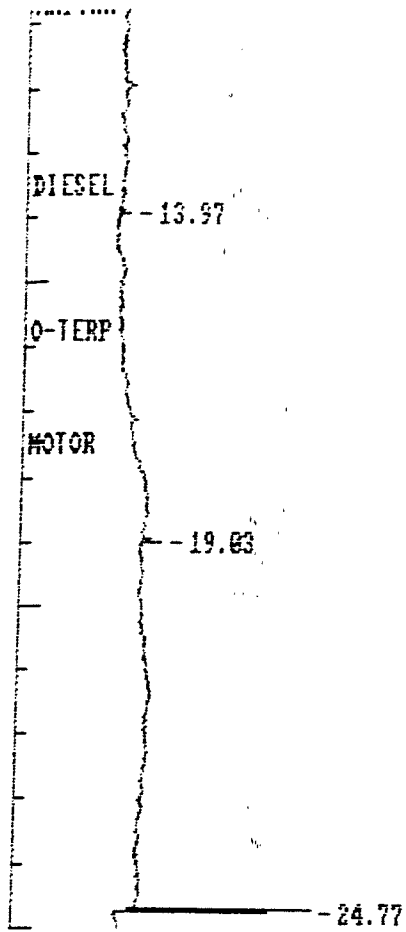
PEAKS NOT FOUND IN THIS RUN

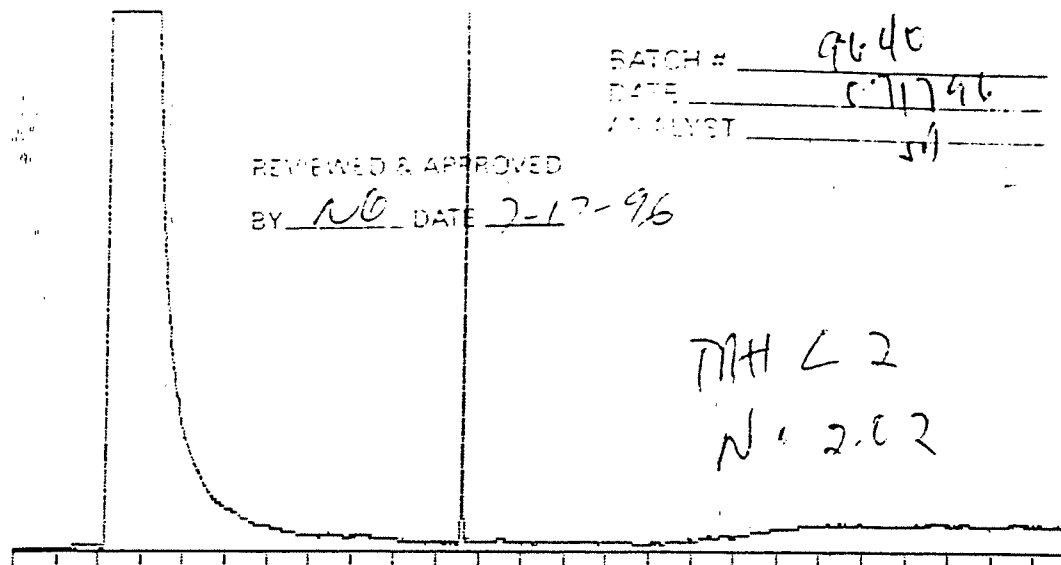
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
DIESEL C10-C25	13.50	DIESEL C10-C25
TERPHENYL	15.72	O-TERPHENYL
HYDRAULIC OIL	16.00	HYDRAULIC OIL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AG10-38.PTS Printed on 07-16-1996 at 22:15:20
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



002356





BATCH # 9640
DATE 07-17-96
ANALYST JP

REVIEWED & APPROVED

BY NC DATE 7-17-96

MH L 2
N. 2.02

m/c

[Interface 2] 0-25 Min Scale: 100 Mu
*G9607191- Processed: 07-16-1996 22:49:57, segment 2, cycle 39
RAW DATA SAVED IN FILE L:AG10-39.PTS

***** AREA PERCENT REPORT *****

***** 07-16-1996 22:50:07 Version 5.1.5 *****

* Sample Name: *G9607191-4 B#9640/960715/25ML>5ML

Data File: L:AG10-39

* Date: 07-16-1996 22:24:54 Method: DIESEL-2

* Interface: 2 Cycle#: 39 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS;NAPHTHA;DIESEL;O-TERPH 05/29/96

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	48327732	99.255600	994479		100.000	48.6
2	10.600	327938	0.6735	1 146887		0.679	2.2
3	24.767	34520	0.0709	1 19142		0.071	1.8

Total Area: 48690192 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 07-16-1996 22:50:07 Version 5.1.5 *****

* Sample Name: *G9607191-4 B#9640/960715/25ML>5ML

Data File: L:AG10-39

* Date: 07-16-1996 22:24:54 Method: DIESEL-2 06-28-1996 14:32:23 # 694

* Interface: 2 Cycle#: 39 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

002358

* Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96

 Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

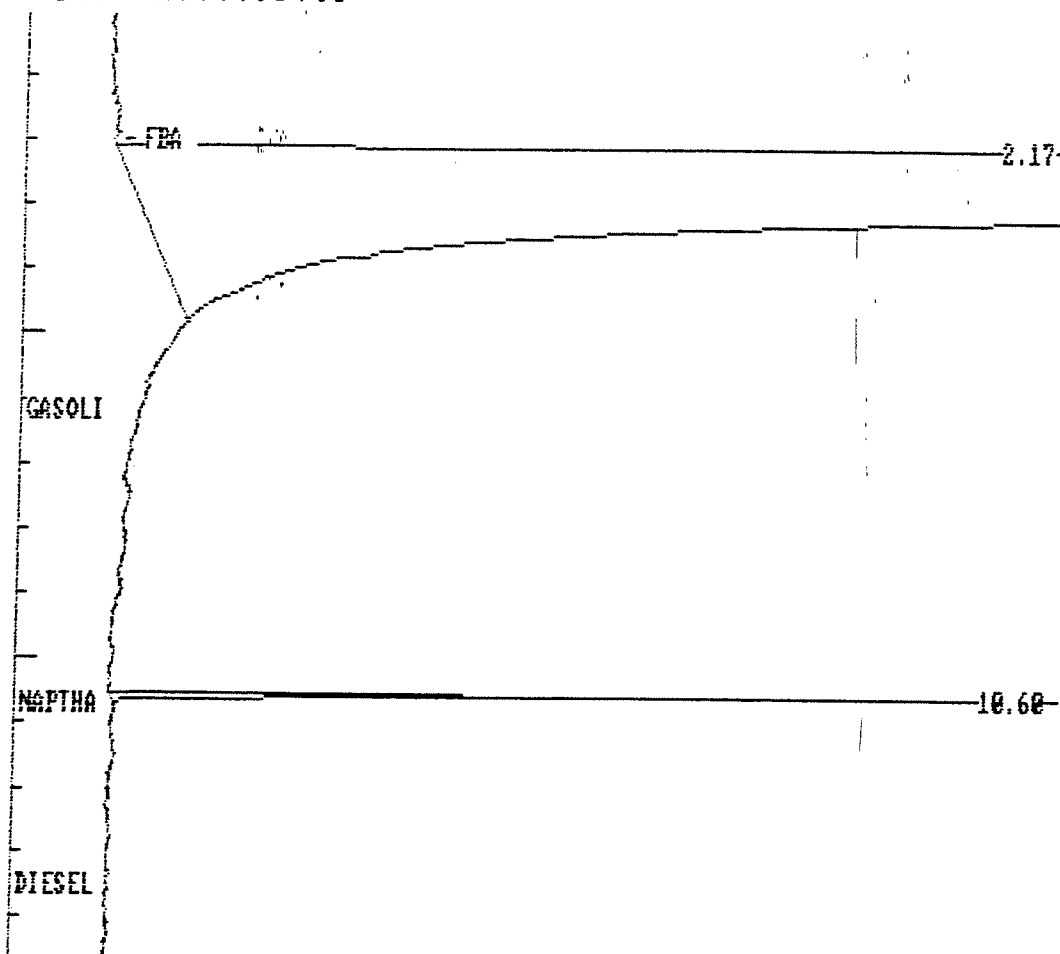
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.167		4832.7729	99.7209%	48327732	994479	48.6 0V			1.0000E-04
2	10.600	NAPTHALENE	10.0756	0.2079%	327938	146887	2.2 1	0	-7.490	3.0724E-05
3	24.767		3.4520	0.0712%	34520	19142	1.8 1			1.0000E-04

TOTAL AMOUNT = 4846.5008

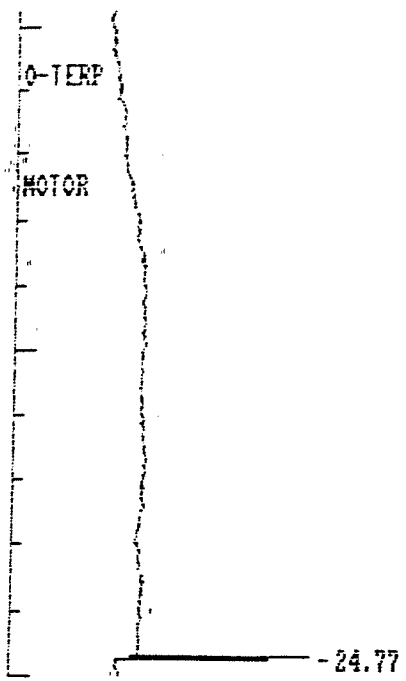
PEAKS NOT FOUND IN THIS RUN

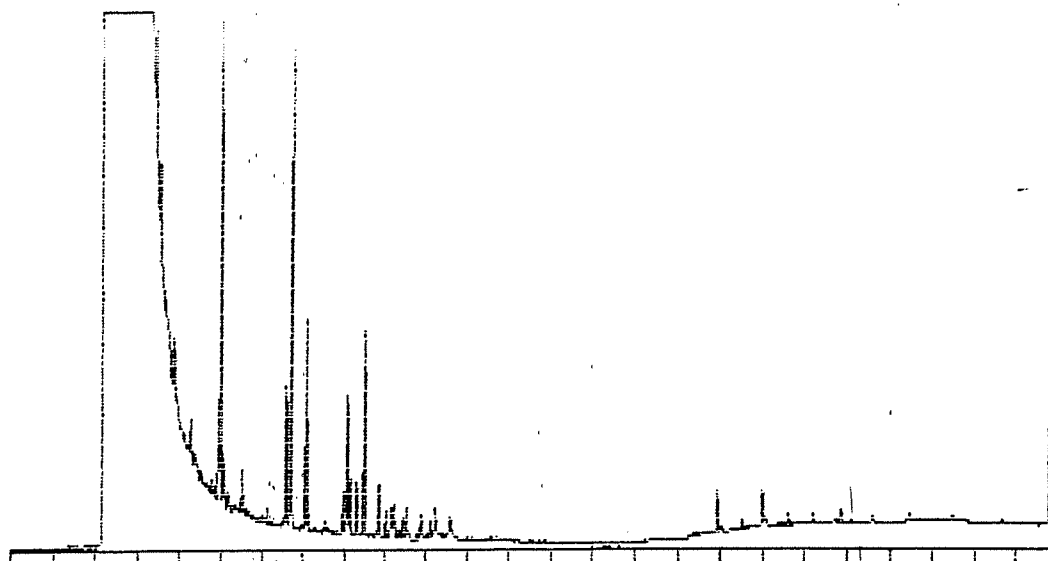
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.72	O-TERPHENYL
HYDRAULIC OIL	16.00	HYDRAULIC OIL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AG10-39.PTS Printed on 07-16-1996 at 22:50:08
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



002359





[Interface 2] 0-25 Min Scale: 100 Mu
 GASOLINE Processed: 07-16-1996 23:24:40, segment 3, cycle 40
 RAW DATA SAVED IN FILE L:AG10-40.PTS

***** AREA PERCENT REPORT *****

***** 07-16-1996 23:24:50 Version 5.1.5 *****
 * Sample Name: GASOLINE 50 PPM SU9606013 Data File: L:AG10-40.PTS *
 * Date: 07-16-1996 22:59:37 Method: DIESEL-2 *
 * Interface: 2 Cycle#: 40 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 0: FID Detector 1: *
 * Misc. Information: GAS:NAPTHA:DIESEL:O-TERPH 05/29/96 *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	48471736	97.837900	993777		100.000	48.8
2	4.250	19208	0.0388	1	6984	0.040	2.8
3	4.750	8406	0.0170	1	2561	0.017	2.4
4	4.967	218259	0.4405	1	89146	0.450	2.4
5	5.333	5331	0.0108	1	1199	0.011	4.4
6	5.500	16468	0.0332	1	7970	0.034	2.1
7	5.633	7110	0.0144	1	1611	0.015	4.4
8	6.117	5666	0.0114	1	2314	0.012	2.4
9	6.567	53474	0.1079	1	25766	0.110	2.1
10	6.700	186654	0.3768	1	88392	0.385	2.1
11	7.067	79764	0.1610	1	38659	0.165	2.1
12	7.950	13600	0.0275	1	7483	0.028	1.8
13	8.050	86839	0.1753	1	25440	0.179	3.4
14	8.300	17761	0.0358	1	9497	0.037	1.9
	8.483	86528	0.1747	1	37413	0.179	2.3
15	8.850	24330	0.0491	1	9486	0.050	2.6
17	9.017	9049	0.0183	1	4741	0.019	1.9
18	9.217	31301	0.0632	1	6095	0.065	5.1

718 510
 (5.1977 x 10)
 = 37.3 / 50 = 75

002361

19	9.333	2962	0.0060	1	1459	0.006	2.0
20	9.533	29317	0.0592	1	5920	0.060	5.0
21	9.767	2842	0.0057	1	1430	0.006	2.0
22	9.900	16734	0.0338	1	4669	0.035	3.6
23	10.117	6724	0.0136	1	2768	0.014	2.4
	10.233	12341	0.0249	1	4912	0.025	2.5
25	10.600	19275	0.0389	1	3937	0.040	4.9
26	16.933	19574	0.0395	1	7843	0.040	2.5
27	17.517	2500	0.0050	1	1357	0.005	1.8
28	17.983	22709	0.0458	1	6713	0.047	3.4
29	18.600	5498	0.0111	1	2259	0.011	2.4
30	19.200	7004	0.0141	1	2131	0.014	3.3
31	19.850	6725	0.0136	1	2228	0.014	3.0
32	20.600	4930	0.0100	1	1436	0.010	3.4
33	21.450	4039	0.0082	1	1101	0.008	3.7
34	22.467	3634	0.0073	1	788	0.007	4.6
35	24.767	34617	0.0699	1	18701	0.071	1.9

Total Area: 49542904 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 07-16-1996 23:24:50 Version 5.1.5 *****

* Sample Name: GASOLINE 50 PPM SU9606013 Data File: L:AG10-40 *

* Date: 07-16-1996 22:59:37 Method: DIESEL-2 06-28-1996 14:32:23 # 694 *

* Interface: 2 Cycle#: 40 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: 3400 536-01 Column Type: DB5/.25u *

* Solvent Description: HE 2ML/MIN *

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *

* Detector 0: FID Detector 1: *

* Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96 *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.167		4847.1733	97.8710%	48471736	993777	48.8 0V			1.0000E-04
2	4.250		1.9208	0.0388%	19208	6984	2.8 1			1.0000E-04
3	4.750		0.8406	0.0170%	8406	2561	3.3 1			1.0000E-04
4	4.967		21.8259	0.4407%	218259	89146	2.4 1			1.0000E-04
5	5.333		0.5331	0.0108%	5331	1199	4.4 1			1.0000E-04
6	5.500		1.6467	0.0333%	16468	7970	2.1 1			1.0000E-04
7	5.633		0.7109	0.0144%	7110	1611	4.4 1			1.0000E-04
8	6.117	GASOLINE TO C10	0.2945	0.0059%	5666	2314	2.4 1	0	-8644	5.1977E-05
9	6.567		5.3474	0.1080%	53474	25766	2.1 1			1.0000E-04
10	6.700		18.6654	0.3769%	186654	88392	2.1 1			1.0000E-04
11	7.067		7.9763	0.1611%	79764	38659	2.1 1			1.0000E-04
12	7.950		1.3600	0.0275%	13600	7483	1.8 1			1.0000E-04
13	8.050		8.6839	0.1753%	86839	25440	3.4 1			1.0000E-04
	8.300		1.7761	0.0359%	17761	9497	1.9 1			1.0000E-04
15	8.483		8.6528	0.1747%	86528	37413	2.3 1			1.0000E-04
16	8.850		2.4330	0.0491%	24330	9486	2.6 1			1.0000E-04
17	9.017		0.9049	0.0183%	9049	4741	1.9 1			1.0000E-04

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18	9.217	3.1301	0.0632%	31301	6095	5.1	1	1.0000E-04
19	9.333	0.2962	0.0060%	2962	1459	2.0	1	1.0000E-04
20	9.533	2.9317	0.0592%	29317	5920	5.0	1	1.0000E-04
21	9.767	0.2842	0.0057%	2842	1430	2.0	1	1.0000E-04
22	9.900	1.6734	0.0338%	16734	4669	3.6	1	1.0000E-04
	10.117	0.6724	0.0136%	6724	2768	2.4	1	1.0000E-04
24	10.233	1.2341	0.0249%	12341	4912	2.5	1	1.0000E-04
25	10.600 NAPHTHALENE	0.5922	0.0120%	19275	3937	4.9	1	3.0724E-05
26	16.933	1.9574	0.0395%	19574	7843	2.5	1	1.0000E-04
27	17.517 MOTOR OIL	0.1806	0.0036%	2500	1357	1.8	1	7.2227E-05
28	17.983	2.2708	0.0459%	22709	6713	3.4	1	1.0000E-04
29	18.600	0.5498	0.0111%	5498	2259	2.4	1	1.0000E-04
30	19.200	0.7004	0.0141%	7004	2131	3.3	1	1.0000E-04
31	19.850	0.6725	0.0136%	6725	2228	3.0	1	1.0000E-04
32	20.600	0.4930	0.0100%	4930	1436	3.4	1	1.0000E-04
33	21.450	0.4039	0.0082%	4039	1101	3.7	1	1.0000E-04
34	22.467	0.3634	0.0073%	3634	788	4.6	1	1.0000E-04
35	24.767	3.4617	0.0699%	34617	18701	1.9	1	1.0000E-04

TOTAL AMOUNT = 4952.6138

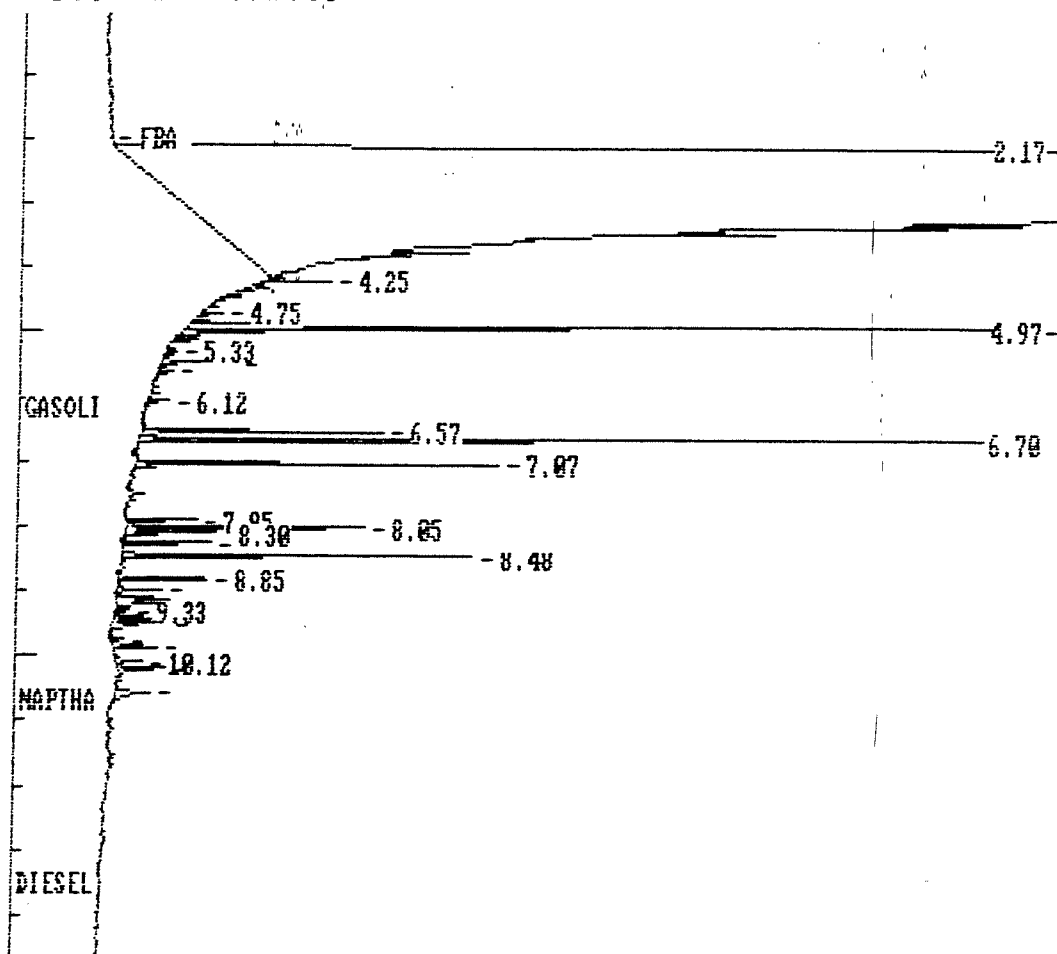
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.72	O-TERPHENYL
HYDRAULIC OIL	16.00	HYDRAULIC OIL

Data File = L:AG10-40.PTS Printed on 07-16-1996 at 23:24:51

Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

Full Range: 100 millivolts



002363

Q-TEMP

MOTOR

-16.93

-17.98

-19.28

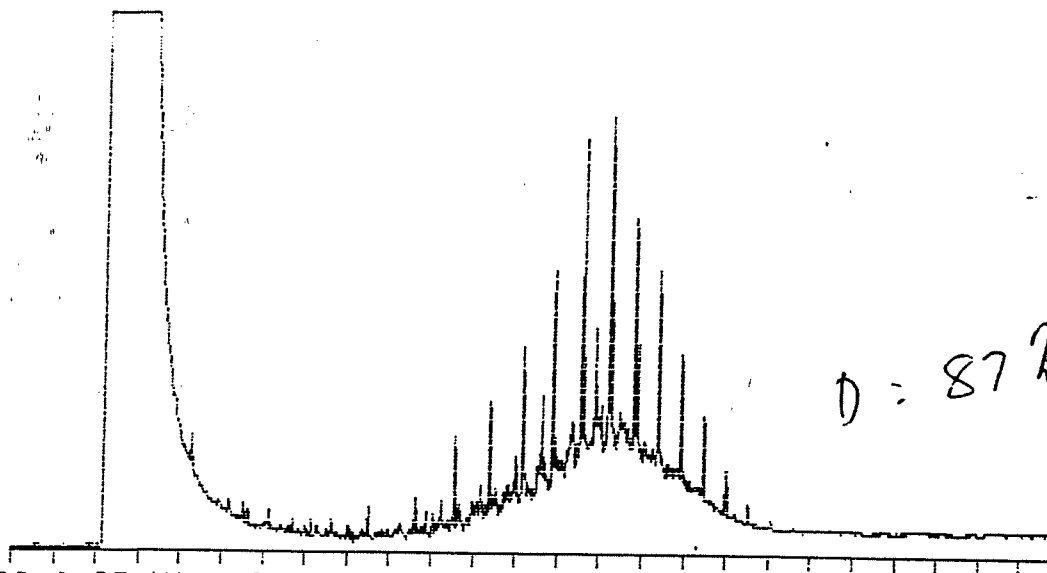
-20.69

-21.45

-22.47

-24.77

002364



[Interface 2] 0-25 Min Scale: 100 Mu
 DIESEL 25 Processed: 07-16-1996 23:59:29, segment 4, cycle 41
 RAW DATA SAVED IN FILE L:AG10-41.PTS

AREA PERCENT REPORT

***** 07-16-1996 23:59:39 Version 5.1.5 *****
 * Sample Name: DIESEL 250 PPM SU9607030 Data File: L:AG10-41 *
 * Date: 07-16-1996 23:34:26 Method: DIESEL-2 *
 * Interface: 2 Cycle#: 41 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 0: FID Detector 1: *
 * Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96 *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	48398488	96.854100	994450		100.000	48.7
2	5.167	6256	0.0125	1	2822	0.013	2.2
3	5.500	5981	0.0120	1	3023	0.012	2.0
4	5.633	4753	0.0095	1	2374	0.010	2.0
5	6.117	15135	0.0303	1	3343	0.031	4.5
6	6.417	3890	0.0078	1	1217	0.008	3.2
7	6.700	5034	0.0101	1	2366	0.010	2.1
8	7.133	5538	0.0111	1	2864	0.011	1.9
9	7.300	5590	0.0112	1	1582	0.012	3.5
10	7.500	3232	0.0065	1	1148	0.007	2.8
11	7.633	6418	0.0128	1	2853	0.013	2.2
12	8.050	8460	0.0169	1	2439	0.017	3.5
13	8.350	9419	0.0188	1	1357	0.019	6.9
14	8.500	13722	0.0275	1	5881	0.028	2.3
	8.950	4300	0.0086	1	1372	0.009	3.1
	9.150	3712	0.0074	1	977	0.008	3.8
17	9.600	16552	0.0331	1	6540	0.034	2.5
18	9.867	14924	0.0299	1	4584	0.031	3.3

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19	10.050	9797	0.0196	1	3842	0.020	2.5
20	10.217	15754	0.0315	1	5182	0.033	3.0
21	10.550	58527	0.1171	1	16909	0.121	3.5
22	10.867	5240	0.0105	1	1320	0.011	4.0
23	10.983	12597	0.0252	1	3113	0.026	4.0
(	11.167	16243	0.0325	1	5136	0.034	3.2
25	11.383	70838	0.1418	1	20801	0.146	3.4
26	11.650	3075	0.0062	1	1479	0.006	2.1
27	12.000	62536	0.1251	1	8421	0.129	7.4
28	12.167	89257	0.1786	1	27933	0.184	3.2
29	12.417	5900	0.0118	1	1557	0.012	3.8
30	12.617	65366	0.1308	1	16516	0.135	4.0
31	12.883	102275	0.2047	1	38824	0.211	2.6
32	13.083	8256	0.0165	1	2310	0.017	3.6
33	13.267	11866	0.0237	1	1813	0.025	6.5
34	13.333	22245	0.0445	1	6191	0.046	3.6
35	13.550	144782	0.2897	1	58775	0.299	2.5
36	13.867	43164	0.0864	1	19368	0.089	2.2
37	14.017	8604	0.0172	1	5847	0.018	1.5
38	14.183	199350	0.3989	1	61419	0.412	3.2
39	14.467	57233	0.1145	1	6131	0.118	9.3
40	14.783	149713	0.2996	1	42687	0.309	3.5
41	15.033	14154	0.0283	1	3531	0.029	4.0
42	15.217	7659	0.0153	1	2130	0.016	3.6
43	15.367	77893	0.1559	1	35251	0.161	2.2
44	15.617	6020	0.0120	1	2006	0.012	3.0
45	15.717	3899	0.0078	1	1656	0.008	2.4
46	15.917	63786	0.1276	1	23218	0.132	2.7
47	16.333	4161	0.0083	1	1291	0.009	3.2
48	16.450	32517	0.0651	1	15097	0.067	2.2
	16.983	17961	0.0359	1	7500	0.037	2.4
	17.517	8682	0.0174	1	3835	0.018	2.3
51	18.050	4611	0.0092	1	1577	0.010	2.9
52	24.767	35174	0.0704	1	18872	0.073	1.9

Total Area: 49970528 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 07-16-1996 23:59:40 Version 5.1.5 *****

* Sample Name: DIESEL 250 PPM SU9607030 Data File: L:AG10-41 *

* Date: 07-16-1996 23:34:26 Method: DIESEL-2 06-28-1996 14:32:23 # 694 *

* Interface: 2 Cycle#: 41 Operator JF Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: 3400 536-01 Column Type: DB5/.25u *

* Solvent Description: HE 2ML/MIN *

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *

* Detector 0: FID Detector 1: *

* Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96 *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

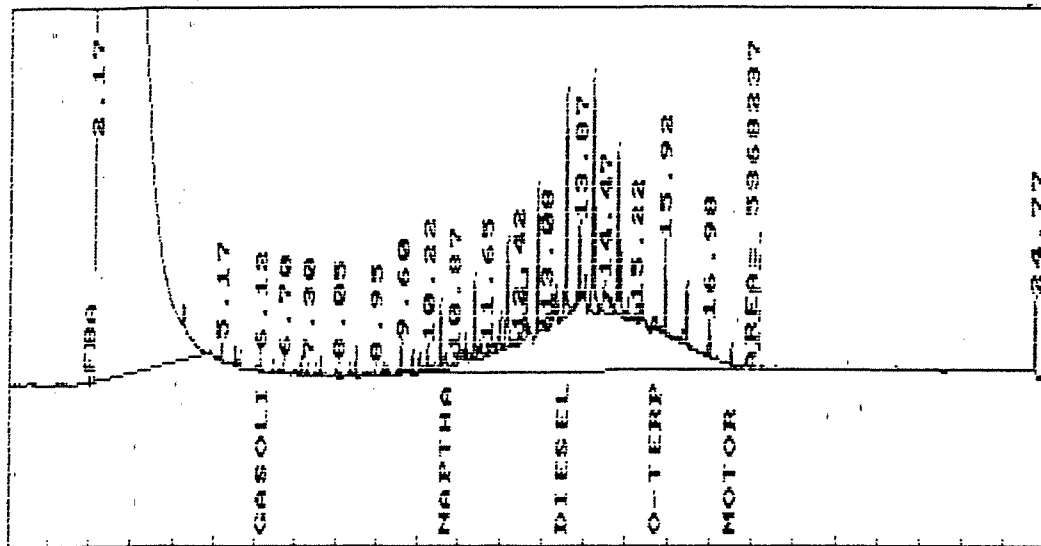
Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
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002366

START TIME= 8.433 START HEIGHT= 7283
 STOP TIME= 18.100 STOP HEIGHT= 8899
 AREA = 5368237 (4-0585 x 10) : 215/20 : 87 h
 Plot of data file: L:AG10-41.PTS
 Date: 07-17-1996 Time: 06:20:35
 Sample Name: DIESEL 250 PPM SU960
 Start Time= 0.02 Stop Time = 25.05 Min. Scale= 4915 Max. Scale= 104915



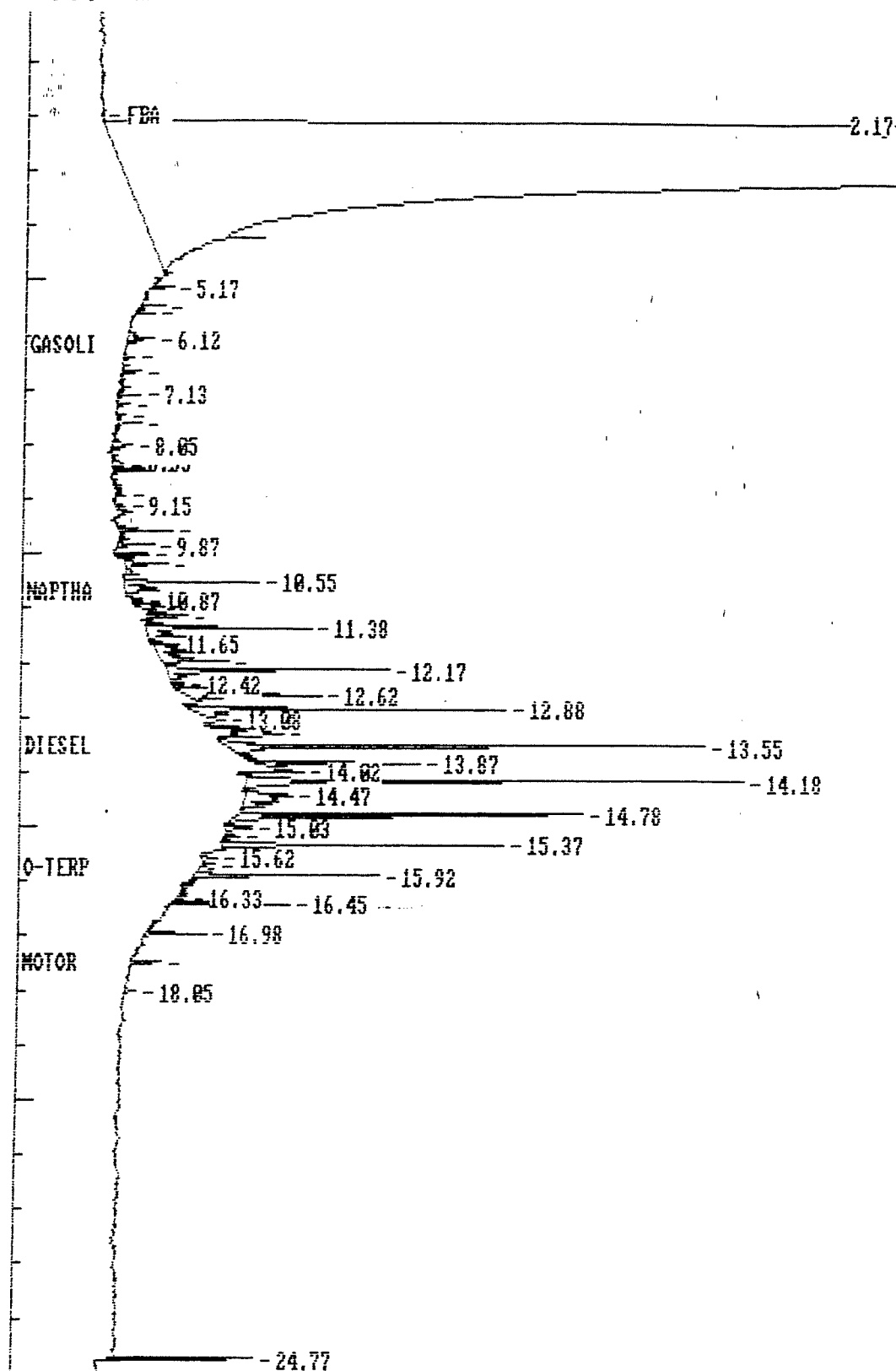
1	2.167	4839.8486	97.0638%	48398488	994450	48.7	0V		1.0000E-04
2	5.167	0.6256	0.0125%	6256	2822	2.2	1		1.0000E-04
3	5.500	0.5981	0.0120%	5981	3023	2.0	1		1.0000E-04
4	5.633	0.4753	0.0095%	4753	2374	2.0	1		1.0000E-04
5	6.117 GASOLINE TO C10	0.7867	0.0158%	15135	3343	4.5	1	0	- .8644 5.1977E-05
6	6.417	0.3890	0.0078%	3890	1217	3.2	1		1.0000E-04
7	6.700	0.5034	0.0101%	5034	2366	2.1	1		1.0000E-04
8	7.133	0.5538	0.0111%	5538	2864	1.9	1		1.0000E-04
9	7.300	0.5590	0.0112%	5590	1582	3.5	1		1.0000E-04
10	7.500	0.3232	0.0065%	3232	1148	2.8	1		1.0000E-04
11	7.633	0.6418	0.0129%	6418	2853	2.2	1		1.0000E-04
12	8.050	0.8460	0.0170%	8460	2439	3.5	1		1.0000E-04
13	8.350	0.9419	0.0189%	9419	1357	6.9	1		1.0000E-04
14	8.500	1.3722	0.0275%	13722	5881	2.3	1		1.0000E-04
15	8.950	0.4300	0.0086%	4300	1372	3.1	1		1.0000E-04
16	9.150	0.3712	0.0074%	3712	977	3.8	1		1.0000E-04
17	9.600	1.6552	0.0332%	16552	6540	2.5	1		1.0000E-04
18	9.867	1.4924	0.0299%	14924	4584	3.3	1		1.0000E-04
19	10.050	0.9796	0.0196%	9797	3842	2.5	1		1.0000E-04
20	10.217	1.5753	0.0316%	15754	5182	3.0	1		1.0000E-04
21	10.550	5.8527	0.1174%	58527	16909	3.5	1		1.0000E-04
22	10.867	0.5240	0.0105%	5240	1320	4.0	1		1.0000E-04
23	10.983	1.2597	0.0253%	12597	3113	4.0	1		1.0000E-04
24	11.167	1.6243	0.0326%	16243	5136	3.2	1		1.0000E-04
25	11.383	7.0838	0.1421%	70838	20801	3.4	1		1.0000E-04
26	11.650	0.3075	0.0062%	3075	1479	2.1	1		1.0000E-04
27	12.000	6.2536	0.1254%	62536	8421	7.4	1		1.0000E-04
28	12.167	8.9256	0.1790%	89257	27933	3.2	1		1.0000E-04
29	12.417	0.5900	0.0118%	5900	1557	3.8	1		1.0000E-04
30	12.617	6.5366	0.1311%	65366	16516	4.0	1		1.0000E-04
31	12.883	10.2274	0.2051%	102275	38824	2.6	1		1.0000E-04
32	13.083	0.8256	0.0166%	8256	2310	3.6	1		1.0000E-04
33	13.267	1.1866	0.0238%	11866	1813	6.5	1		1.0000E-04
34	13.333	2.2245	0.0446%	22245	6191	3.6	1		1.0000E-04
35	13.550 DIESEL C10-C25	5.8760	0.1178%	144782	58775	2.5	1	0	.3703 4.0585E-05
36	13.867	4.3164	0.0866%	43164	19368	2.2	1		1.0000E-04
37	14.017	0.8604	0.0173%	8604	5847	1.5	1		1.0000E-04
38	14.183	19.9350	0.3998%	199350	61419	3.2	1		1.0000E-04
39	14.467	5.7233	0.1148%	57233	6131	9.3	1		1.0000E-04
40	14.783	14.9712	0.3003%	149713	42687	3.5	1		1.0000E-04
41	15.033	1.4154	0.0284%	14154	3531	4.0	1		1.0000E-04
42	15.217	0.7659	0.0154%	7659	2130	3.6	1		1.0000E-04
43	15.367	7.7892	0.1562%	77893	35251	2.2	1		1.0000E-04
44	15.617	0.6020	0.0121%	6020	2006	3.0	1		1.0000E-04
45	15.717 O-TERPHENYL	0.1264	0.0025%	3899	1656	2.4	1	0	- .0212 3.2408E-05
46	15.917 HYDRAULIC OIL	5.4161	0.1086%	63786	23218	2.7	1	0	- .5208 8.4912E-05
47	16.333	0.4161	0.0083%	4161	1291	3.2	1		1.0000E-04
48	16.450	3.2517	0.0652%	32517	15097	2.2	1		1.0000E-04
49	16.983	1.7961	0.0360%	17961	7500	2.4	1		1.0000E-04
50	17.517 MOTOR OIL	0.6271	0.0126%	8682	3835	2.3	1	0	.0952 7.2227E-05
51	18.050	0.4610	0.0092%	4611	1577	2.9	1		1.0000E-04
52	24.767	3.5174	0.0705%	35174	18872	1.9	1		1.0000E-04

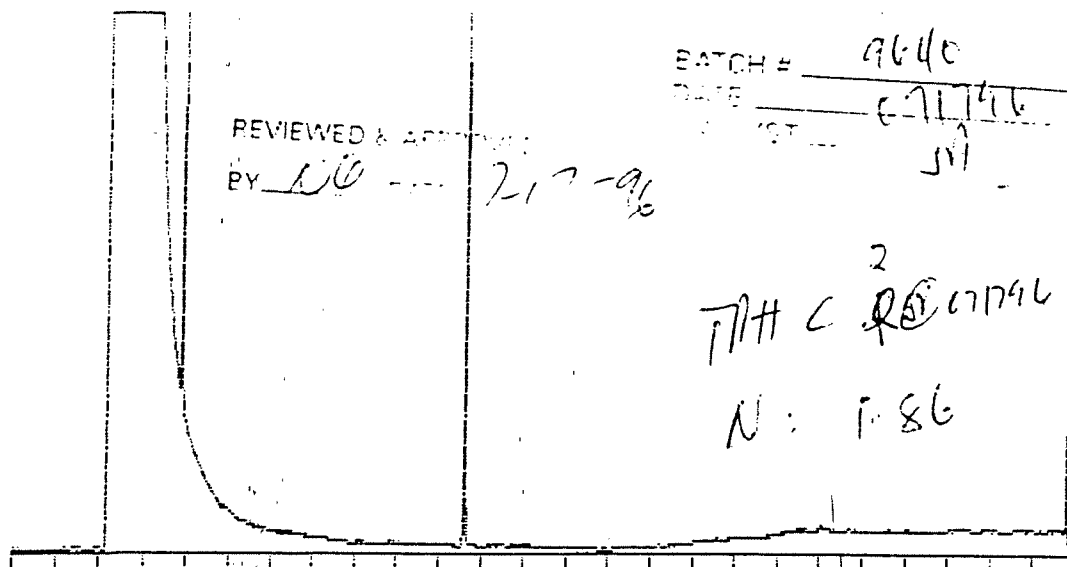
TOTAL AMOUNT = 4986.2563

PEAKS NOT FOUND IN THIS RUN

NAPHTHALENE 10.68 ADJUSTED RET.TIME. REFERENCE PEAK NAPHTHALENE

Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mV.
Full Range: 100 millivolts





[Interface 2] 0-25 Min Scale: 100 Mu
 *G9607215- Processed: 07-17-1996 00:34:14, segment 1, cycle 42
 RAW DATA SAVED IN FILE L:AG10-42.PTS

***** AREA PERCENT REPORT *****

***** 07-17-1996 00:34:24 Version 5.1.5 *****

* Sample Name: *G9607215-1 B#9640/960715/25ML>5ML
 Data File: L:AG10-42

* Date: 07-17-1996 00:09:10 Method: DIESEL-2

* Interface: 2 Cycle#: 42 Operator JF Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS:NAPTHA:DIESEL;O-TERPH 05/29/96

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	47483948	98.865500	993825	100.000	47.8	
2	3.850	203331	0.4234	1 106946	0.428	1.9	
3	10.600	302107	0.6290	1 143052	0.636	2.1	
4	19.033	3778	0.0079	1 1144	0.008	3.3	
5	24.767	35675	0.0743	1 18770	0.075	1.9	

Total Area: 48028844 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 07-17-1996 00:34:24 Version 5.1.5 *****

* Sample Name: *G9607215-1 B#9640/960715/25ML>5ML

Data File: L:AG10-42

* Date: 07-17-1996 00:09:10 Method: DIESEL-2 06-28-1996 14:32:23 # 694

* Interface: 2 Cycle#: 42 Operator JF Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

002370

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u
 * Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

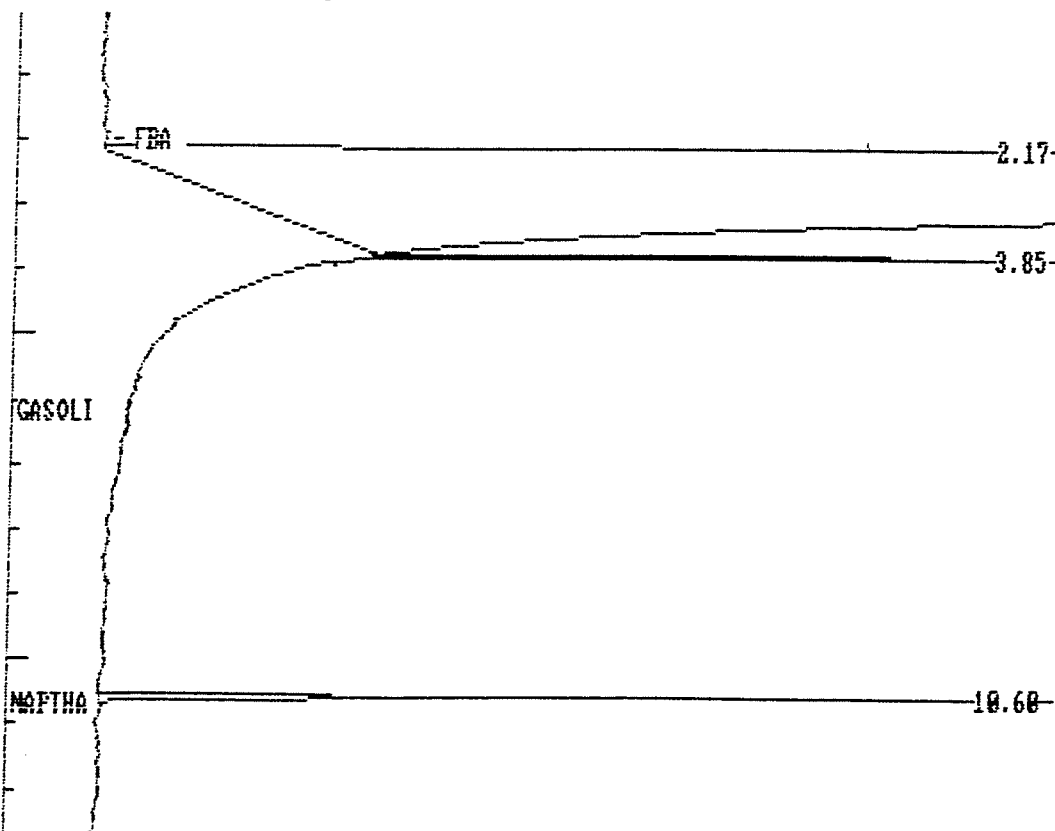
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.167		4748.3945	99.2982%	47483948	993825	47.8 0V			1.0000E-04
2	3.850		20.3330	0.4252%	203331	106946	1.9 1			1.0000E-04
3	10.600	NAPTHALENE	9.2820	0.1941%	302107	143052	2.1 1	0	-7.490	3.0724E-05
4	19.033		0.3778	0.0079%	3778	1144	3.3 1			1.0000E-04
5	24.767		3.5674	0.0746%	35675	18770	1.9 1			1.0000E-04

TOTAL AMOUNT = 4781.9546

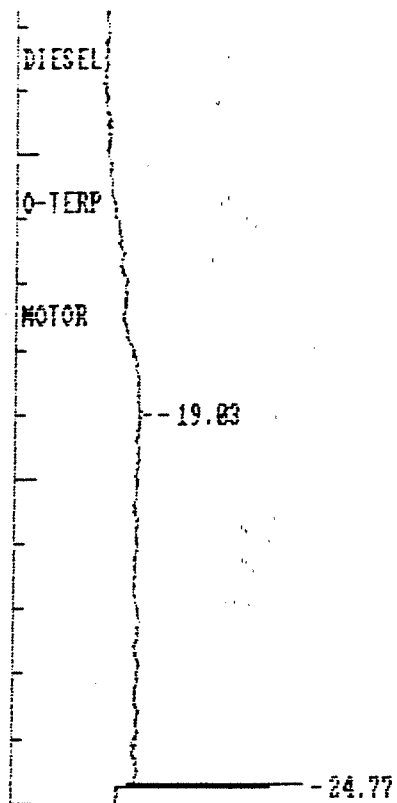
PEAKS NOT FOUND IN THIS RUN

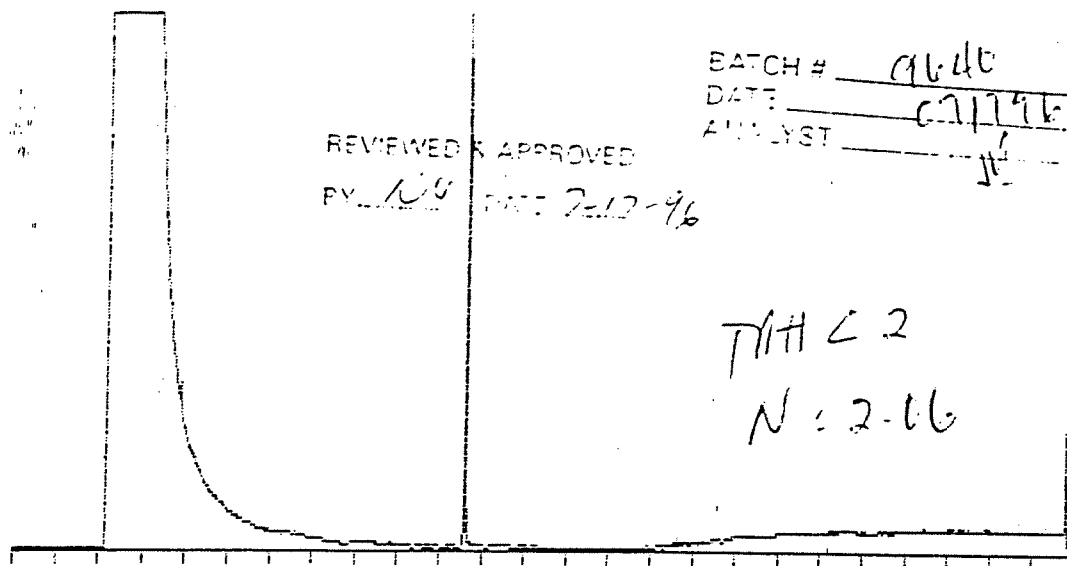
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.72	O-TERPHENYL
HYDRAULIC OIL	16.00	HYDRAULIC OIL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AG10-42.PTS Printed on 07-17-1996 at 00:34:24
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



002371





REVIEWED & APPROVED

BY NG DATE 7-12-96

BATCH # 9640
DATE 7-17-96
ANALYST JF

TH 2
N: 2.16

m 9/L

[Interface 2] 0-25 Min Scale: 100 Mu
*G9607215- Processed: 07-17-1996 01:08:58, segment 2, cycle 43
RAW DATA SAVED IN FILE L:AG10-43.PTS

AREA PERCENT REPORT

***** 07-17-1996 01:09:08 Version 5.1.5 *****

* Sample Name: *G9607215-2 B#9640/960715/25ML>5ML

Data File: L:AG10-43

* Date: 07-17-1996 00:43:55 Method: DIESEL-2

* Interface: 2 Cycle#: 43 Operator JF Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	48961832	99.248100	994805		100.000	49.2
2	10.600	335182	0.6794	1	159605	0.685	2.1
3	24.767	35732	0.0724	1	19685	0.073	1.8

Total Area: 49332744 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 07-17-1996 01:09:08 Version 5.1.5 *****

* Sample Name: *G9607215-2 B#9640/960715/25ML>5ML

Data File: L:AG10-43

* Date: 07-17-1996 00:43:55 Method: DIESEL-2 06-28-1996 14:32:23 # 694

* Interface: 2 Cycle#: 43 Operator JF Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/.25u

002373

* Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS;NAPTHA:DIESEL;O-TERPH 05/29/96

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

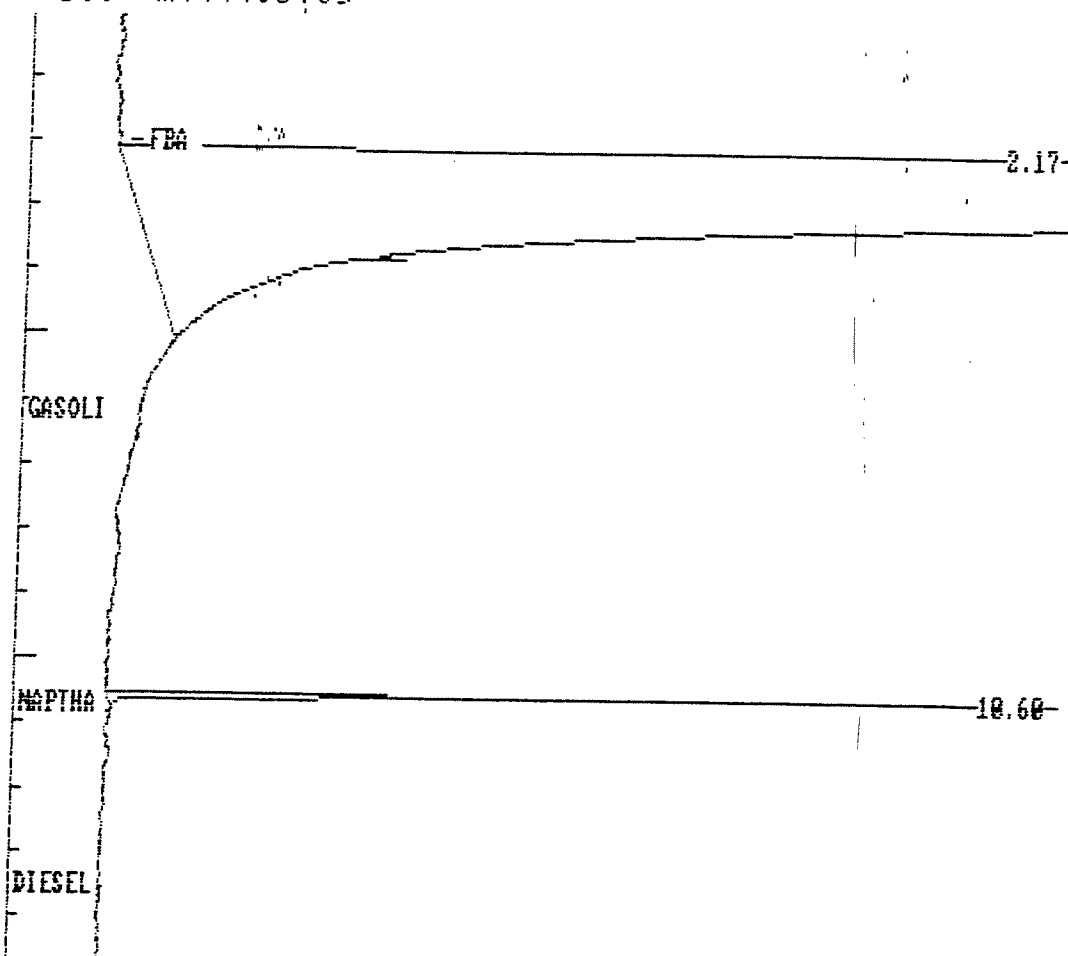
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.167		4896.1831	99.7175%	48961832	994805	49.2 0V			1.0000E-04
2	10.600	NAPTHALENE	10.2981	0.2097%	335182	159605	2.1 1	0	-7.490	3.0724E-05
3	24.767		3.5732	0.0728%	35732	19685	1.8 1			1.0000E-04

TOTAL AMOUNT = 4910.0547

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.72	O-TERPHENYL
HYDRAULIC OIL	16.00	HYDRAULIC OIL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AG10-43.PTS Printed on 07-17-1996 at 01:09:09
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts

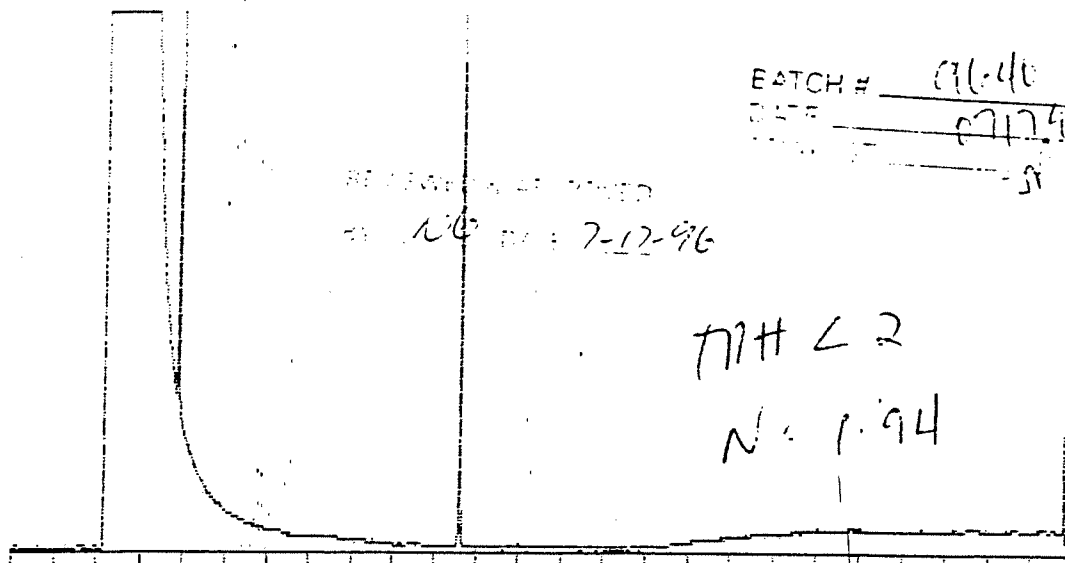


002374

O-TEMP

MOTOR

-24.77



[Interface 2] 0-25 Min Scale: 100 Mv
 *G9607215- Processed: 07-17-1996 01:43:38, segment 3, cycle 44
 RAW DATA SAVED IN FILE L:AG10-44.PTS

***** AREA PERCENT REPORT *****

***** 07-17-1996 01:43:48 Version 5.1.5 *****

* Sample Name: *G9607215-3 B#9640/960715/25ML>5ML

Data File: L:AG10-44

* Date: 07-17-1996 01:18:34 Method: DIESEL-2

* Interface: 2 Cycle#: 44 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: 3400 536-01 Column Type: DB5/25u

* Solvent Description: HE 2ML/MIN

* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD

* Detector 0: FID Detector 1:

* Misc. Information: GAS:NAPTHA;DIESEL;O-TERPH 05/29/96

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	47272704	98.858400	993802		100.000	47.6
2	3.850	194693	0.4071	1	100532	0.412	1.9
3	10.600	315683	0.6602	1	150981	0.668	2.1
4	24.767	35517	0.0743	1	19073	0.075	1.9

Total Area: 47818596 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 07-17-1996 01:43:48 Version 5.1.5 *****

* Sample Name: *G9607215-3 B#9640/960715/25ML>5ML

Data File: L:AG10-44

* Date: 07-17-1996 01:18:34 Method: DIESEL-2 06-28-1996 14:32:23 # 694

* Interface: 2 Cycle#: 44 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

002376

* Instrument Type: 3400 536-01 Column Type: DB5/.25u
 * Solvent Description: HE 2ML/MIN
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
 * Detector 0: FID Detector 1:
 * Misc. Information: GAS;NAPHTHA;DIESEL;O-TERPH 05/29/96

 Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	2.167		4727.2705	99.3126%	47272704	993802	47.6 DV			1.0000E-04
2	3.850		19.4692	0.4090%	194693	100532	1.9 1			1.0000E-04
3	10.600	NAPHTHALENE	9.6991	0.2038%	315683	150981	2.1 1	0	-7.490	3.0724E-05
4	24.767		3.5517	0.0746%	35517	19073	1.9 1			1.0000E-04

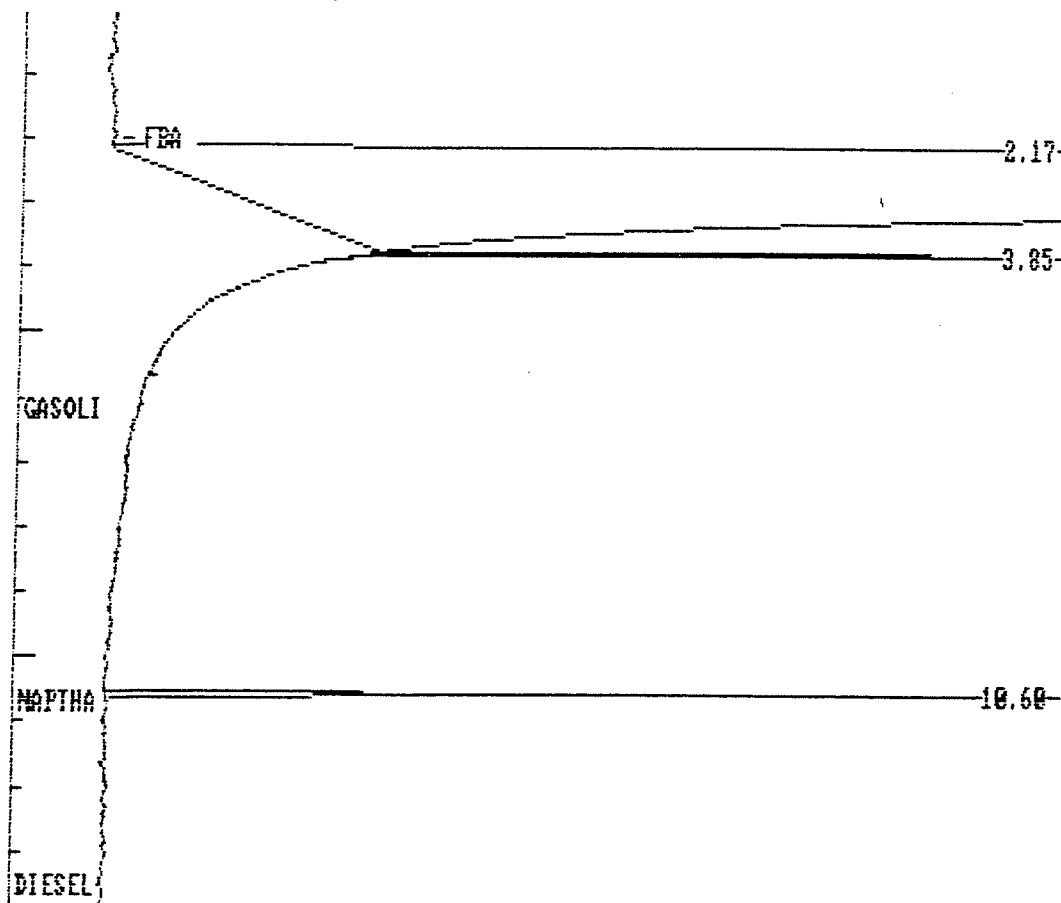
TOTAL AMOUNT = 4759.9907

PEAKS NOT FOUND IN THIS RUN

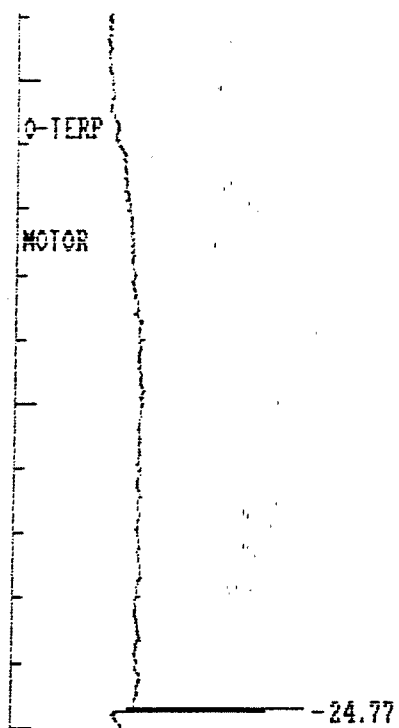
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
GASOLINE TO C10	6.17	GASOLINE TO C10
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.72	O-TERPHENYL
HYDRAULIC OIL	16.00	HYDRAULIC OIL
MOTOR OIL	17.50	O-TERPHENYL

Data File = L:AG10-44.PTS Printed on 07-17-1996 at 01:43:49

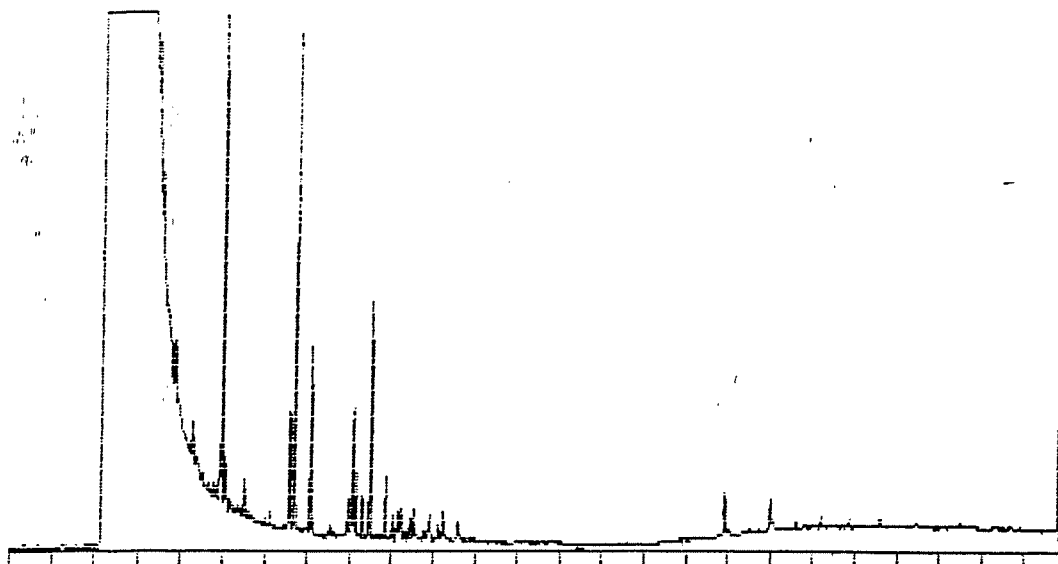
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



002377



002378



[Interface 2] 0-25 Min Scale: 100 Mu
 GASOLINE Processed: 07-17-1996 04:37:39, segment 4, cycle 49
 RAW DATA SAVED IN FILE L:AG10-49.PTS

***** AREA PERCENT REPORT *****

***** 07-17-1996 04:37:49 Version 5.1.5 *****
 * Sample Name: GASOLINE 50 PPM SU9606013 Data File: L:AG10-49 *
 * Date: 07-17-1996 04:12:36 Method: DIESEL-2 *
 * Interface: 2 Cycle#: 49 Operator JF Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 0: FID Detector 1: *
 * Misc. Information: GAS;NAPTHA;DIESEL;0-TERPH 05/29/96 *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.250	2127	0.0043	1	539	0.004	3.9
2	2.167	48699376	97.96010	0	994083	100.000	49.0
3	4.250	23588	0.0474	1	6604	0.048	3.6
4	4.967	213288	0.4290	1	90545	0.438	2.4
5	5.333	5898	0.0119	1	1333	0.012	4.4
6	5.517	15719	0.0316	1	6920	0.032	2.3
7	5.633	6614	0.0133	1	1458	0.014	4.5
8	6.117	5972	0.0120	1	2369	0.012	2.5
9	6.567	52882	0.1064	1	21222	0.109	2.5
10	6.700	181328	0.3647	1	92587	0.372	2.0
11	6.967	3024	0.0061	1	583	0.006	5.2
12	7.083	78829	0.1586	1	33739	0.162	2.3
13	7.550	10008	0.0201	1	2210	0.021	4.5
14	7.950	12769	0.0257	1	6489	0.026	2.0
15	8.067	97325	0.1958	1	22746	0.200	4.3
16	8.483	83533	0.1680	1	43115	0.172	1.9
17	8.850	22777	0.0458	1	11137	0.047	2.0
18	9.017	8174	0.0164	1	4253	0.017	1.9

45 = 70724u
 (5.1977 x 10)
 = 36.8/50 : 74 :

002379

19	9.150	10049	0.0202	1	4267	0.021	2.4
20	9.350	2804	0.0056	1	1505	0.006	1.9
21	9.533	26560	0.0534	1	5819	0.055	4.6
22	9.783	2701	0.0054	1	1245	0.006	2.2
23	9.917	16290	0.0328	1	4699	0.033	3.5
24	10.117	5874	0.0118	1	2274	0.012	2.6
25	10.250	11384	0.0229	1	4460	0.023	2.6
26	10.600	12574	0.0253	1	3116	0.026	4.0
27	16.933	22176	0.0446	1	7867	0.046	2.8
28	18.000	19983	0.0402	1	5395	0.041	3.7
29	18.600	3966	0.0080	1	1544	0.008	2.6
30	19.200	4978	0.0100	1	1814	0.010	2.7
31	19.867	4329	0.0087	1	1411	0.009	3.1
32	20.617	4508	0.0091	1	1222	0.009	3.7
33	21.467	4260	0.0086	1	949	0.009	4.5
34	22.483	3250	0.0065	1	889	0.007	3.7
35	24.767	34589	0.0696	1	19156	0.071	1.8

Total Area: 49713500 Area Reject: 2000 One sample per 1.000 sec.

```

*****
** 07-17-1996 04:37:49 Version 5.1.5 *****
* Sample Name: GASOLINE 50 PPM SV9606013 Data File: L:AG10-49
* Date: 07-17-1996 04:12:36 Method: DIESEL-2 06-28-1996 14:32:23 # 694
* Interface: 2 Cycle#: 49 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
*****
* Instrument Type: 3400 536-01 Column Type: DB5/.25u
  Solvent Description: HE 2ML/MIN
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD
* Detector 0: FID Detector 1:
* Misc. Information: GAS:NAPHTHA:DIESEL:O-TERPH 05/29/96
*****
Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.000000

```

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.250		0.2127	0.0043%	2127	539	3.9	1		1.0000E-04
2	2.167		4869.9375	97.9938%	48699376	994083	49.0	00		1.0000E-04
3	4.250		2.3588	0.0475%	23588	6604	3.6	1		1.0000E-04
4	4.967		21.3287	0.4292%	213288	90545	2.4	1		1.0000E-04
5	5.333		0.5898	0.0119%	5898	1333	4.4	1		1.0000E-04
6	5.517		1.5718	0.0316%	15719	6920	2.3	1		1.0000E-04
7	5.633		0.6614	0.0133%	6614	1458	4.5	1		1.0000E-04
8	6.117	GASOLINE TO C10	0.3104	0.0062%	5972	2369	2.5	1	0	5.1977E-05
9	6.567		5.2882	0.1064%	52882	21222	2.5	1	-0.8644	1.0000E-04
10	6.700		18.1328	0.3649%	181328	92587	2.0	1		1.0000E-04
11	6.967		0.3024	0.0061%	3024	583	5.2	1		1.0000E-04
12	7.083		7.8829	0.1586%	78829	33739	2.3	1		1.0000E-04
13	7.550		1.0007	0.0201%	10008	2210	4.5	1		1.0000E-04
14	7.950		1.2769	0.0257%	12769	6489	2.0	1		1.0000E-04
15	8.067		9.7324	0.1958%	97325	22746	4.3	1		1.0000E-04
16	8.483		8.3533	0.1681%	83533	43115	1.9	1		1.0000E-04
17	8.850		2.2777	0.0458%	22777	11137	2.0	1		1.0000E-04

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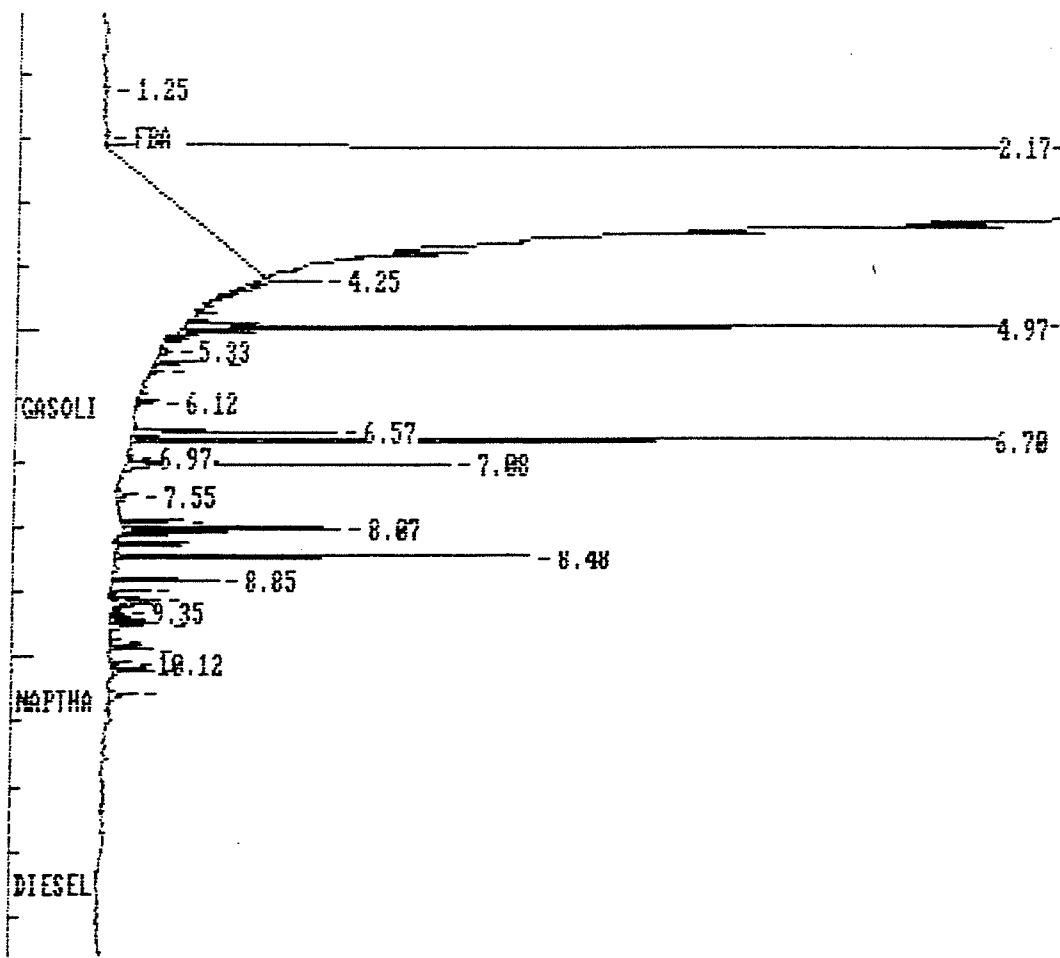
18	9.017	0.8174	0.0164%	8174	4253	1.9 1			1.0000E-04
19	9.150	1.0049	0.0202%	10049	4267	2.4 1			1.0000E-04
20	9.350	0.2804	0.0056%	2804	1505	1.9 1			1.0000E-04
21	9.533	2.6559	0.0534%	26560	5819	4.6 1			1.0000E-04
22	9.783	0.2701	0.0054%	2701	1245	2.2 1			1.0000E-04
	9.917	1.6290	0.0328%	16290	4699	3.5 1			1.0000E-04
24	10.117	0.5874	0.0118%	5874	2274	2.6 1			1.0000E-04
25	10.250	1.1384	0.0229%	11384	4460	2.6 1			1.0000E-04
26	10.600 NAPHTHALENE	0.3863	0.0078%	12574	3116	4.0 1	0	-0.7490	3.0724E-05
27	16.933	2.2176	0.0446%	22176	7867	2.8 1			1.0000E-04
28	18.000 MOTOR OIL	1.4433	0.0290%	19983	5395	3.7 1	0	2.857	7.2227E-05
29	18.600	0.3966	0.0080%	3966	1544	2.6 1			1.0000E-04
30	19.200	0.4977	0.0100%	4978	1814	2.7 1			1.0000E-04
31	19.867	0.4329	0.0087%	4329	1411	3.1 1			1.0000E-04
32	20.617	0.4507	0.0091%	4508	1222	3.7 1			1.0000E-04
33	21.467	0.4260	0.0086%	4260	949	4.5 1			1.0000E-04
34	22.483	0.3250	0.0065%	3250	889	3.7 1			1.0000E-04
35	24.767	3.4589	0.0696%	34589	19156	1.8 1			1.0000E-04

TOTAL AMOUNT = 4969.6372

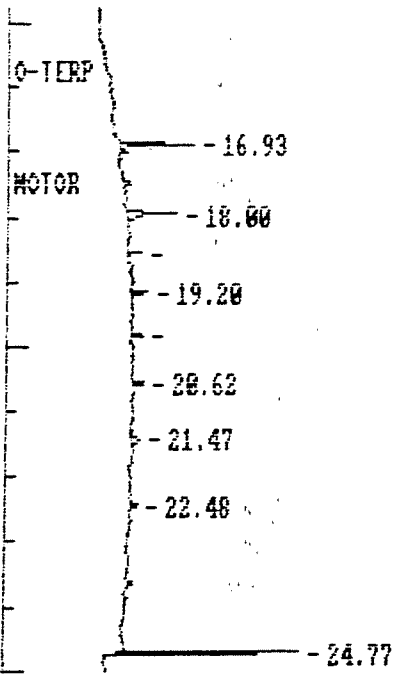
PEAKS NOT FOUND IN THIS RUN

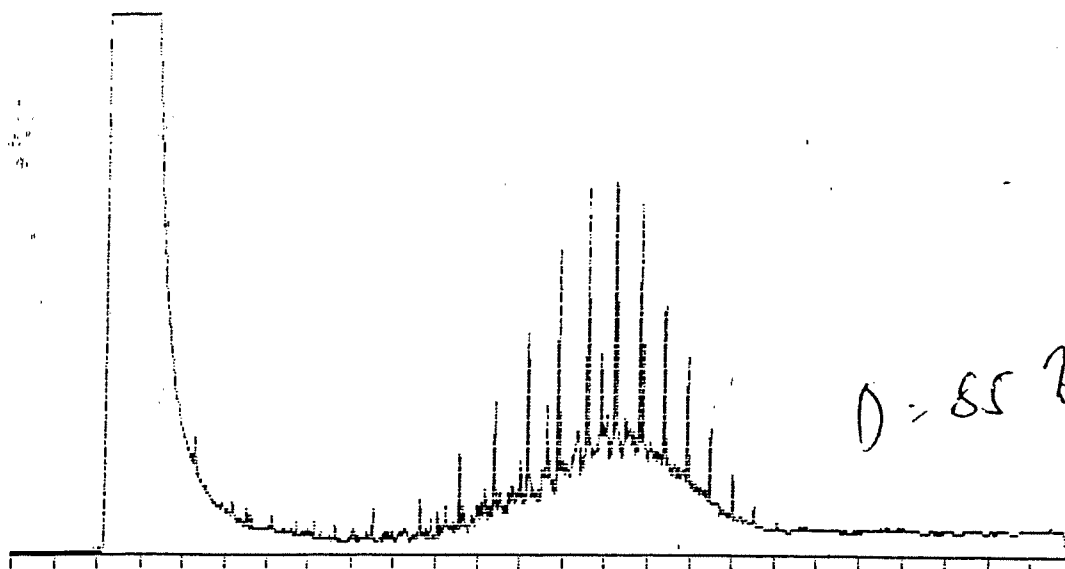
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
DIESEL C10-C25	13.50	DIESEL C10-C25
O-TERPHENYL	15.72	O-TERPHENYL
HYDRAULIC OIL	16.00	HYDRAULIC OIL

Data File = L:AG10-49.PTS Printed on 07-17-1996 at 04:37:50
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



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[Interface 2] 0-25 Min Scale: 100 Mu
 DIESEL 25 Processed: 07-17-1996 05:12:18, segment 1, cycle 50
 End of sequence file reached at cycle 50
 RAW DATA SAVED IN FILE L:AG10-50.PTS

***** AREA PERCENT REPORT *****

***** 07-17-1996 05:12:29 Version 5.1.5 *****
 * Sample Name: DIESEL 250 PPM SV9607030 Data File: L:AG10-50 *
 * Date: 07-17-1996 04:47:15 Method: DIESEL-2 *
 * Interface: 2 Cycle#: 50 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: 3400 536-01 Column Type: DB5/.25u *
 * Solvent Description: HE 2ML/MIN *
 * Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
 * Detector 0: FID Detector 1: *
 * Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96 *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	2.167	48402172	97.242800	0	994290	100.000	48.7
2	5.167	6554	0.0132	1	2946	0.014	2.2
3	5.500	6253	0.0126	1	2763	0.013	2.3
4	5.633	3848	0.0077	1	2099	0.008	1.8
5	6.183	2228	0.0045	1	1141	0.005	2.0
6	6.700	6040	0.0121	1	2163	0.012	2.8
7	7.150	7887	0.0158	1	2950	0.016	2.7
8	7.500	2670	0.0054	1	1158	0.006	2.3
9	7.633	6601	0.0133	1	2699	0.014	2.4
10	8.050	11775	0.0237	1	2276	0.024	5.2
11	8.350	3750	0.0075	1	1295	0.008	2.9
12	8.500	14159	0.0284	1	5753	0.029	2.5
13	8.783	5848	0.0117	1	1328	0.012	4.4
14	8.950	5211	0.0105	1	1409	0.011	3.7
15	9.167	4123	0.0083	1	1064	0.009	3.9
16	9.283	7677	0.0154	1	1887	0.016	4.1
17	9.617	15604	0.0313	1	7049	0.032	2.2

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18	9.783	3421	0.0069	1	1395	0.007	2.5
19	10.050	10178	0.0204	1	4606	0.021	2.2
20	10.133	4640	0.0093	1	1301	0.010	3.6
21	10.233	13317	0.0268	1	4740	0.028	2.8
23	10.550	34881	0.0701	1	13991	0.072	2.5
24	10.867	9960	0.0200	1	2105	0.021	4.7
25	11.100	22433	0.0451	1	2650	0.046	8.5
26	11.183	13359	0.0268	1	4790	0.028	2.8
27	11.300	5575	0.0112	1	2295	0.012	2.4
28	11.400	45639	0.0917	1	20559	0.094	2.2
29	11.550	7612	0.0153	1	3065	0.016	2.5
30	12.000	60691	0.1219	1	8229	0.125	7.4
31	12.167	73314	0.1473	1	30279	0.151	2.4
32	12.417	5356	0.0108	1	1585	0.011	3.4
33	12.517	10170	0.0204	1	3061	0.021	3.3
34	12.617	43459	0.0873	1	13822	0.090	3.1
35	12.883	99991	0.2009	1	42771	0.207	2.3
36	13.267	10886	0.0219	1	1690	0.022	6.4
37	13.550	128762	0.2587	1	50185	0.266	2.6
38	13.867	100499	0.2019	1	18827	0.208	5.3
39	14.183	176887	0.3554	1	48877	0.365	3.6
40	14.633	9286	0.0187	1	3034	0.019	3.1
41	14.800	141793	0.2849	1	45539	0.293	3.1
42	15.050	25814	0.0519	1	3537	0.053	7.3
43	15.383	84170	0.1691	1	29109	0.174	2.9
44	15.617	6538	0.0131	1	2215	0.014	3.0
45	15.933	47187	0.0948	1	22501	0.097	2.1
46	16.467	31199	0.0627	1	13352	0.064	2.3
47	17.000	16343	0.0328	1	7942	0.034	2.1
48	17.200	3059	0.0061	1	1030	0.006	3.0
49	17.533	8794	0.0177	1	3312	0.018	2.7
50	18.050	4353	0.0087	1	1547	0.009	2.8
51	18.617	2594	0.0052	1	685	0.005	3.8

Total Area: 49774552 Area Reject: 2000 One sample per 1.000 sec

```

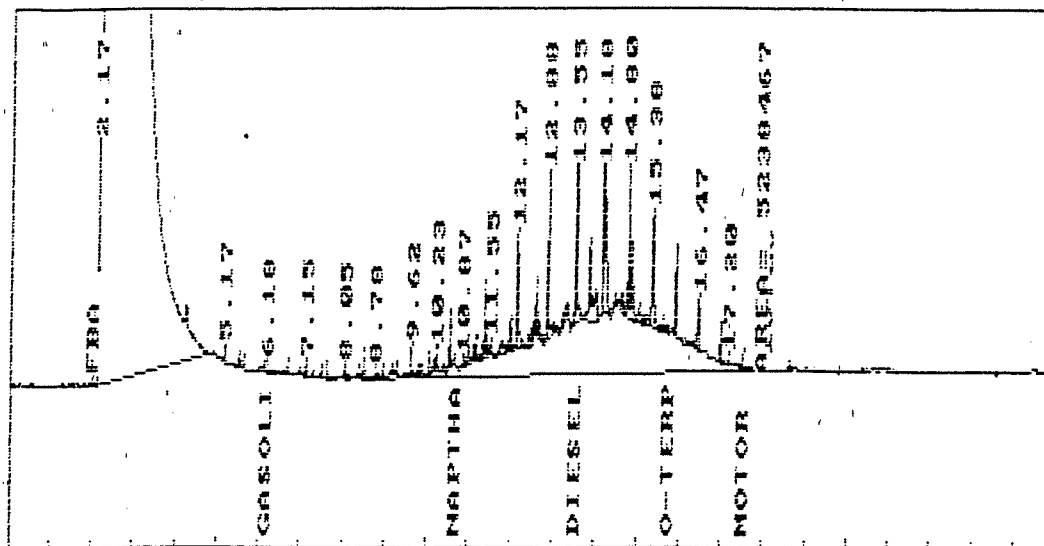
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***** EXTERNAL STANDARD TABLE *****
***** 07-17-1996 05:12:29 Version 5.1.5 *****
* Sample Name: DIESEL 250 PPM SU9607030 Data File: L:AG10-50 *
* Date: 07-17-1996 04:47:15 Method: DIESEL-2 06-28-1996 14:32:23 # 694 *
* Interface: 2 Cycle#: 50 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *
*****
* Instrument Type: 3400 536-01 Column Type: DB5/.25u *
* Solvent Description: HE 2ML/MIN *
* Conditions: 45 4MIN 240-20/MIN 0 HOLD 300-6/MIN-16.25MIN HOLD *
* Detector 0: FID Detector 1: *
* Misc. Information: GAS;NAPTHA;DIESEL;O-TERPH 05/29/96 *
*****
Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1 2.167		4840.2173	97.4220%	48402172	994290	48.7 0V			1.0000E-04

002384

START TIME= 8.433 START HEIGHT= 6991
 STOP TIME= 18.100 STOP HEIGHT= 9147
 AREA = 5238467
 Plot of data file L:AG10-50.PTS
 Date: 07-17-1996 Time: 06:21:47
 Sample Name: DIESEL 250 PPM SU960
 Start Time= 0.02 Stop Time = 25.03 Min. Scale= 5105 Max. Scale= 105105



2	5.167	0.6553	0.0132%	6554	2946	2.2 1		1.0000E-04
3	5.500	0.6253	0.0126%	6253	2763	2.3 1		1.0000E-04
4	5.633	0.3847	0.0077%	3848	2099	1.8 1		1.0000E-04
5	6.183 GASOLINE TO C10	0.1158	0.0023%	2228	1141	2.0 1	0	5.1977E-05
6	6.700	0.6040	0.0122%	6040	2163	2.8 1		1.0000E-04
7	7.150	0.7887	0.0159%	7887	2950	2.7 1		1.0000E-04
8	7.500	0.2670	0.0054%	2670	1158	2.3 1		1.0000E-04
9	7.633	0.6601	0.0133%	6601	2699	2.4 1		1.0000E-04
10	8.050	1.1775	0.0237%	11775	2276	5.2 1		1.0000E-04
11	8.350	0.3750	0.0075%	3750	1295	2.9 1		1.0000E-04
12	8.500	1.4159	0.0285%	14159	5753	2.5 1		1.0000E-04
13	8.783	0.5848	0.0118%	5848	1328	4.4 1		1.0000E-04
14	8.950	0.5211	0.0105%	5211	1409	3.7 1		1.0000E-04
15	9.167	0.4123	0.0083%	4123	1064	3.9 1		1.0000E-04
16	9.283	0.7677	0.0155%	7677	1887	4.1 1		1.0000E-04
17	9.617	1.5604	0.0314%	15604	7049	2.2 1		1.0000E-04
18	9.783	0.3421	0.0069%	3421	1395	2.5 1		1.0000E-04
19	10.050	1.0178	0.0205%	10178	4606	2.2 1		1.0000E-04
20	10.133	0.4639	0.0093%	4640	1301	3.6 1		1.0000E-04
21	10.233	1.3317	0.0268%	13317	4740	2.8 1		1.0000E-04
23	10.550	3.4881	0.0702%	34881	13991	2.5 1		1.0000E-04
24	10.867	0.9959	0.0200%	9960	2105	4.7 1		1.0000E-04
25	11.100	2.2433	0.0452%	22433	2650	8.5 1		1.0000E-04
26	11.183	1.3359	0.0269%	13359	4790	2.8 1		1.0000E-04
27	11.300	0.5575	0.0112%	5575	2295	2.4 1		1.0000E-04
28	11.400	4.5638	0.0919%	45639	20559	2.2 1		1.0000E-04
29	11.550	0.7612	0.0153%	7612	3065	2.5 1		1.0000E-04
30	12.000	6.0691	0.1222%	60691	8229	7.4 1		1.0000E-04
31	12.167	7.3314	0.1476%	73314	30279	2.4 1		1.0000E-04
32	12.417	0.5356	0.0108%	5356	1585	3.4 1		1.0000E-04
33	12.517	1.0170	0.0205%	10170	3061	3.3 1		1.0000E-04
34	12.617	4.3459	0.0875%	43459	13822	3.1 1		1.0000E-04
35	12.883	9.9991	0.2013%	99991	42771	2.3 1		1.0000E-04
36	13.267	1.0886	0.0219%	10886	1690	6.4 1		1.0000E-04
37	13.550 DIESEL C10-C25	5.2258	0.1052%	128762	50185	2.6 1	0	4.0585E-05
38	13.867	10.0499	0.2023%	100499	18827	5.3 1		1.0000E-04
39	14.183	17.6887	0.3560%	176887	48877	3.6 1		1.0000E-04
40	14.633	0.9286	0.0187%	9286	3034	3.1 1		1.0000E-04
41	14.800	14.1793	0.2854%	141793	45539	3.1 1		1.0000E-04
42	15.050	2.5814	0.0520%	25814	3537	7.3 1		1.0000E-04
43	15.383	8.4170	0.1694%	84170	29109	2.9 1		1.0000E-04
44	15.617 O-TERPHENYL	0.2119	0.0043%	6538	2215	3.0 1	0	3.2408E-05
45	15.933 HYDRAULIC OIL	4.0067	0.0806%	47187	22501	2.1 1	0	8.4912E-05
46	16.467	3.1198	0.0628%	31199	13352	2.3 1		1.0000E-04
47	17.000	1.6343	0.0329%	16343	7942	2.1 1		1.0000E-04
48	17.200	0.3059	0.0062%	3059	1030	3.0 1		1.0000E-04
49	17.533 MOTOR OIL	0.6352	0.0128%	8794	3312	2.7 1	0	7.2227E-05
50	18.050	0.4353	0.0088%	4353	1547	2.8 1		1.0000E-04
51	18.617	0.2594	0.0052%	2594	685	3.8 1		1.0000E-04

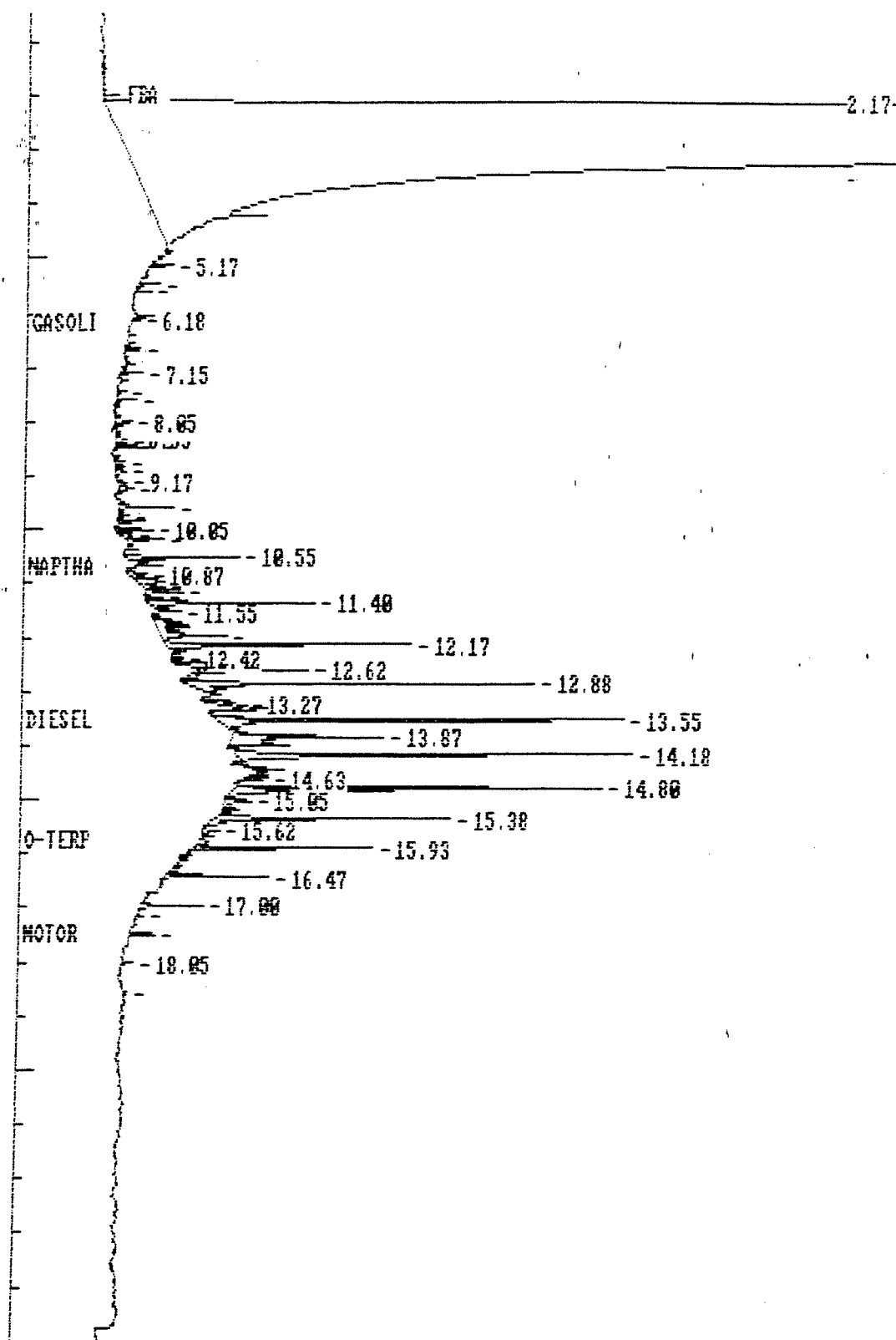
TOTAL AMOUNT = 4968.3003

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
NAPHTHALENE	10.68	NAPHTHALENE

a File = L:AG10-50.PTS Printed on 07-17-1996 at 05:12:30
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts

002386



APPENDIX F
VOLATILES (EPA 524.2)

MDL Summary

002389

der No.: 69512195
ported: 01.23.96

REPORT OF MDL RESULTS

PARAMETER	CUMC	REFL1	REFL2	REFL3	REFL4	REFL5	REFL6	REFL7	AUG	SD	MDL	RDL(AR)	RDL(MAR)
24, 2/VUC 537-03													
1,1,1,2-tetrachloroethane	1.0	0.87	0.85	1.01	0.94	0.88	0.89	0.82	0.894286	0.062944	0.197644	0.5 ug/L	NA ng/kg
1,1,1-Trichloroethane	1.0	0.92	0.90	1.01	1.01	0.94	0.87	0.83	0.925714	0.067542	0.212082	0.5 ug/L	NA ng/kg
1,1,2,2-tetrachloroethane	1.0	1.17	1.27	1.24	1.10	1.04	0.96	0.92	1.100000	0.134784	0.423222	0.5 ug/L	NA ng/kg
1,1,2-Trichloroethane	1.0	1.06	1.12	1.13	1.06	0.99	0.96	0.94	1.037143	0.075435	0.236866	0.5 ug/L	NA ng/kg
1,1-Dichloroethane	1.0	0.91	0.89	1.09	1.05	0.94	0.92	0.85	0.930000	0.087369	0.274339	0.5 ug/L	NA ng/kg
1,1-Dichloroethene	1.0	0.96	0.96	1.05	1.10	0.80	0.91	0.81	0.941429	0.112462	0.353131	0.5 ug/L	NA ng/kg
1,1-Dichloropropene	1.0	0.95	0.94	1.03	1.07	0.98	0.91	0.86	0.962857	0.071114	0.223298	0.5 ug/L	NA ng/kg
1,2,3-Trichlorobenzene	1.0	0.99	1.03	1.11	1.05	0.97	0.89	0.89	0.990000	0.081650	0.256381	0.5 ug/L	NA ng/kg
1,2,3-Trichloropropane	1.0	1.06	1.33	1.05	1.21	1.07	1.02	1.06	1.114286	0.112969	0.354723	0.5 ug/L	NA ng/kg
1,2,4-Trichlorobenzene	1.0	0.91	0.96	1.12	1.03	0.95	0.88	0.88	0.961429	0.087451	0.274396	0.5 ug/L	NA ng/kg
1,2,4-Trichlorobenzene	1.0	0.90	0.92	1.09	1.01	0.95	0.88	0.87	0.945714	0.079343	0.249137	0.5 ug/L	NA ng/kg
1,2,4-Trinethylbenzene	1.0	1.12	1.41	1.13	1.12	0.99	0.87	0.87	1.044286	0.194067	0.609370	1 ug/L	NA ng/kg
1,2-Dibromo-3-chloropropane	1.0	1.06	1.13	1.12	1.03	0.98	0.94	0.86	1.017143	0.097761	0.306970	0.5 ug/L	NA ng/kg
1,2-Dibromoethane	1.0	1.00	1.06	1.15	1.04	0.98	0.93	0.94	1.014286	0.076563	0.240408	0.5 ug/L	NA ng/kg
1,2-Dichloroethane	1.0	0.94	1.01	1.12	1.04	0.97	0.94	0.90	0.988371	0.074482	0.283873	0.5 ug/L	NA ng/kg
1,2-Dichlorobenzene	1.0	0.95	0.94	1.09	1.07	0.97	0.89	0.91	0.974286	0.076997	0.241771	0.5 ug/L	NA ng/kg
1,3,5-Trinethylbenzene	1.0	0.88	0.91	1.07	1.00	0.93	0.90	0.84	0.932857	0.077828	0.244380	0.5 ug/L	NA ng/kg
1,3-Dichlorobenzene	1.0	0.91	0.94	1.12	1.02	0.94	0.92	0.88	0.961429	0.082144	0.237982	0.5 ug/L	NA ng/kg
1,3-Dichloropropane	1.0	1.04	1.12	1.13	1.05	1.01	0.99	0.92	1.037143	0.073420	0.230399	0.5 ug/L	NA ng/kg
1,4-Dichlorobenzene	1.0	0.92	0.95	1.06	1.04	0.93	0.94	0.87	0.938571	0.067683	0.212525	0.5 ug/L	NA ng/kg
2,2-Dichloropropane	1.0	0.91	0.87	0.99	0.99	0.89	0.90	0.79	0.905714	0.069727	0.218943	0.5 ug/L	NA ng/kg
2-Chlorotoluene	1.0	0.98	0.97	1.12	1.07	0.95	0.94	0.95	0.977143	0.069693	0.218836	0.5 ug/L	NA ng/kg
4-Chlorotoluene	1.0	0.88	0.91	1.15	1.09	0.92	0.91	0.83	0.935714	0.117453	0.368802	0.5 ug/L	NA ng/kg
acetone	4.0	7.41	7.24	7.14	7.07	4.93	5.60	5.82	6.438571	0.986195	3.096652	10 ug/L	NA ng/kg
Bromobenzene	1.0	0.95	0.98	1.13	1.09	1.01	0.93	0.93	1.005714	0.076563	0.240408	0.5 ug/L	NA ng/kg
Bromochloroethane	1.0	0.97	0.96	1.08	1.03	0.96	0.90	0.87	0.967143	0.071581	0.224764	0.5 ug/L	NA ng/kg
Bromodichloroethane	1.0	0.89	0.92	1.03	0.97	0.92	0.92	0.86	0.930000	0.055377	0.173884	0.5 ug/L	NA ng/kg

002390

Order No.: 69512195
Reported: 01.23.96

REPORT OF MDL RESULTS

Page 2

PARAMETER	CDMC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AUG	SD	MDL	MDL (AQ)	MDL (MAQ)
E524. 2/VOC, cont'd													
Bromonethane	1.0	0.96	0.88	1.08	1.05	0.96	0.93	0.86	0.960000	0.081445	0.255737	0.5 ug/L	NA ng/kg
Benzene	1.0	0.95	0.96	1.10	1.06	0.99	0.93	0.92	0.987143	0.068243	0.214283	0.5 ug/L	NA ng/kg
Bromoform	1.0	0.89	0.96	0.93	0.84	0.79	0.77	0.72	0.842857	0.088264	0.277149	0.5 ug/L	NA ng/kg
Chlorobenzene	1.0	0.94	0.93	1.10	1.04	0.96	0.90	0.89	0.965714	0.076997	0.241771	0.5 ug/L	NA ng/kg
Carbon tetrachloride	1.0	0.95	0.73	0.84	0.87	0.82	0.74	0.66	0.804286	0.095718	0.300533	0.5 ug/L	NA ng/kg
Chloroethane	1.0	0.95	0.94	1.01	1.08	1.01	0.87	0.82	0.954286	0.088835	0.279005	0.5 ug/L	NA ng/kg
Chloroform	1.0	0.95	0.96	1.11	1.06	0.97	0.93	0.91	0.984286	0.072997	0.229211	0.5 ug/L	NA ng/kg
Chloronethane	1.0	0.95	0.97	1.08	1.12	1.04	0.92	0.91	0.998571	0.081941	0.257293	0.5 ug/L	NA ng/kg
Dibromochloromethane	1.0	0.90	0.95	1.00	0.92	0.88	0.88	0.80	0.904286	0.062678	0.196809	0.5 ug/L	NA ng/kg
Dibromomethane	1.0	1.00	1.09	1.11	1.00	0.94	0.96	0.86	0.994286	0.086382	0.271239	0.5 ug/L	NA ng/kg
Ethylbenzene	1.0	0.91	0.91	1.07	1.03	0.93	0.90	0.84	0.941429	0.080089	0.251479	0.5 ug/L	NA ng/kg
Freon 113	1.0	0.92	0.92	1.00	1.06	0.88	0.89	0.84	0.930000	0.075498	0.237064	0.5 ug/L	NA ng/kg
Freon 12	1.0	0.94	0.97	0.99	1.11	1.00	0.89	0.87	0.967143	0.079732	0.250358	0.5 ug/L	—
Freon 123	1.0	0.95	0.96	1.03	1.09	0.99	0.91	0.87	0.971429	0.073582	0.231047	0.5 ug/L	—
Hexachlorobutadiene	1.0	0.86	0.89	1.15	0.99	0.92	0.86	0.81	0.925714	0.113850	0.357489	0.5 ug/L	NA ng/kg
Isopropylbenzene	1.0	0.92	0.91	1.07	1.01	0.94	0.89	0.85	0.941429	0.074929	0.235277	0.5 ug/L	NA ng/kg
Methyl ethyl ketone	4.0	5.23	3.48	4.77	4.88	3.80	4.33	3.42	4.301429	0.727082	2.283037	5 ug/L	NA ng/kg
Methyl isobutyl ketone	4.0	4.86	5.77	4.94	4.33	3.94	3.67	4.20	4.530000	0.713115	2.239181	5 ug/L	—
Methylene chloride	1.0	1.36	1.01	1.19	1.07	1.04	1.04	0.86	1.081429	0.156570	0.491630	1 ug/L	NA ng/kg
N-Butylbenzene	1.0	0.94	0.92	1.09	1.02	0.95	0.89	0.84	0.950000	0.082865	0.260196	0.5 ug/L	NA ng/kg
N-Propylbenzene	1.0	0.93	0.93	1.07	1.04	0.95	0.90	0.86	0.954286	0.075024	0.235375	0.5 ug/L	NA ng/kg
Naphthalene	1.0	0.99	1.11	1.04	0.95	0.98	0.81	0.81	0.953714	0.111931	0.351463	1 ug/L	NA ng/kg
Styrene	1.0	0.89	0.92	1.05	1.02	0.93	0.90	0.84	0.935714	0.074130	0.232768	0.5 ug/L	NA ng/kg
Trichloroethene	1.0	0.94	0.91	1.07	1.04	1.00	0.91	0.89	0.965714	0.070912	0.222664	0.5 ug/L	NA ng/kg
Trichlorofluoromethane	1.0	0.91	0.94	0.97	1.06	1.00	0.89	0.83	0.942857	0.075636	0.237560	0.5 ug/L	NA ng/kg
Toluene	1.0	0.92	0.92	1.09	1.05	0.97	0.91	0.88	0.962857	0.078680	0.247033	0.5 ug/L	NA ng/kg
Tetrachloroethene	1.0	0.90	0.91	1.03	1.02	0.95	0.89	0.85	0.935714	0.067788	0.212854	0.5 ug/L	NA ng/kg

002391

Order No.: 69512195
Reported: 01.23.96

REPORT OF MDL RESULTS

Page 3

PARAMETER	CMC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AVG	SD	MDL	MDL(AQ)	MDL(MAQ)
E524.2/VBC, cont'd													
Vinyl chloride	1.0	0.93	0.91	0.97	1.05	0.98	0.92	0.83	0.941429	0.068417	0.214829	0.5 ug/L	HA ng/kg
cis-1,2-Dichloroethene	1.0	0.90	0.91	1.06	1.04	0.95	0.91	0.85	0.945714	0.077213	0.242449	0.5 ug/L	HA ng/kg
cis-1,3-Dichloropropene	1.0	0.89	0.88	1.01	0.96	0.88	0.87	0.80	0.898571	0.067683	0.212525	0.5 ug/L	HA ng/kg
m- and p-Xylene Isomers	2.0	1.86	1.87	2.18	2.11	1.92	1.80	1.74	1.925714	0.161437	0.506912	1 ug/L	HA ng/kg
o-Xylene	1.0	0.93	0.92	1.12	1.04	0.93	0.89	0.87	0.957143	0.089762	0.281853	0.5 ug/L	HA ng/kg
p-Isopropyl toluene	1.0	0.90	0.90	1.10	1.03	0.94	0.88	0.83	0.940000	0.093690	0.293998	0.5 ug/L	HA ng/kg
sec-Butylbenzene	1.0	0.90	0.90	1.07	1.01	0.95	0.88	0.84	0.935714	0.080178	0.251759	0.5 ug/L	HA ng/kg
trans-1,2-Dichloroethene	1.0	0.85	0.86	1.12	0.97	1.16	0.82	0.89	0.952857	0.136391	0.428896	0.5 ug/L	HA ng/kg
trans-1,3-Dichloropropene	1.0	0.90	0.90	1.00	0.95	0.84	0.86	0.80	0.892857	0.067507	0.211972	0.5 ug/L	HA ng/kg
tert-Butylbenzene	1.0	0.91	0.91	1.07	1.01	0.94	0.89	0.86	0.941429	0.073582	0.231047	0.5 ug/L	HA ng/kg
1,2-Dichlorobenzene-d4 Rep.	5.00	3.74	3.87	3.72	4.09	3.92	3.93	3.90	3.881429	0.125090	0.392783	---	---
1,2-Dichlorobenzene-d4 Theo	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	N/A	N/A	N/A	---	---
4-Bromofluorobenzene Rep.	5.00	4.77	4.87	4.79	5.09	4.89	4.97	5.00	4.911429	0.115332	0.362770	---	---
4-Bromofluorobenzene Theo.	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	N/A	N/A	N/A	---	---

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**Standard Operating Procedure MS00792.G -
Volatile Organics in Drinking Water by GC/MS**

BCA STANDARD OPERATING PROCEDURE

SOP# MS00792.G
Tier 3 Rev. 09/14/95
Page 1 of 9

VOLATILE ORGANIC COMPOUNDS IN DRINKING WATERS BY GC/MS

Analytes

Chloromethane	1,1,1,2-Tetrachloroethane
Vinyl chloride	Ethylbenzene
Bromomethane	m- and p-Xylene Isomers
Chloroethane	o-Xylene
Trichlorofluoromethane	Styrene
1,1-Dichloroethene	Bromoform
Methylene chloride	Isopropylbenzene
trans-1,2-Dichloroethene	1,1,2,2-Tetrachloroethane
1,1-Dichloroethane	Bromobenzene
2,2-Dichloropropane	1,2,3-Trichloropropane
cis-1,2-Dichloroethene	N-Propylbenzene
Chloroform	2-Chlorotoluene
Bromochloromethane	1,3,5-Trimethylbenzene
1,1,1-Trichloroethane	4-Chlorotoluene
Carbon Tetrachloride	tert-Butylbenzene
1,1-Dichloropropene	1,2,4-Trimethylbenzene
Benzene	sec-Butylbenzene
1,2-Dichloroethane	p-Isopropyl toluene
Trichloroethene	1,3-Dichlorobenzene
1,2-Dichloropropane	1,4-Dichlorobenzene
Bromodichloromethane	N-Butylbenzene
Dibromomethane	1,2-Dichlorobenzene
trans-1,3-Dichloropropene	1,2-Dibromo-3-chloropropane
1,2,4-Trichlorobenzene	Chlorobenzene
cis-1,3-Dichloropropene	Hexachlorobutadiene
Toluene	Naphthalene
1,1,2-Trichloroethane	1,2,3-Trichlorobenzene
Tetrachloroethene	Freon 113
1,3-Dichloropropane	1,2-Dibromoethane
Dibromochloromethane	Dichlorodifluoromethane

A. Summary

Volatile organic compounds in drinking water samples are removed by the purge and trap method and injected onto a gas chromatograph interfaced to a mass spectrometer. The components are separated and detected, providing a qualitative and quantitative analysis.

B. Safety

1. Prepare all standards in a hood.

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2. Wear gloves and safety goggles when handling standards and samples.

C. Apparatus

1. Sample Bottles: 40 mL vials with Teflon lined caps, precleaned (I-Chem, Hayward, CA)
2. Microsyringes: 5-uL, 10-uL, 25-uL, 50-uL, 100-uL, 250-uL, 500-uL, 1000-uL.
3. Syringe valve: Two-way, with Luer ends.
4. Syringe: 30-mL.
5. Disposable pipets.
6. Volumetric flasks.
7. Analytical balance (± 0.0001 g).
8. Gas Chromatograph/Mass Spectrometer:

A GC/MS system with the following capabilities:
Temperature programmable gas chromatograph; mass spec scanning from 35-260 m/z every 1 second, using 70 volts electron energy in the EI mode; GC/MS interface made of glass; data system allowing continuous acquisition; software allowing data integration and acquisition; EPA/NIH mass spectral library available.

Finnigan Incos 50, XL and 500 and Hewlett-Packard 5970B and 5988 all meet the above specifications.

9. GC Columns:

75-m x 0.53 mm I.D. DB 624, 105-m x 0.53 mm I.D.
Rtx-502.2, or equivalent

10. Purge and Trap unit:

The sample purger and the desorber must all be configured according to section 4.11 of SW-846.

The three-stage trap supplied by Supelco, Bellefonte, PA. satisfies the requirement. The trap is changed every six months.

The purge and trap units, manufactured by Tekmar, Cincinnati, OH., and O.I. Corporation, College Station, Texas, can be configured to meet the specifications.

11. Autosampler with spargers

D. Reagents

1. Reagent water:

Deionized water which has been heated and purged for a minimum of 30 minutes to remove all volatile organic contaminants.

2. Methanol (Burdick and Jackson purge and trap grade)

3. Stock Standard Solutions: commercially available solutions of mixed volatiles, or high-concentration solutions prepared from the neat volatile compounds. The expiration date of all standards is determined by one of two methods:

- a. If the expiration date of the standard is supplied by the manufacturer, the standard must not be used after that date.
- b. If no date is supplied, the date of expiration is calculated to be 6 months from the date the vial is opened.

Any standard which shows signs of degradation must be replaced.

4. Internal Standards

A mixture of three compounds in methanol, added to all samples prior to analysis, by which the detected compounds are quantitated. Those compounds are: Methylene chloride-d₂, Fluorobenzene, and 1,2-Dichlorobenzene-d₄. Store working solution in teflon-sealed Mininert screw-cap vial at -10 to -20 degrees C.

5. Surrogate Standards

A mixture of three additional compounds in methanol, added to all samples prior to analysis to monitor extraction/purge and trap efficiency, system performance, and matrix effects. Those compounds are: 4-Bromofluorobenzene, 1,2-Dichloroethane-d₄, and Toluene-d₈. Store working solution in teflon-sealed Mininert screw-cap vial at -10 to -20 degrees C.

6. Matrix Spiking Solution:

The matrix spiking solution comes from the same source as the calibration standards.

Store working solution in teflon-sealed Mininert screw-cap vial at -10 to -20 degrees C. Dispose of 002395

**RESULTS OF GROUNDWATER MONITORING
FIRST AND SECOND QUARTERS 1996
AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

**VOLUME III
Quality Assurance/Quality Control Report
Second Quarter 1996
1 of 2**

Prepared for:
AlliedSignal Aerospace
2525 West 190th Street
Torrance, California 90504

Prepared by:
SECOR International Incorporated
3437 Empresa Drive, Suite A
San Luis Obispo, California 93401

May 14, 1997
Job Number: A0057-001-01/ASN45, ASN47

**RESULTS OF GROUNDWATER MONITORING
FIRST AND SECOND QUARTERS 1996
AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

**VOLUME III
Quality Assurance/Quality Control Report
Second Quarter 1996
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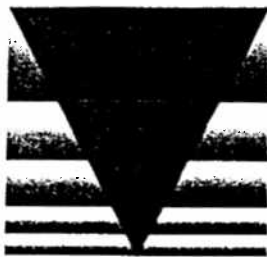
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- 3. QC Summaries
- B. RWQCB Forms
- C. Case Narrative
- D. General Chemistry
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 - b. Turbidity Method 180.1; SOP GE01489.G
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Our Quality Control Is Your Quality Assurance

ANALYTICAL REPORT

LOG NO: G96-07-189

Received: 09 JUL 96

Mailed : 22 JUL 96

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
07-189-1	Pump Blank	09 JUL 96
PARAMETER	07-189-1	
E524.2/VOC (524.2)		
Date Analyzed	07/16/96	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.5	
1,1,1-Trichloroethane, ug/L	<0.5	
1,1,2,2-Tetrachloroethane, ug/L	<0.5	
1,1,2-Trichloroethane, ug/L	<0.5	
1,1-Dichloroethane, ug/L	<0.5	
1,1-Dichloroethene, ug/L	<0.5	
1,1-Dichloropropene, ug/L	<0.5	
1,2,3-Trichlorobenzene, ug/L	<0.5	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.5	
1,2,4-Trimethylbenzene, ug/L	<0.5	
1,2-Dibromo-3-chloropropane, ug/L	<1	
1,2-Dibromoethane, ug/L	<0.5	
1,2-Dichloroethane, ug/L	<0.5	
1,2-Dichlorobenzene, ug/L	<0.5	
1,2-Dichloropropane, ug/L	<0.5	
1,3,5-Trimethylbenzene, ug/L	<0.5	
1,3-Dichlorobenzene, ug/L	<0.5	
1,3-Dichloropropane, ug/L	<0.5	
1,4-Dichlorobenzene, ug/L	<0.5	
2,2-Dichloropropane, ug/L	<0.5	
2-Chlorotoluene, ug/L	<0.5	
4-Chlorotoluene, ug/L	<0.5	
Bromobenzene, ug/L	<0.5	
Bromochloromethane, ug/L	<0.5	



Our Quality Control Is Your Quality Assurance

LOG NO: G96-07-189

Received: 09 JUL 96

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Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
07-189-1	Pump Blank	09 JUL 96
PARAMETER	07-189-1	
Bromodichloromethane, ug/L	<0.5	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.5	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.5	
Carbon Tetrachloride, ug/L	<0.5	
Chloroethane, ug/L	<0.5	
Chloroform, ug/L	1.4	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.5	
Dibromomethane, ug/L	<0.5	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.5	
Freon 113, ug/L	<0.5	
Hexachlorobutadiene, ug/L	<0.5	
Isopropylbenzene, ug/L	<0.5	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<0.5	
N-Propylbenzene, ug/L	<0.5	
Naphthalene, ug/L	0.66	
Styrene, ug/L	<0.5	
Trichloroethene, ug/L	1.2	
Trichlorofluoromethane, ug/L	<0.5	
Toluene, ug/L	43	
Tetrachloroethene, ug/L	1.4	
Vinyl chloride, ug/L	<0.5	
cis-1,2-Dichloroethene, ug/L	1.0	



Our Quality Control Is Your Quality Assurance

LOG NO: G96-07-189

Received: 09 JUL 96

Mailed : 22 JUL 96

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
07-189-1	Pump Blank	09 JUL 96
PARAMETER	07-189-1	
cis-1,3-Dichloropropene, ug/L	<0.5	
m- and p-Xylene Isomers, ug/L	<1	
o-Xylene, ug/L	<0.5	
p-Isopropyl toluene, ug/L	<0.5	
sec-Butylbenzene, ug/L	<0.5	
trans-1,2-Dichloroethene, ug/L	<0.5	
trans-1,3-Dichloropropene, ug/L	<0.5	
tert-Butylbenzene, ug/L	<0.5	
Other E524.2/VOC (524.2)	---	
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	9.71	
1,2-Dichlorobenzene-d4 Theo., ug/L	10.0	
4-Bromofluorobenzene Rep., ug/L	10.2	
4-Bromofluorobenzene Theo., ug/L	10.0	

R. Toghiani For G96
Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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BCA Log Number: G9607189

KEY: AQ—Aqueous NA—Nonaqueous SI—Solid

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.

BC ANALYTICAL

: ORDER PLACED FOR CLIENT: SECOR 9607189 :
: BC ANALYTICAL : GLEN LAB : 09:29:33 30 DEC 1996 - P. 1 :
=====

SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE..... ANALYZED	METHOD.....	EQUIP.	BATCH..	ID.NO
9607189*1	Pump Blank	VOA,524.2	07.16.96	524.2	537-03	96421	7430

Notes: Equipment = BC Analytical identification number for a
particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of
analyst.

002404

APPENDIX A
QC SUMMARY

AQUEOUS SAMPLES

AQUEOUS SAMPLES		METHOD BLANK				LAB CONTROL				MATRIX QC					
UNITS	RESULT	RDL	FLG	LCS	LCSD	RPD	FLG	LCL	UCL	RPD	FLG	LCL	UCL	RPD	FLG
Batch: V0A.524*96421 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap															
1,1,1,2-Tetrachloroethane	ug/L	0	0.5	-	109	-	106	-	73	134	3	20	-	-	-
1,1,1-Trichloroethane	ug/L	0	0.5	-	113	-	102	-	73	122	10	15	-	-	-
1,1,2,2-Tetrachloroethane	ug/L	0	0.5	-	108	-	106	-	64	139	2	17	-	-	-
1,1,2-Trichloroethane	ug/L	0	0.5	-	110	-	109	-	67	144	1	20	-	-	-
1,1-Dichloroethane	ug/L	0	0.5	-	110	-	106	-	71	125	4	23	-	-	-
1,1-Dichloroethene	ug/L	0	0.5	-	114	-	116	-	70	125	2	21	-	-	-
1,1-Dichloropropene	ug/L	0	0.5	-	112	-	109	-	73	121	3	18	-	-	-
1,2,3-Trichlorobenzene	ug/L	0	0.5	-	116	-	113	-	59	147	3	23	-	-	-
1,2,3-Trichloropropane	ug/L	0	0.5	-	117	-	118	-	62	140	1	28	-	-	-
1,2,4-Trichlorobenzene	ug/L	0	0.5	-	114	-	111	-	64	137	3	16	-	-	-
1,2,4-Trimethylbenzene	ug/L	0	0.5	-	111	-	105	-	65	129	6	22	-	-	-
1,2-Dibromo-3-chloropropane	ug/L	0	1	-	113	-	107	-	45	158	5	21	-	-	-
1,2-Dibromoethane	ug/L	0	0.5	-	111	-	108	-	67	144	3	22	-	-	-
1,2-Dichloroethane	ug/L	0	0.5	-	112	-	107	-	69	133	5	15	-	-	-
1,2-Dichlorobenzene	ug/L	0	0.5	-	110	-	107	-	70	130	3	13	-	-	-
1,2-Dichloropropane	ug/L	0	0.5	-	106	-	104	-	71	128	2	12	-	-	-
1,3,5-Trimethylbenzene	ug/L	0	0.5	-	110	-	104	-	71	120	6	38	-	-	-
1,3-Dichlorobenzene	ug/L	0	0.5	-	108	-	106	-	72	125	2	13	-	-	-
1,3-Dichloropropane	ug/L	0	0.5	-	108	-	106	-	68	142	2	21	-	-	-
1,4-Dichlorobenzene	ug/L	0	0.5	-	110	-	107	-	71	127	3	14	-	-	-
2,2-Dichloropropane	ug/L	0	0.5	-	78	-	6	Q	70	129	171	15	Q	-	-
2-Chlorotoluene	ug/L	0	0.5	-	106	-	102	-	69	123	4	13	-	-	-
4-Chlorotoluene	ug/L	0	0.5	-	114	-	109	-	68	126	4	13	-	-	-
Bromobenzene	ug/L	0	0.5	-	106	-	105	-	72	123	1	12	-	-	-
Bromochloromethane	ug/L	0	0.5	-	109	-	108	-	73	128	1	14	-	-	-
Bromodichloromethane	ug/L	0	0.5	-	108	-	107	-	69	137	1	19	-	-	-
Bromomethane	ug/L	0	0.5	-	106	-	104	-	62	133	2	17	-	-	-
Benzene	ug/L	0	0.5	-	106	-	105	-	74	121	1	15	-	-	-
Bromoform	ug/L	0	0.5	-	110	-	107	-	66	151	3	23	-	-	-
Chlorobenzene	ug/L	0	0.5	-	110	-	105	-	71	130	5	19	-	-	-
Carbon Tetrachloride	ug/L	0	0.5	-	110	-	106	-	71	126	4	18	-	-	-
Chloroethane	ug/L	0	0.5	-	106	-	100	-	68	123	6	16	-	-	-
Chloroform	ug/L	0	0.5	-	124	-	122	-	72	124	2	13	-	-	-
Chloromethane	ug/L	0	0.5	-	110	-	107	-	60	125	3	30	-	-	-
Dibromochloromethane	ug/L	0	0.5	-	108	-	104	-	67	144	4	22	-	-	-
Dibromomethane	ug/L	0	0.5	-	110	-	109	-	74	139	1	20	-	-	-
Dichlorodifluoromethane	ug/L	0	0.5	-	113	-	106	-	46	146	6	-	-	-	-

002406

002406

AQUEOUS SAMPLES

METHOD BLANK				LAB CONTROL				MATRIX QC			
UNITS	RESULT	ROL	FLG	LCS	LCSD	LCL	UCL	RPD	MS	MSD	RPD
GC/MS for Volatile Organics, Capillary Column, Purge and trap, con't											
ug/L		0.5	-	109	105	74	125	4	17	-	-
Ethylbenzene	0	0.5	-	109	105	74	125	4	17	-	-
Freon 113	0	0.5	-	117	110	52	140	6	-	-	-
Hexachlorobutadiene	0	0.5	-	115	111	65	130	4	17	-	-
Isopropylbenzene	0	0.5	-	111	106	72	119	5	14	-	-
Methylene chloride	0.79	1	-	128	121	66	132	6	13	-	-
N-Butylbenzene	0	0.5	-	114	107	68	125	6	16	-	-
N-Propylbenzene	0	0.5	-	111	105	72	119	6	14	-	-
Naphthalene	0.27	1	-	118	110	49	162	7	32	-	-
Styrene	0	0.5	-	112	107	70	133	5	48	-	-
Trichloroethene	0	0.5	-	111	108	74	122	3	14	-	-
Trichlorofluoromethane	0	0.5	-	118	111	57	145	6	19	-	-
Toluene	0	0.5	-	109	105	75	124	4	21	-	-
Tetrachloroethene	0	0.5	-	111	108	78	123	3	16	-	-
Vinyl chloride	0	0.5	-	111	108	64	132	3	17	-	-
cis-1,2-Dichloroethene	0	0.5	-	110	136	75	124	21	13	Q	-
cis-1,3-Dichloropropene	0	0.5	-	107	97	74	135	10	19	-	-
m- and p-Xylene Isomers	0	1	-	110	106	65	134	4	25	-	-
o-Xylene	0	0.5	-	109	105	71	130	4	21	-	-
p-Isopropyl toluene	0	0.5	-	115	109	70	122	5	20	-	-
sec-Butylbenzene	0	0.5	-	114	107	70	122	6	15	-	-
trans-1,2-Dichloroethene	0	0.5	-	112	109	72	123	3	15	-	-
trans-1,3-Dichloropropene	0	0.5	-	106	75	71	137	35	23	Q	-
tert-Butylbenzene	0	0.5	-	114	108	71	120	5	15	-	-
[1,2-Dichlorobenzene-d4]	102	-	-	99	98	55	118	-	-	-	-
[4-Bromofluorobenzene]	106	-	-	99	97	77	127	-	-	-	-

002407

AQUEOUS SAMPLES

Batch: VOA,524*96421 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap

Date Analyzed	Dilution Factor	B6071289*1		C6072391*1		C6072392*1		N/A				T
		MB	LC	LT	LC	LT	LT	R1	R2	S1	S2	
1,1,1,2-Tetrachloroethane	ug/L	0	10.9	10.0	10.6	10.0	1	-	-	-	-	-
1,1,1-Trichloroethane	ug/L	0	11.3	10.0	10.2	10.0	1	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/L	0	10.8	10.0	10.6	10.0	1	-	-	-	-	-
1,1,2-Trichloroethane	ug/L	0	11.0	10.0	10.9	10.0	1	-	-	-	-	-
1,1-Dichloroethane	ug/L	0	11.0	10.0	10.6	10.0	1	-	-	-	-	-
1,1-Dichloroethene	ug/L	0	11.4	10.0	11.6	10.0	1	-	-	-	-	-
1,1-Dichloropropene	ug/L	0	11.2	10.0	10.9	10.0	1	-	-	-	-	-
1,2,3-Trichlorobenzene	ug/L	0	11.6	10.0	11.3	10.0	1	-	-	-	-	-
1,2,3-Trichloropropane	ug/L	0	11.7	10.0	11.8	10.0	1	-	-	-	-	-
1,2,4-Trichlorobenzene	ug/L	0	11.4	10.0	11.1	10.0	1	-	-	-	-	-
1,2,4-Trimethylbenzene	ug/L	0	11.1	10.0	10.5	10.0	1	-	-	-	-	-
1,2-Dibromo-3-chloropropane	ug/L	0	11.3	10.0	10.7	10.0	1	-	-	-	-	-
1,2-Dibromoethane	ug/L	0	11.1	10.0	10.8	10.0	1	-	-	-	-	-
1,2-Dichloroethane	ug/L	0	11.2	10.0	10.7	10.0	1	-	-	-	-	-
1,2-Dichlorobenzene	ug/L	0	11.0	10.0	10.7	10.0	1	-	-	-	-	-
1,3,5-Trimethylbenzene	ug/L	0	10.6	10.0	10.4	10.0	1	-	-	-	-	-
1,3-Dichlorobenzene	ug/L	0	11.0	10.0	10.4	10.0	1	-	-	-	-	-
1,3-Dichloropropane	ug/L	0	10.8	10.0	10.6	10.0	1	-	-	-	-	-
1,4-Dichlorobenzene	ug/L	0	10.8	10.0	10.6	10.0	1	-	-	-	-	-
2,2-Dichloropropane	ug/L	0	11.0	10.0	10.7	10.0	1	-	-	-	-	-
2-Chlorotoluene	ug/L	0	7.82	10.0	0.62	10.0	1	-	-	-	-	-
4-Chlorotoluene	ug/L	0	10.6	10.0	10.2	10.0	1	-	-	-	-	-
Bromobenzene	ug/L	0	11.4	10.0	10.9	10.0	1	-	-	-	-	-
Bromochloromethane	ug/L	0	10.6	10.0	10.5	10.0	1	-	-	-	-	-
Bromodichloromethane	ug/L	0	10.9	10.0	10.8	10.0	1	-	-	-	-	-
Bromomethane	ug/L	0	10.8	10.0	10.7	10.0	1	-	-	-	-	-
Benzene	ug/L	0	10.6	10.0	10.4	10.0	1	-	-	-	-	-
Bromoform	ug/L	0	10.6	10.0	10.5	10.0	1	-	-	-	-	-
Chlorobenzene	ug/L	0	11.0	10.0	10.7	10.0	1	-	-	-	-	-
Carbon Tetrachloride	ug/L	0	11.0	10.0	10.5	10.0	1	-	-	-	-	-
Chloroethane	ug/L	0	11.0	10.0	10.6	10.0	1	-	-	-	-	-
Chloroform	ug/L	0	10.6	10.0	10.0	10.0	1	-	-	-	-	-
Chloromethane	ug/L	0	12.4	10.0	12.2	10.0	1	-	-	-	-	-
Dibromochloromethane	ug/L	0	11.0	10.0	10.7	10.0	1	-	-	-	-	-

002408

AQUEOUS SAMPLES

Batch: VOA,524*96421 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap, con't

	86071289*1	C6072391*1	C6072392*1	UNITS	MB	LC	LT	LC	LT	N/A	R1	R2	S1	S2	T
Dibromomethane	0	11.0	10.0	10.9	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Dichlorodifluoromethane	0	11.3	10.0	10.6	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Ethylbenzene	0	10.9	10.0	10.5	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Freon 113	0	11.7	10.0	11.0	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Hexachlorobutadiene	0	11.5	10.0	11.1	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Isopropylbenzene	0	11.1	10.0	10.6	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Methylene chloride	0.79	12.8	10.0	12.1	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
N-Butylbenzene	0	11.4	10.0	10.7	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
N-Propylbenzene	0	11.1	10.0	10.5	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Naphthalene	0.27	11.8	10.0	11.0	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Styrene	0	11.2	10.0	10.7	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Trichloroethene	0	11.1	10.0	10.8	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Trichlorofluoromethane	0	11.8	10.0	11.1	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Toluene	0	10.9	10.0	10.5	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Tetrachloroethene	0	11.1	10.0	10.8	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
Vinyl chloride	0	11.1	10.0	10.8	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
cis-1,2-Dichloroethene	0	11.0	10.0	13.6	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
cis-1,3-Dichloropropene	0	10.7	10.0	9.71	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
m- and p-Xylene Isomers	0	21.9	20.0	21.1	20.0	20.0	20.0	20.0	20.0	-	-	-	-	-	-
o-Xylene	0	10.9	10.0	10.5	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
p-Isopropyl toluene	0	11.5	10.0	10.9	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
sec-Butylbenzene	0	11.4	10.0	10.7	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
trans-1,2-Dichloroethene	0	11.2	10.0	10.9	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
trans-1,3-Dichloropropene	0	10.6	10.0	7.47	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
tert-Butylbenzene	0	11.4	10.0	10.8	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
1,2-Dichlorobenzene-d4 Rep.	10.2	9.91	10.0	9.84	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
1,2-Dichlorobenzene-d4 Theo	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
4-Bromofluorobenzene Rep.	10.6	9.88	10.0	9.72	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
4-Bromofluorobenzene Theo.	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-

002409



Our Quality Control Is Your Quality Assurance

ANALYTICAL REPORT

LOG NO: G96-07-191

Received: 09 JUL 96

Mailed : 22 JUL 96

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
07-191-1	GW-1				09 JUL 96
07-191-2	GW-2				09 JUL 96
07-191-3	GW-3				09 JUL 96
07-191-4	GW-9				09 JUL 96
PARAMETER	07-191-1	07-191-2	07-191-3	07-191-4	
Ammonia (350.1), mg/L	<0.1	<0.1	0.17	<0.1	
Chloride (300.0), mg/L	23	38	13	29	
Nitrate (300.0), mg/L	39	67	35	73	
Sulfate (300.0), mg/L	36	69	24	58	
Turbidity (180.1), NTU	6.5	3.9	21	2.5	
Dissolved Solids (160.1), mg/L	360	520	230	500	
Alkalinity (310.1)					
Carbonate Alk (as CaCO ₃), mg/L	<10	<10	<10	<10	
Bicarbonate Alk (as CaCO ₃), mg/L	200	270	120	260	
Hydroxide Alk (as CaCO ₃), mg/L	<10	<10	<10	<10	
Total Alkalinity (as CaCO ₃), mg/L	200	270	120	260	
Calcium (6010), mg/L	70	120	44	110	
Magnesium (6010), mg/L	15	25	9.3	24	
Potassium (6010), mg/L	17	4.7	14	4.6	
Sodium (6010), mg/L	19	25	16	27	
Digestion (3010), Date	07/11/96	07/11/96	07/11/96	07/11/96	



Our Quality Control Is Your Quality Assurance

LOG NO: G96-07-191

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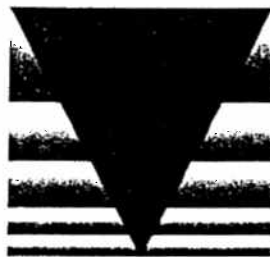
Purchase Order: 92266

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES				DATE SAMPLED
07-191-1	GW-1				09 JUL 96
07-191-2	GW-2				09 JUL 96
07-191-3	GW-3				09 JUL 96
07-191-4	GW-9				09 JUL 96
PARAMETER	07-191-1	07-191-2	07-191-3	07-191-4	
GRO/DRO (8015M)					
Date Analyzed	07/16/96	07/16/96	07/16/96	07/16/96	
Date Extracted	07/15/96	07/15/96	07/15/96	07/15/96	
Dilution Factor, Times	1	1	1	1	
TPH (total), mg/kg	<2	<2	<2	<2	
Other GRO/DRO (8015M)	---	---	---	---	
Surrogates **					
Naphthalene Reported, mg/kg	1.92	1.86	1.84	2.02	
Naphthalene Theoretical, mg/kg	2.00	2.00	2.00	2.00	



Our Quality Control Is Your Quality Assurance

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
07-191-1	GW-1				09 JUL 96
07-191-2	GW-2				09 JUL 96
07-191-3	GW-3				09 JUL 96
07-191-4	GW-9				09 JUL 96
PARAMETER		07-191-1	07-191-2	07-191-3	07-191-4
E524.2/VOC (524.2)					
Date Analyzed		07/16/96	07/17/96	07/17/96	07/17/96
Dilution Factor, Times		1	1	1	1
1,1,1,2-Tetrachloroethane, ug/L		<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane, ug/L		3.8	0.81	2.6	12
1,1,2,2-Tetrachloroethane, ug/L		<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane, ug/L		<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane, ug/L		0.96	<0.5	2.6	<0.5
1,1-Dichloroethene, ug/L		6.2	1.7	5.3	5.4
1,1-Dichloropropene, ug/L		<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L		<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane, ug/L		<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L		<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene, ug/L		<0.5	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L		<1	<1	<1	<1
1,2-Dibromoethane, ug/L		<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane, ug/L		<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene, ug/L		<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane, ug/L		<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L		<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene, ug/L		<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane, ug/L		<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene, ug/L		<0.5	<0.5	<0.5	<0.5
2,2-Dichloropropane, ug/L		<0.5	<0.5	<0.5	<0.5



Our Quality Control Is Your Quality Assurance

LOG NO: G96-07-191

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Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
07-191-1	GW-1	09 JUL 96			
07-191-2	GW-2	09 JUL 96			
07-191-3	GW-3	09 JUL 96			
07-191-4	GW-9	09 JUL 96			
PARAMETER		07-191-1	07-191-2	07-191-3	07-191-4
2-Chlorotoluene, ug/L		<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene, ug/L		<0.5	<0.5	<0.5	<0.5
Bromobenzene, ug/L		<0.5	<0.5	<0.5	<0.5
Bromochloromethane, ug/L		<0.5	<0.5	<0.5	<0.5
Bromodichloromethane, ug/L		<0.5	<0.5	<0.5	<0.5
Bromomethane, ug/L		<0.5	<0.5	<0.5	<0.5
Benzene, ug/L		<0.5	<0.5	<0.5	<0.5
Bromoform, ug/L		<0.5	<0.5	<0.5	<0.5
Chlorobenzene, ug/L		<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride, ug/L		1.6	2.0	3.2	2.5
Chloroethane, ug/L		<0.5	<0.5	<0.5	<0.5
Chloroform, ug/L		1.0	<0.5	0.99	1.3
Chloromethane, ug/L		<0.5	<0.5	<0.5	<0.5
Dibromochloromethane, ug/L		<0.5	<0.5	<0.5	<0.5
Dibromomethane, ug/L		<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane, ug/L		<0.5	<0.5	<0.5	0.76
Ethylbenzene, ug/L		<0.5	<0.5	<0.5	<0.5
Freon 113, ug/L		<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene, ug/L		<0.5	<0.5	<0.5	<0.5
Isopropylbenzene, ug/L		<0.5	<0.5	<0.5	<0.5
Methylene chloride, ug/L		<1	<1	<1	<1
N-Butylbenzene, ug/L		<0.5	<0.5	<0.5	<0.5
N-Propylbenzene, ug/L		<0.5	<0.5	<0.5	<0.5
Naphthalene, ug/L		<1	<1	<1	<1



Our Quality Control Is Your Quality Assurance

LOG NO: G96-07-191

Received: 09 JUL 96

Mailed : 22 JUL 96

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
07-191-1	GW-1	09 JUL 96			
07-191-2	GW-2	09 JUL 96			
07-191-3	GW-3	09 JUL 96			
07-191-4	GW-9	09 JUL 96			
PARAMETER	07-191-1	07-191-2	07-191-3	07-191-4	
Styrene, ug/L	<0.5	<0.5	<0.5	<0.5	
Trichloroethene, ug/L	86	21	90	230	
Trichlorofluoromethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Toluene, ug/L	3.9	3.5	5.8	<0.5	
Tetrachloroethene, ug/L	3.0	2.8	1.6	28	
Vinyl chloride, ug/L	<0.5	<0.5	<0.5	<0.5	
cis-1,2-Dichloroethene, ug/L	1.9	2.1	0.87	0.77	
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5	<0.5	<0.5	
m- and p-Xylene Isomers, ug/L	<1	<1	<1	<1	
o-Xylene, ug/L	<0.5	<0.5	<0.5	<0.5	
p-Isopropyl toluene, ug/L	<0.5	<0.5	<0.5	<0.5	
sec-Butylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5	<0.5	<0.5	
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5	<0.5	<0.5	
tert-Butylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
Other E524.2/VOC (524.2)	---	---	---	---	
Surrogates **					
1,2-Dichlorobenzene-d4 Rep., ug/L	9.53	10.0	10.5	9.78	
1,2-Dichlorobenzene-d4 Theo, ug/L	10.0	10.0	10.0	10.0	
4-Bromofluorobenzene Rep., ug/L	9.87	10.4	10.4	10.0	
4-Bromofluorobenzene Theo., ug/L	10.0	10.0	10.0	10.0	



Our Quality Control Is Your Quality Assurance

LOG NO: G96-07-191

Received: 09 JUL 96

Mailed : 22 JUL 96

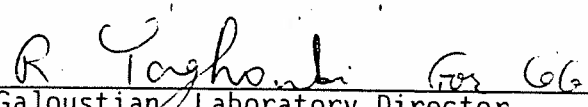
Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 6


Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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: ORDER PLACED FOR CLIENT: SECOR 9607191 :
 : BC ANALYTICAL : GLEN LAB : 09:29:57 30 DEC 1996 - P. 1 :
 =====

SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE..... ANALYZED	METHOD.....	EQUIP.	BATCH..	ID.NO
9607191*1	GW-1	NH3-N	07.11.96	350.1	533-20	96174	7772
		ANIONS,CL	07.10.96	300.0	533-23	960710	8651
		ANIONS,N03	07.10.96	300.0	533-23	960710	8651
		ANIONS,S04	07.10.96	300.0	533-23	960710	8651
		TURB	07.10.96	180.1	533-24	96131	
		TDS	07.10.96	160.1		9669	
		ALK	07.15.96	310.1	533-25	9646	8804
		CA	07.11.96	6010	535-03	961573	7396
		MG	07.11.96	6010	535-03	961573	7396
		K	07.11.96	6010	535-03	961573	7396
		NA	07.11.96	6010	535-03	961573	7396
		DIG,AQ.HCL	07.11.96	3010		961573	7093
		FUEL.TOT	07.16.96	8015M	536-01	9640	8042
		VOA,524.2	07.16.96	524.2	537-03	96421	7430
9607191*2	GW-2	NH3-N	07.11.96	350.1	533-20	96174	7772
		ANIONS,CL	07.10.96	300.0	533-23	960710	8651
		ANIONS,N03	07.10.96	300.0	533-23	960710	8651
		ANIONS,S04	07.10.96	300.0	533-23	960710	8651
		TURB	07.10.96	180.1	533-24	96131	
		TDS	07.10.96	160.1		9669	
		ALK	07.15.96	310.1	533-25	9646	8804
		CA	07.11.96	6010	535-03	961573	7396
		MG	07.11.96	6010	535-03	961573	7396
		K	07.11.96	6010	535-03	961573	7396
		NA	07.11.96	6010	535-03	961573	7396
		DIG,AQ.HCL	07.11.96	3010		961573	7093
		FUEL.TOT	07.16.96	8015M	536-01	9640	8042
		VOA,524.2	07.17.96	524.2	537-03	96421	7430
9607191*3	GW-3	NH3-N	07.11.96	350.1	533-20	96174	7772
		ANIONS,CL	07.10.96	300.0	533-23	960710	8651
		ANIONS,N03	07.10.96	300.0	533-23	960710	8651
		ANIONS,S04	07.10.96	300.0	533-23	960710	8651
		TURB	07.10.96	180.1	533-24	96131	
		TDS	07.10.96	160.1		9669	
		ALK	07.15.96	310.1	533-25	9646	8804
		CA	07.11.96	6010	535-03	961573	7396
		MG	07.11.96	6010	535-03	961573	7396
		K	07.11.96	6010	535-03	961573	7396
		NA	07.11.96	6010	535-03	961573	7396
		DIG,AQ.HCL	07.11.96	3010		961573	7093
		FUEL.TOT	07.16.96	8015M	536-01	9640	8042
		VOA,524.2	07.17.96	524.2	537-03	96421	7430
9607191*4	GW-9	NH3-N	07.11.96	350.1	533-20	96174	7772
		ANIONS,CL	07.10.96	300.0	533-23	960710	8651

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of analyst.

002416

: ORDER PLACED FOR CLIENT: SECOR 9607191 :
 : BC ANALYTICAL : GLEN LAB : 09:29:58 30 DEC 1996 - P. 2 :
 =====

SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE..... ANALYZED	METHOD.....	EQUIP.	BATCH..	ID.NO
	ANIONS,N03		07.10.96	300.0	533-23	960710	8651
	ANIONS,S04		07.10.96	300.0	533-23	960710	8651
	TURB		07.10.96	180.1	533-24	96131	
	TDS		07.10.96	160.1		9669	
	ALK		07.15.96	310.1	533-25	9646	8804
	CA		07.11.96	6010	535-03	961573	7396
	MG		07.11.96	6010	535-03	961573	7396
	K		07.11.96	6010	535-03	961573	7396
	NA		07.11.96	6010	535-03	961573	7396
	DIG,AQ.HCL		07.11.96	3010		961573	7093
	FUEL.TOT		07.16.96	8015M	536-01	9640	8042
	VOA,524.2		07.17.96	524.2	537-03	96421	7430

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of analyst.

002417

BCA Log Number 1612

Client name		SECOR		Project or PO#		Allied Signal	
Address		3427 Empress Dr. Ste A		Phone #		805-546-0455	
City, State, Zip		San Luis Obispo, CA 93401		Report attention		Greg Kogelph	
Lab Sample number	Date sampled	Time sampled	Type' See key below	Sampled by	Sample description	Number of containers	
	7-9-96	1200	AQ	GW-1		9	
	7-9-96	1400	AQ	GW-2		9	
	7-9-92	1615	AQ	GW-3		9	
	7-9-92	1845	AQ	GW-9		9	
<div style="display: flex; justify-content: space-between;"> <div> <p>Analyses required</p> <p>AK, TDS, Turb</p> <p>Co. M. 15-15, M4</p> <p>(C) 15-15</p> <p>Aluminum, Arsenic</p> <p>TPH, TPH by 2015</p> <p>LOA by 5/24/2</p> <p>Hazardous sample required</p> <p>Special handling required</p> </div> <div> <p>Remarks</p> </div> </div>							

Signature		Print Name		Company		Date		Time	
Relinquished by	<i>Will Davis</i>	Will Davis	SECOR		7-9-96		20:40		
Received by	<i>E. T. Davis</i>	E. T. Davis	BCA		7/9/96		20:40		
Relinquished by									
Received by									
Relinquished by									
Received by Laboratory									

002418

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum
WW—Wastewater

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

C ANALYTICAL
1085 Shary Circle, Concord, CA 94518 (510) 825-3894

APPENDIX A
QC SUMMARY

AQUEOUS SAMPLES

METHOD BLANK										LAB CONTROL										MATRIX QC									
UNITS		RESULT	RDL	FLG	LCS	%REC	FLG	LCSO	%REC	FLG	LCL	UCL	RPD	UCL	FLG	MS	%REC	FLG	MSD	%REC	FLG	LCL	UCL	RPD	UCL	FLG			
Batch: ALK*9646 Method: 310.1 - Alkalinity, Titrimetric																													
Carbonate Alk (as CaCO3)		0	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Bicarbonate Alk (as CaCO3)		0	10	-	97	-	99	-	92	108	2	-	-	100	-	100	-	100	-	100	-	91	108	1	15	-			
Hydroxide Alk (as CaCO3)		0	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Total Alkalinity (as CaCO3)		0	10	-	97	-	99	-	92	108	2	-	-	100	-	100	-	100	-	100	-	91	108	1	15	-			
Batch: TDS*9669 Method: 160.1 - Residue, Filterable, Gravimetric, Dried at 180° C																													
Dissolved Solids		3	10	-	103	-	103	-	95	108	0	-	-	100	-	102	-	102	-	102	-	94	112	1	15	-			
Batch: TUR8*96131 Method: 180.1 - Turbidity, Nephelometric																													
Turbidity		0	0.2	-	101	-	101	-	95	105	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Batch: NH3-N*96174 Method: 350.1 - Nitrogen, Ammonia-Colorimetric, Automated Phenate																													
Ammonia		0	0.1	-	98	-	101	-	85	121	3	-	-	97	-	99	-	99	-	99	-	77	130	3	15	-			
Batch: 960710 Method: 300.0 - Inorganic anions in water, Ion chromatograph																													
Chloride		0	0.5	-	94	-	93	-	90	110	1	-	-	-	NC	-	NC	-	NC	-	NC	-	72	117	-	15	NC		
Nitrate		0	0.5	-	96	-	96	-	90	110	0	-	-	-	NC	-	NC	-	NC	-	NC	-	74	115	-	15	NC		
Sulfate		0	1	-	97	-	95	-	90	110	2	-	-	-	NC	-	NC	-	NC	-	NC	-	69	116	-	15	NC		
Batch: 961573 Method: 6010 - ICAP Metals																													
Calcium		0	0.5	-	107	-	106	-	81	115	1	-	-	110	-	106	-	106	-	106	-	73	118	2	20	-			
Potassium		0.08	0.5	-	101	-	98	-	80	111	3	-	-	104	-	102	-	102	-	102	-	47	156	2	20	-			
Magnesium		0	0.1	-	105	-	103	-	82	113	2	-	-	106	-	104	-	104	-	104	-	74	119	1	20	-			
Sodium		0	0.5	-	105	-	102	-	87	112	3	-	-	105	-	102	-	102	-	102	-	74	120	2	20	-			

AQUEOUS SAMPLES

METHOD BLANK				LAB CONTROL						MATRIX QC																	
UNITS	RESULT	RDL	FLG	LCS	%REC	FLG	LCSO	%REC	FLG	LCL	UCL	RPD	UCL	RPD	FLG	MS	%REC	FLG	MSD	%REC	FLG	LCL	UCL	RPD	UCL	RPD	FLG
C/MS for Volatile Organics, Capillary Column, Purge and trap																											
ug/L	0	0.5	-	109	-	106	-	73	134	3	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	113	-	102	-	73	122	10	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	108	-	106	-	64	139	2	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	110	-	109	-	67	144	1	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	110	-	106	-	71	125	4	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	114	-	116	-	70	125	2	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	112	-	109	-	73	121	3	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	116	-	113	-	59	147	3	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	117	-	118	-	62	140	1	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	114	-	111	-	64	137	3	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	111	-	105	-	65	129	6	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	1	-	113	-	107	-	45	158	5	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	111	-	108	-	67	144	3	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	112	-	107	-	69	133	5	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	110	-	107	-	70	130	3	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	106	-	104	-	71	128	2	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	110	-	104	-	71	120	6	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	108	-	106	-	72	125	2	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	108	-	106	-	68	142	2	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	110	-	107	-	71	127	3	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	78	-	6	Q	70	129	171	15	Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	106	-	102	-	69	123	4	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	114	-	109	-	68	126	4	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	106	-	105	-	72	123	1	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	109	-	108	-	73	128	1	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	108	-	107	-	69	137	1	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	106	-	104	-	62	133	2	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	106	-	105	-	74	121	1	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	110	-	107	-	66	151	3	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	110	-	105	-	71	130	5	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	110	-	106	-	71	126	4	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	106	-	100	-	68	123	6	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	124	-	122	-	72	124	2	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	110	-	107	-	60	125	3	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	108	-	104	-	67	144	4	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	110	-	109	-	74	139	1	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ug/L	0	0.5	-	113	-	106	-	46	146	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

002421

AQUEOUS SAMPLES

METHOD BLANK				LAB CONTROL				MATRIX QC			
UNITS	RESULT	RDL FLG	LCS	LCS	LCSD	%REC	FLG	LCL	UCL	RPD	FLG
Batch: VOA,524*96421 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap, con't											
Ethylbenzene	ug/L	0	0.5	-	109	-	105	-	74	125	4 17
Freon 113	ug/L	0	0.5	-	117	-	110	-	52	140	6
Hexachlorobutadiene	ug/L	0	0.5	-	115	-	111	-	65	130	4 17
Isopropylbenzene	ug/L	0	0.5	-	111	-	106	-	72	119	5 14
Methylene chloride	ug/L	0.79	1	-	128	-	121	-	66	132	6 13
N-Butylbenzene	ug/L	0	0.5	-	114	-	107	-	68	125	6 16
N-Propylbenzene	ug/L	0	0.5	-	111	-	105	-	72	119	6 14
Naphthalene	ug/L	0.27	1	-	118	-	110	-	49	162	7 32
Styrene	ug/L	0	0.5	-	112	-	107	-	70	133	5 48
Trichloroethene	ug/L	0	0.5	-	111	-	108	-	74	122	3 14
Trichlorofluoromethane	ug/L	0	0.5	-	118	-	111	-	57	145	6 19
Toluene	ug/L	0	0.5	-	109	-	105	-	75	124	4 21
Tetrachloroethene	ug/L	0	0.5	-	111	-	108	-	78	123	3 16
Vinyl chloride	ug/L	0	0.5	-	111	-	108	-	64	132	3 17
cis-1,2-Dichloroethene	ug/L	0	0.5	-	110	-	136	Q	75	124	21 13
cis-1,3-Dichloropropene	ug/L	0	0.5	-	107	-	97	-	74	135	10 19
m- and p-Xylene Isomers	ug/L	0	1	-	110	-	106	-	65	134	4 25
o-Xylene	ug/L	0	0.5	-	109	-	105	-	71	130	4 21
p-Isopropyl toluene	ug/L	0	0.5	-	115	-	109	-	70	122	5 20
sec-Butylbenzene	ug/L	0	0.5	-	114	-	107	-	70	122	6 15
trans-1,2-Dichloroethene	ug/L	0	0.5	-	112	-	109	-	72	123	3 15
trans-1,3-Dichloropropene	ug/L	0	0.5	-	106	-	75	-	71	137	35 23
tert-Butylbenzene	ug/L	0	0.5	-	114	-	108	-	71	120	5 15
[1,2-Dichlorobenzene-d4]	Percent	102	-	-	99	-	98	-	55	118	-
[4-Bromofluorobenzene]	Percent	106	-	-	99	-	97	-	77	127	-
Batch: FUEL*9640 Method: 8015M - Modified 8015											
TPH (total)	mg/L	0	2	-	85	-	84	-	50	138	0
[Naphthalene]	Percent	105	-	-	113	-	114	-	55	127	-

MS	MSD	MS	MSD	MS	MSD	MS	MSD	MS	MSD	MS	MSD
%REC	FLG	%REC	FLG	%REC	FLG	%REC	FLG	%REC	FLG	%REC	FLG
84	-	80	-	108	-	84	-	108	-	84	-
53	128	5	30	53	128	5	30	53	128	5	30
55	127	-	-	55	127	-	-	55	127	-	-

002422

AQUEOUS SAMPLES

Batch: ALK*9646 Method: 310.1 - Alkalinity, Titrimetric

UNITS	MB	C6071932*1	LC	LT	C6071933*1	LC	LT	9607164*6	R1	R2	S1	S2	T
Carbonate Alk (as CaCO3)	0	0	0	0	0	0	0	<10	<10	-	<10	<10	<10
Bicarbonate Alk (as CaCO3)	0	580	580	596	592	592	596	150	624	-	624	620	622
Hydroxide Alk (as CaCO3)	0	0	0	0	0	0	0	<10	<10	-	<10	<10	<10
Total Alkalinity (as CaCO3)	0	580	580	596	592	592	596	150	624	-	624	620	622

Batch: TDS*9669 Method: 160.1 - Residue, Gravimetric, Dried at 180 C

UNITS	MB	C6071728*1	LC	LT	C6071729*1	LC	LT	9607191*1	R1	R2	S1	S2	T
Dissolved Solids	3	1030	1030	1000	1030	1030	1000	360	1360	-	1360	1380	1360

Batch: TURB*96131 Method: 180.1 - Turbidity, Nephelometric

UNITS	MB	C6071273*1	LC	LT	C6071274*1	LC	LT	9607191*1	R1	R2	S1	S2	T
Turbidity	0	8.2	8.2	8.1	8.2	8.2	8.1	6.5	6.5	6.5	-	-	-

Batch: NH3-N*96174 Method: 350.1 - Nitrogen, Ammonia-Colorimetric, Automated Phenate

UNITS	MB	C6071894*1	LC	LT	C6071895*1	LC	LT	9607215*3	R1	R2	S1	S2	T
Ammonia	0	1.96	1.96	2.00	2.02	2.02	2.00	<0.1	4.83	-	4.83	4.97	5.00

Batch: ANIONS,CL*960710 Method: 300.0 - Inorganic anions in water, Ion chromatograph

UNITS	MB	C6071338*1	LC	LT	C6071339*1	LC	LT	9607191*1	R1	R2	S1	S2	T
Chloride	0	18.8	18.8	20.0	18.6	18.6	20.0	23	30.0	-	30.1	30.1	29.8

Batch: ANIONS,N03*960710 Method: 300.0 - Inorganic anions in water, Ion chromatograph

UNITS	MB	C6071226*1	LC	LT	C6071227*1	LC	LT	9607191*1	R1	R2	S1	S2	T
Nitrate	0	24.1	24.1	25.0	24.1	24.1	25.0	39	55.9	-	55.9	56.2	55.3

Batch: ANIONS,S04*960710 Method: 300.0 - Inorganic anions in water, Ion chromatograph

002423

AQUEOUS SAMPLES

Sulfate	UNITS	MB	LC	LT	LC	LT	R1	R2	S1	S2	T
	mg/L	0	48.7	50.0	47.7	50.0	36	-	50.9	51.0	52.2

Batch: DIG,AQ*961573 Method: 3010 - Acid Digestion of Aqueous etc.

Digestion	UNITS	(BLANK)	(LCS)	(LCSD)	(MTX QC)						
Date	MB	LC	LT	LC	LT	R1	R2	S1	S2	T	
	07/11/96	07/11/96	07/11/96	07/11/96	07/11/96	07/11/96	07/11/96	07/11/96	07/11/96	07/11/96	

Batch: CA*961573 Method: 6010 - ICAP Metals

Calcium	UNITS	B607706*1	C6071300*1	C6071301*1	9607190*1						
	mg/L	MB	LC	LT	LC	LT	R1	R2	S1	S2	T
		0	53.6	50.0	53.1	50.0	76	-	131	129	126

Batch: K*961573 Method: 6010 - ICAP Metals

Potassium	UNITS	B607707*1	C6071302*1	C6071303*1	9607190*1						
	mg/L	MB	LC	LT	LC	LT	R1	R2	S1	S2	T
		0.08	50.7	50.0	49.2	50.0	2.8	-	13.2	13.0	12.8

Batch: MG*961573 Method: 6010 - ICAP Metals

Magnesium	UNITS	B607708*1	C6071304*1	C6071305*1	9607190*1						
	mg/L	MB	LC	LT	LC	LT	R1	R2	S1	S2	T
		0	52.3	50.0	51.4	50.0	17	-	69.8	68.8	66.7

Batch: NA*961573 Method: 6010 - ICAP Metals

Sodium	UNITS	B607709*1	C6071306*1	C6071307*1	9607190*1						
	mg/L	MB	LC	LT	LC	LT	R1	R2	S1	S2	T
		0	52.6	50.0	50.8	50.0	16	-	68.5	67.1	65.9

AQUEOUS SAMPLES

Batch: VOA,524*96421 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap

Date Analyzed	Dilution Factor	UNITS	B6071289*1		C6072391*1		C6072392*1		N/A			
		Date	MB	LC	LT	LC	LT	LC	R1	R2	S1	S2
		Times	07/16/96	07/16/96	07/16/96	07/16/96	07/16/96	07/16/96	-	-	-	-
1,1,1,2-Tetrachloroethane		ug/L	0	10.9	10.0	10.6	10.0	10.6	-	-	-	-
1,1,1-Trichloroethane		ug/L	0	11.3	10.0	10.2	10.0	10.2	-	-	-	-
1,1,2,2-Tetrachloroethane		ug/L	0	10.8	10.0	10.6	10.0	10.6	-	-	-	-
1,1,2-Trichloroethane		ug/L	0	11.0	10.0	10.9	10.0	10.9	-	-	-	-
1,1-Dichloroethane		ug/L	0	11.0	10.0	10.6	10.0	10.6	-	-	-	-
1,1-Dichloroethene		ug/L	0	11.4	10.0	11.6	10.0	11.6	-	-	-	-
1,1-Dichloropropene		ug/L	0	11.2	10.0	10.9	10.0	10.9	-	-	-	-
1,2,3-Trichlorobenzene		ug/L	0	11.6	10.0	11.3	10.0	11.3	-	-	-	-
1,2,3-Trichloropropane		ug/L	0	11.7	10.0	11.8	10.0	11.8	-	-	-	-
1,2,4-Trichlorobenzene		ug/L	0	11.4	10.0	11.1	10.0	11.1	-	-	-	-
1,2,4-Trimethylbenzene		ug/L	0	11.1	10.0	10.5	10.0	10.5	-	-	-	-
1,2-Dibromo-3-chloropropane		ug/L	0	11.3	10.0	10.7	10.0	10.7	-	-	-	-
1,2-Dibromoethane		ug/L	0	11.1	10.0	10.8	10.0	10.8	-	-	-	-
1,2-Dichloroethane		ug/L	0	11.2	10.0	10.7	10.0	10.7	-	-	-	-
1,2-Dichlorobenzene		ug/L	0	11.0	10.0	10.7	10.0	10.7	-	-	-	-
1,2-Dichloropropane		ug/L	0	10.6	10.0	10.4	10.0	10.4	-	-	-	-
1,3,5-Trimethylbenzene		ug/L	0	11.0	10.0	10.4	10.0	10.4	-	-	-	-
1,3-Dichlorobenzene		ug/L	0	10.8	10.0	10.6	10.0	10.6	-	-	-	-
1,3-Dichloropropane		ug/L	0	10.8	10.0	10.6	10.0	10.6	-	-	-	-
1,4-Dichlorobenzene		ug/L	0	11.0	10.0	10.7	10.0	10.7	-	-	-	-
2,2-Dichloropropane		ug/L	0	7.82	10.0	0.62	10.0	0.62	-	-	-	-
2-Chlorotoluene		ug/L	0	10.6	10.0	10.2	10.0	10.2	-	-	-	-
4-Chlorotoluene		ug/L	0	11.4	10.0	10.9	10.0	10.9	-	-	-	-
Bromobenzene		ug/L	0	10.6	10.0	10.5	10.0	10.5	-	-	-	-
Bromochloromethane		ug/L	0	10.9	10.0	10.8	10.0	10.8	-	-	-	-
Bromodichloromethane		ug/L	0	10.8	10.0	10.7	10.0	10.7	-	-	-	-
Bromomethane		ug/L	0	10.6	10.0	10.4	10.0	10.4	-	-	-	-
Benzene		ug/L	0	10.6	10.0	10.5	10.0	10.5	-	-	-	-
Bromoform		ug/L	0	11.0	10.0	10.7	10.0	10.7	-	-	-	-
Chlorobenzene		ug/L	0	11.0	10.0	10.5	10.0	10.5	-	-	-	-
Carbon Tetrachloride		ug/L	0	11.0	10.0	10.6	10.0	10.6	-	-	-	-
Chloroethane		ug/L	0	10.6	10.0	10.0	10.0	10.0	-	-	-	-
Chloroform		ug/L	0	12.4	10.0	12.2	10.0	12.2	-	-	-	-
Chloromethane		ug/L	0	11.0	10.0	10.7	10.0	10.7	-	-	-	-
Dibromochloromethane		ug/L	0	10.8	10.0	10.4	10.0	10.4	-	-	-	-

002425

AQUEOUS SAMPLES

Batch: VOA.524*96421 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap, con't

	UNITS	B6071289*1		C6072391*1		C6072392*1		N/A			
		MB	LC	LT	LC	LT	LC	R1	R2	S1	S2
Dibromomethane	ug/L	0	11.0	10.0	10.9	10.0	10.9	-	-	-	-
Dichlorodifluoromethane	ug/L	0	11.3	10.0	10.6	10.0	10.6	-	-	-	-
Ethylbenzene	ug/L	0	10.9	10.0	10.5	10.0	10.5	-	-	-	-
Freon 113	ug/L	0	11.7	10.0	11.0	10.0	11.0	-	-	-	-
Hexachlorobutadiene	ug/L	0	11.5	10.0	11.1	10.0	11.1	-	-	-	-
Isopropylbenzene	ug/L	0	11.1	10.0	10.6	10.0	10.6	-	-	-	-
Methylene chloride	ug/L	0.79	12.8	10.0	12.1	10.0	12.1	-	-	-	-
N-Butylbenzene	ug/L	0	11.4	10.0	10.7	10.0	10.7	-	-	-	-
N-Propylbenzene	ug/L	0	11.1	10.0	10.5	10.0	10.5	-	-	-	-
Naphthalene	ug/L	0.27	11.8	10.0	11.0	10.0	11.0	-	-	-	-
Styrene	ug/L	0	11.2	10.0	10.7	10.0	10.7	-	-	-	-
Trichloroethene	ug/L	0	11.1	10.0	10.8	10.0	10.8	-	-	-	-
Trichlorofluoromethane	ug/L	0	11.8	10.0	11.1	10.0	11.1	-	-	-	-
Toluene	ug/L	0	10.9	10.0	10.5	10.0	10.5	-	-	-	-
Tetrachloroethene	ug/L	0	11.1	10.0	10.8	10.0	10.8	-	-	-	-
Vinyl chloride	ug/L	0	11.1	10.0	10.8	10.0	10.8	-	-	-	-
cis-1,2-Dichloroethene	ug/L	0	11.0	10.0	13.6	10.0	13.6	-	-	-	-
cis-1,3-Dichloropropene	ug/L	0	10.7	10.0	9.71	10.0	9.71	-	-	-	-
m- and p-Xylene Isomers	ug/L	0	21.9	20.0	21.1	20.0	21.1	-	-	-	-
o-Xylene	ug/L	0	10.9	10.0	10.5	10.0	10.5	-	-	-	-
p-Isopropyl toluene	ug/L	0	11.5	10.0	10.9	10.0	10.9	-	-	-	-
sec-Butylbenzene	ug/L	0	11.4	10.0	10.7	10.0	10.7	-	-	-	-
trans-1,2-Dichloroethene	ug/L	0	11.2	10.0	10.9	10.0	10.9	-	-	-	-
trans-1,3-Dichloropropene	ug/L	0	10.6	10.0	7.47	10.0	7.47	-	-	-	-
tert-Butylbenzene	ug/L	0	11.4	10.0	10.8	10.0	10.8	-	-	-	-
1,2-Dichlorobenzene-d4 Rep.	ug/L	10.2	9.91	10.0	9.84	10.0	9.84	-	-	-	-
1,2-Dichlorobenzene-d4 Theo	ug/L	10.0	10.0	10.0	10.0	10.0	10.0	-	-	-	-
4-Bromofluorobenzene Rep.	ug/L	10.6	9.88	10.0	9.72	10.0	9.72	-	-	-	-
4-Bromofluorobenzene Theo.	ug/L	10.0	10.0	10.0	10.0	10.0	10.0	-	-	-	-

AQUEOUS SAMPLES

Batch: FUEL*9640 Method: 8015M - Modified 8015

	B6071319*1	C6072451*1	C6072452*1		9607191*1												
UNITS	MB	LC	LT	LC	LT	R1	R2	S1	S2	T							
Date Analyzed	07/16/96	07/16/96	07/16/96	07/16/96	07/16/96	07/16/96	-	07/16/96	07/16/96	07/16/96							
Date Extracted	07/15/96	07/15/96	07/15/96	07/15/96	07/15/96	07/15/96	-	07/15/96	07/15/96	07/15/96							
Dilution Factor	1	1	1	1	1	1	-	1	1	1							
TPH (total)	0	25.4	30.0	25.3	30.0	<2	-	25.3	24.0	30.0							
Naphthalene Reported	2.09	2.26	2.00	2.28	2.00	1.92	-	2.15	2.06	2.00							
Naphthalene Theoretical	2.00	2.00	2.00	2.00	2.00	2.00	-	2.00	2.00	2.00							



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ANALYTICAL REPORT

LOG NO: G96-07-215

Received: 10 JUL 96

Mailed : 24 JUL 96

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-1	GW-7	10 JUL 96		
07-215-2	GW-8	10 JUL 96		
07-215-3	GW-10	10 JUL 96		
PARAMETER	07-215-1	07-215-2	07-215-3	
Ammonia (350.1), mg/L	<0.1	<0.1	<0.1	
Chloride (300.0), mg/L	36	28	26	
Nitrate (300.0), mg/L	80	39	35	
Sulfate (300.0), mg/L	120	49	63	
Turbidity (180.1), NTU	1.7	24	0.9	
Dissolved Solids (160.1), mg/L	720	450	610	
Alkalinity (310.1)				
Carbonate Alk (as CaCO ₃), mg/L	<10	<10	<10	
Bicarbonate Alk (as CaCO ₃), mg/L	430	260	390	
Hydroxide Alk (as CaCO ₃), mg/L	<10	<10	<10	
Total Alkalinity (as CaCO ₃), mg/L	430	260	390	
Calcium (6010), mg/L	180	100	140	
Magnesium (6010), mg/L	38	21	30	
Potassium (6010), mg/L	5.0	4.2	4.7	
Sodium (6010), mg/L	30	25	27	
Digestion (3010), Date	07/11/96	07/11/96	07/11/96	



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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-1	GW-7	10 JUL 96		
07-215-2	GW-8	10 JUL 96		
07-215-3	GW-10	10 JUL 96		
PARAMETER	07-215-1	07-215-2	07-215-3	
GRO/DRO (8015M)				
Date Analyzed	07/17/96	07/17/96	07/17/96	
Date Extracted	07/15/96	07/15/96	07/15/96	
Dilution Factor, Times	1	1	1	
TPH (total), mg/kg	<2	<2	<2	
Other GRO/DRO (8015M)	---	---	---	
Surrogates **				
Naphthalene Reported, mg/kg	1.86	2.06	1.94	
Naphthalene Theoretical, mg/kg	2.00	2.00	2.00	



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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-1	GW-7	10 JUL 96		
07-215-2	GW-8	10 JUL 96		
07-215-3	GW-10	10 JUL 96		
PARAMETER		07-215-1	07-215-2	07-215-3
E524.2/VOC (524.2)				
Date Analyzed		07/23/96	07/17/96	07/17/96
Dilution Factor, Times		20	1	1
1,1,1,2-Tetrachloroethane, ug/L		<10	<0.5	<0.5
1,1,1-Trichloroethane, ug/L		63	4.9	89
1,1,2,2-Tetrachloroethane, ug/L		<10	<0.5	<0.5
1,1,2-Trichloroethane, ug/L		<10	<0.5	4.5
1,1-Dichloroethane, ug/L		60	<0.5	8.6
1,1-Dichloroethene, ug/L		42	4.4	53
1,1-Dichloropropene, ug/L		<10	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L		<10	<0.5	<0.5
1,2,3-Trichloropropane, ug/L		<10	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L		<10	<0.5	<0.5
1,2,4-Trimethylbenzene, ug/L		<10	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L		<20	<1	<1
1,2-Dibromoethane, ug/L		<10	<0.5	<0.5
1,2-Dichloroethane, ug/L		<10	<0.5	1.5
1,2-Dichlorobenzene, ug/L		<10	<0.5	<0.5
1,2-Dichloropropane, ug/L		<10	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L		<10	<0.5	<0.5
1,3-Dichlorobenzene, ug/L		<10	<0.5	<0.5
1,3-Dichloropropane, ug/L		<10	<0.5	<0.5
1,4-Dichlorobenzene, ug/L		<10	<0.5	<0.5
2,2-Dichloropropane, ug/L		<10	<0.5	<0.5
2-Chlorotoluene, ug/L		<10	<0.5	<0.5



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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-1	GW-7			10 JUL 96
07-215-2	GW-8			10 JUL 96
07-215-3	GW-10			10 JUL 96
PARAMETER		07-215-1	07-215-2	07-215-3
4-Chlorotoluene, ug/L		<10	<0.5	<0.5
Bromobenzene, ug/L		<10	<0.5	<0.5
Bromochloromethane, ug/L		<10	<0.5	<0.5
Bromodichloromethane, ug/L		<10	<0.5	<0.5
Bromomethane, ug/L		<10	<0.5	<0.5
Benzene, ug/L		<10	<0.5	2.8
Bromoform, ug/L		<10	<0.5	<0.5
Chlorobenzene, ug/L		<10	<0.5	<0.5
Carbon Tetrachloride, ug/L		<10	5.6	8.3
Chloroethane, ug/L		<10	<0.5	<0.5
Chloroform, ug/L		140	1.9	150
Chloromethane, ug/L		<10	<0.5	<0.5
Dibromochloromethane, ug/L		<10	<0.5	<0.5
Dibromomethane, ug/L		<10	<0.5	<0.5
Dichlorodifluoromethane, ug/L		<10	<0.5	<0.5
Ethylbenzene, ug/L		<10	<0.5	<0.5
Freon 113, ug/L		<10	<0.5	<0.5
Hexachlorobutadiene, ug/L		<10	<0.5	<0.5
Isopropylbenzene, ug/L		<10	<0.5	<0.5
Methylene chloride, ug/L		<20	1.4	2.5
N-Butylbenzene, ug/L		<10	<0.5	<0.5
N-Propylbenzene, ug/L		<10	<0.5	<0.5
Naphthalene, ug/L		<20	<1	<1
Styrene, ug/L		<10	<0.5	<0.5
Trichloroethene, ug/L		17000	680	11000



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LOG NO: G96-07-215

Received: 10 JUL 96
Mailed : 24 JUL 96

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-1	GW-7	10 JUL 96		
07-215-2	GW-8	10 JUL 96		
07-215-3	GW-10	10 JUL 96		
PARAMETER	07-215-1	07-215-2	07-215-3	
Trichlorofluoromethane, ug/L	<10	<0.5	<0.5	
Toluene, ug/L	<10	<0.5	<0.5	
Tetrachloroethene, ug/L	36	7.8	81	
Vinyl chloride, ug/L	<10	<0.5	<0.5	
cis-1,2-Dichloroethene, ug/L	190	2.1	230	
cis-1,3-Dichloropropene, ug/L	<10	<0.5	<0.5	
m- and p-Xylene Isomers, ug/L	<20	<1	<1	
o-Xylene, ug/L	<10	<0.5	<0.5	
p-Isopropyl toluene, ug/L	<10	<0.5	<0.5	
sec-Butylbenzene, ug/L	<10	<0.5	<0.5	
trans-1,2-Dichloroethene, ug/L	<10	<0.5	5.6	
trans-1,3-Dichloropropene, ug/L	<10	<0.5	<0.5	
tert-Butylbenzene, ug/L	<10	<0.5	<0.5	
Other E524.2/VOC (524.2)	---	---	---	
Surrogates **				
1,2-Dichlorobenzene-d4 Rep., ug/L	178	10.1	9.76	
1,2-Dichlorobenzene-d4 Theo, ug/L	200	10.0	10.0	
4-Bromofluorobenzene Rep., ug/L	189	10.3	10.2	
4-Bromofluorobenzene Theo., ug/L	200	10.0	10.0	

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-4	Field Blank AS	10 JUL 96		
07-215-5	Bailer Blank AS	10 JUL 96		
07-215-6	Trip Blank AS	10 JUL 96		
PARAMETER		07-215-4	07-215-5	07-215-6
E524.2/VOC (524.2)				
Date Analyzed		07/18/96	07/18/96	07/18/96
Dilution Factor, Times		1	1	1
1,1,1,2-Tetrachloroethane, ug/L		<0.5	<0.5	<0.5
1,1,1-Trichloroethane, ug/L		<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L		<0.5	<0.5	<0.5
1,1,2-Trichloroethane, ug/L		<0.5	<0.5	<0.5
1,1-Dichloroethane, ug/L		<0.5	<0.5	<0.5
1,1-Dichloroethene, ug/L		<0.5	<0.5	<0.5
1,1-Dichloropropene, ug/L		<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L		<0.5	<0.5	<0.5
1,2,3-Trichloropropane, ug/L		<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L		<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene, ug/L		<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L		<1	<1	<1
1,2-Dibromoethane, ug/L		<0.5	<0.5	<0.5
1,2-Dichloroethane, ug/L		<0.5	<0.5	<0.5
1,2-Dichlorobenzene, ug/L		<0.5	<0.5	<0.5
1,2-Dichloropropane, ug/L		<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L		<0.5	<0.5	<0.5
1,3-Dichlorobenzene, ug/L		<0.5	<0.5	<0.5
1,3-Dichloropropane, ug/L		<0.5	<0.5	<0.5
1,4-Dichlorobenzene, ug/L		<0.5	<0.5	<0.5
2,2-Dichloropropane, ug/L		<0.5	<0.5	<0.5
2-Chlorotoluene, ug/L		<0.5	<0.5	<0.5

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Purchase Order: 92266

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-4	Field Blank AS	10 JUL 96		
07-215-5	Bailer Blank AS	10 JUL 96		
07-215-6	Trip Blank AS	10 JUL 96		
PARAMETER		07-215-4	07-215-5	07-215-6
4-Chlorotoluene, ug/L		<0.5	<0.5	<0.5
Bromobenzene, ug/L		<0.5	<0.5	<0.5
Bromochloromethane, ug/L		<0.5	<0.5	<0.5
Bromodichloromethane, ug/L		<0.5	<0.5	<0.5
Bromomethane, ug/L		<0.5	<0.5	<0.5
Benzene, ug/L		<0.5	<0.5	<0.5
Bromoform, ug/L		<0.5	<0.5	<0.5
Chlorobenzene, ug/L		<0.5	<0.5	<0.5
Carbon Tetrachloride, ug/L		<0.5	<0.5	<0.5
Chloroethane, ug/L		<0.5	<0.5	<0.5
Chloroform, ug/L		<0.5	<0.5	<0.5
Chloromethane, ug/L		<0.5	<0.5	<0.5
Dibromochloromethane, ug/L		<0.5	<0.5	<0.5
Dibromomethane, ug/L		<0.5	<0.5	<0.5
Dichlorodifluoromethane, ug/L		<0.5	<0.5	<0.5
Ethylbenzene, ug/L		<0.5	<0.5	<0.5
Freon 113, ug/L		<0.5	<0.5	<0.5
Hexachlorobutadiene, ug/L		<0.5	<0.5	<0.5
Isopropylbenzene, ug/L		<0.5	<0.5	<0.5
Methylene chloride, ug/L		<1	<1	<1
N-Butylbenzene, ug/L		<0.5	<0.5	<0.5
N-Propylbenzene, ug/L		<0.5	<0.5	<0.5
Naphthalene, ug/L		<1	<1	<1
Styrene, ug/L		<0.5	<0.5	<0.5
Trichloroethene, ug/L		<0.5	<0.5	<0.5



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REPORT OF ANALYTICAL RESULTS

Page 8

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-4	Field Blank AS			10 JUL 96
07-215-5	Bailer Blank AS			10 JUL 96
07-215-6	Trip Blank AS			10 JUL 96
PARAMETER		07-215-4	07-215-5	07-215-6
Trichlorofluoromethane, ug/L		<0.5	<0.5	1.5
Toluene, ug/L		<0.5	<0.5	<0.5
Tetrachloroethene, ug/L		<0.5	<0.5	<0.5
Vinyl chloride, ug/L		<0.5	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L		<0.5	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L		<0.5	<0.5	<0.5
m- and p-Xylene Isomers, ug/L		<1	<1	<1
o-Xylene, ug/L		<0.5	<0.5	<0.5
p-Isopropyl toluene, ug/L		<0.5	<0.5	<0.5
sec-Butylbenzene, ug/L		<0.5	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L		<0.5	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L		<0.5	<0.5	<0.5
tert-Butylbenzene, ug/L		<0.5	<0.5	<0.5
Other E524.2/VOC (524.2)		---	---	---
Surrogates **				
1,2-Dichlorobenzene-d4 Rep., ug/L		9.82	10.1	10.6
1,2-Dichlorobenzene-d4 Theo, ug/L		10.0	10.0	10.0
4-Bromofluorobenzene Rep., ug/L		9.74	10.1	10.2
4-Bromofluorobenzene Theo., ug/L		10.0	10.0	10.0



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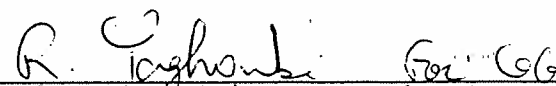
Mr. Greg Vogelpohl
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San Luis Obispo, CA 93401

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REPORT OF ANALYTICAL RESULTS

Page 9


Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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CHAIN OF CUSTODY RECORD

96-0-215

BCA Log Number

Client name SEIOR		Project or PO# Alfred S. gna															
Address 3437 Empress Dr. Ste A		Phone # 805-546-5455															
City, State, Zip San Luis Obispo, CA 93401		Report attention Greg Vitzelpohl															
Lab Sample number	Date sampled	Time sampled	Type See key below	Sampled by Nick Henning / Dave Fairbanks	Sample description	Number of containers	Analyses required										Remarks
							<input type="checkbox"/> Nitrate <input type="checkbox"/> Ammonia N <input type="checkbox"/> Ammonia N <input type="checkbox"/> Nitrite <input type="checkbox"/> Total Phosphorus <input type="checkbox"/> Total Nitrogen <input type="checkbox"/> Volatile Organic Compounds <input type="checkbox"/> Semi-volatile Organic Compounds <input type="checkbox"/> Hazardous sample <input type="checkbox"/> Special handling required										
71094	7-10-96	1100	AQ		GW-7	9	X	X	X	X	X	X	X	X	X		
		0530			GW-8	9	X	X	X	X	X	X	X	X	X		
		1330			GW-10	9	X	X	X	X	X	X	X	X	X		
		1100			Field Blank AS	3										Level III	
		1100			Boiler Blank AS	4										client requested	
		1100			Trip Blank AS	3										QC	
																straight and	
																diluted runs	
																to be reported	
Relinquished by <i>[Signature]</i>		Signature		Print Name Nick Henning		Company SEIOR		Date 7-10-96		Time 1545							
Received by <i>[Signature]</i>		Signature		Print Name C. Henning		Company SEIOR		Date 7-10-96		Time 1545							
Relinquished by		Signature		Print Name		Company		Date		Time							
Received by		Signature		Print Name		Company		Date		Time							
Relinquished by		Signature		Print Name		Company		Date		Time							
Received by Laboratory		Signature		Print Name		Company		Date		Time							

3C ANALYTICAL

1085 Shary Circle, Concord, CA 94518 (510) 825-3894

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum

: ORDER PLACED FOR CLIENT: SECOR 9607215 :
 : BC ANALYTICAL : GLEN LAB : 09:30:17 30 DEC 1996 - P. 1 :
 =====

SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE.....	METHOD.....	EQUIP.	BATCH..	ID.NO
			ANALYZED				
9607215*1	GW-7	NH3-N	07.11.96	350.1	533-20	96174	7772
		ANIONS,CL	07.11.96	300.0	533-23	960711	8651
		ANIONS,N03	07.11.96	300.0	533-23	960711	8651
		ANIONS,S04	07.11.96	300.0	533-23	960711	8651
		TURB	07.10.96	180.1	533-24	96131	
		TDS	07.11.96	160.1		9670	
		ALK	07.15.96	310.1	533-25	9648	8804
		CA	07.11.96	6010	535-03	961573	7396
		MG	07.11.96	6010	535-03	961573	7396
		K	07.11.96	6010	535-03	961573	7396
		NA	07.11.96	6010	535-03	961573	7396
		DIG,AQ.HCL	07.11.96	3010		961573	7093
		FUEL.TOT	07.17.96	8015M	536-01	9640	8042
		VOA,524.2	07.23.96	524.2	537-03	96426	7430
9607215*2	GW-8	NH3-N	07.11.96	350.1	533-20	96174	7772
		ANIONS,CL	07.11.96	300.0	533-23	960711	8651
		ANIONS,N03	07.11.96	300.0	533-23	960711	8651
		ANIONS,S04	07.11.96	300.0	533-23	960711	8651
		TURB	07.10.96	180.1	533-24	96131	
		TDS	07.11.96	160.1		9670	
		ALK	07.15.96	310.1	533-25	9648	8804
		CA	07.11.96	6010	535-03	961573	7396
		MG	07.11.96	6010	535-03	961573	7396
		K	07.11.96	6010	535-03	961573	7396
		NA	07.11.96	6010	535-03	961573	7396
		DIG,AQ.HCL	07.11.96	3010		961573	7093
		FUEL.TOT	07.17.96	8015M	536-01	9640	8042
		VOA,524.2	07.17.96	524.2	537-03	96421	7430
9607215*3	GW-10	NH3-N	07.11.96	350.1	533-20	96174	7772
		ANIONS,CL	07.11.96	300.0	533-23	960711	8651
		ANIONS,N03	07.11.96	300.0	533-23	960711	8651
		ANIONS,S04	07.11.96	300.0	533-23	960711	8651
		TURB	07.10.96	180.1	533-24	96131	
		TDS	07.11.96	160.1		9670	
		ALK	07.15.96	310.1	533-25	9648	8804
		CA	07.11.96	6010	535-03	961573	7396
		MG	07.11.96	6010	535-03	961573	7396
		K	07.11.96	6010	535-03	961573	7396
		NA	07.11.96	6010	535-03	961573	7396
		DIG,AQ.HCL	07.11.96	3010		961573	7093
		FUEL.TOT	07.17.96	8015M	536-01	9640	8042
		VOA,524.2	07.17.96	524.2	537-03	96421	7430
9607215*4	Field Blank AS	VOA,524.2	07.18.96	524.2	537-03	96422	7430
9607215*5	Bailer Blank AS	VOA,524.2	07.18.96	524.2	537-03	96422	7430

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of analyst.

002438

: ORDER PLACED FOR CLIENT: SECOR 9607215 :
: BC ANALYTICAL : GLEN LAB : 09:30:17 30 DEC 1996 - P. 2 :
=====

SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE..... ANALYZED	METHOD.....	EQUIP.	BATCH..	ID.NO
9607215*6	Trip Blank AS	VOA,524.2	07.18.96	524.2	537-03	96422	7430

Notes: Equipment = BC Analytical identification number for a
particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of
analyst.

002439

----- METHOD BLANK

LAB CONTROL

.....

MATRIX OF

[illegible][illegible][illegible][illegible][illegible]

	mg/L	0	0.5	-	92	-	90	-	90	110	2	-	90	110	2	-	90	-	90	-	72	117	0	15	-
Chloride	mg/L	0	0.5	-	92	-	90	-	90	110	2	-	90	110	2	-	90	-	90	-	72	117	0	15	-
Nitrate	mg/L	0	0.5	-	95	-	92	-	98	110	3	-	90	110	3	-	90	-	98	-	74	115	0	15	-
Sulfate	mg/L	0	1	-	95	-	93	-	92	110	2	-	90	110	2	-	90	-	92	-	69	116	0	15	-

	0	0.5	-	107	-	106	-	81	115	1	-	110	-	106	-	73	118	2	20
Calcium	0	0.5	-	107	-	106	-	81	115	1	-	110	-	106	-	73	118	2	20
Potassium	0.08	0.5	-	101	-	98	-	80	111	3	-	104	-	102	-	47	156	2	20
Magnesium	0	0.1	-	105	-	103	-	82	113	2	-	106	-	104	-	74	119	1	20
Sodium	0	0.5	-	105	-	102	-	87	112	3	-	105	-	102	-	74	120	2	20

002440

AQUEOUS SAMPLES

AQUEOUS SAMPLES																								
METHOD BLANK				LAB CONTROL								MATRIX QC												
UNITS	RESULT	RDL	FLG	LCS	%REC	FLG	LCSO	%REC	FLG	LCL	UCL	RPD	UCL	RPD	FLG	MS	%REC	FLG	MSD	LCL	UCL	RPD	UCL	FLG
Batch: VOA,524*96421 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap																								
1,1,1,2-Tetrachloroethane																								
ug/L	0	0.5	-	109	-	106	-	73	134	3	20	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane																								
ug/L	0	0.5	-	113	-	102	-	73	122	10	15	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane																								
ug/L	0	0.5	-	108	-	106	-	64	139	2	17	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane																								
ug/L	0	0.5	-	110	-	109	-	67	144	1	20	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane																								
ug/L	0	0.5	-	110	-	106	-	71	125	4	23	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene																								
ug/L	0	0.5	-	114	-	116	-	70	125	2	21	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Dichloropropene																								
ug/L	0	0.5	-	112	-	109	-	73	121	3	18	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene																								
ug/L	0	0.5	-	116	-	113	-	59	147	3	23	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane																								
ug/L	0	0.5	-	117	-	118	-	62	140	1	28	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene																								
ug/L	0	0.5	-	114	-	111	-	64	137	3	16	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene																								
ug/L	0	0.5	-	111	-	105	-	65	129	6	22	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane																								
ug/L	0	1	-	113	-	107	-	45	158	5	21	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane																								
ug/L	0	0.5	-	111	-	108	-	67	144	3	22	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane																								
ug/L	0	0.5	-	112	-	107	-	69	133	5	15	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene																								
ug/L	0	0.5	-	110	-	107	-	70	130	3	13	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane																								
ug/L	0	0.5	-	106	-	104	-	71	128	2	12	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene																								
ug/L	0	0.5	-	110	-	104	-	71	120	6	38	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene																								
ug/L	0	0.5	-	108	-	106	-	72	125	2	13	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropane																								
ug/L	0	0.5	-	108	-	106	-	68	142	2	21	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene																								
ug/L	0	0.5	-	110	-	107	-	71	127	3	14	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2-Dichloropropane																								
ug/L	0	0.5	-	78	-	6	Q	70	129	171	15	Q	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorotoluene																								
ug/L	0	0.5	-	106	-	102	-	69	123	4	13	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene																								
ug/L	0	0.5	-	114	-	109	-	68	126	4	13	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromobenzene																								
ug/L	0	0.5	-	106	-	105	-	72	123	1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromochloromethane																								
ug/L	0	0.5	-	109	-	108	-	73	128	1	14	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane																								
ug/L	0	0.5	-	108	-	107	-	69	137	1	19	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane																								
ug/L	0	0.5	-	106	-	104	-	62	133	2	17	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene																								
ug/L	0	0.5	-	106	-	105	-	74	121	1	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform																								
ug/L	0	0.5	-	110	-	107	-	66	151	3	23	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene																								
ug/L	0	0.5	-	110	-	105	-	71	130	5	19	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride																								
ug/L	0	0.5	-	110	-	106	-	71	126	4	18	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane																								
ug/L	0	0.5	-	106	-	100	-	68	123	6	16	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform																								
ug/L	0	0.5	-	124	-	122	-	72	124	2	13	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane																								
ug/L	0	0.5	-	110	-	107	-	60	125	3	30	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane																								
ug/L	0	0.5	-	108	-	104	-	67	144	4	22	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane																								
ug/L	0	0.5	-	110	-	109	-	74	139	1	20	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane																								
ug/L	0	0.5	-	113	-	106	-	46	146	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-

AQUEOUS SAMPLES

AQUEOUS SAMPLES			METHOD BLANK				LAB CONTROL				MATRIX QC					
	UNITS	RESULT	RDL	FLG	LCS	LCSO	LCL	UCL	RPD	FLG	MS	MSD	LCL	UCL	RPD	FLG
Batch: VOA, 524*96421 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap, con't																
Ethylbenzene	ug/L	0	0.5	-	109	-	105	-	74	125	4	17	-	-	-	-
Freon 113	ug/L	0	0.5	-	117	-	110	-	52	140	6	-	-	-	-	-
Hexachlorobutadiene	ug/L	0	0.5	-	115	-	111	-	65	130	4	17	-	-	-	-
Isopropylbenzene	ug/L	0	0.5	-	111	-	106	-	72	119	5	14	-	-	-	-
Methylene chloride	ug/L	0.79	1	-	128	-	121	-	66	132	6	13	-	-	-	-
N-Butylbenzene	ug/L	0	0.5	-	114	-	107	-	68	125	6	16	-	-	-	-
N-Propylbenzene	ug/L	0	0.5	-	111	-	105	-	72	119	6	14	-	-	-	-
Naphthalene	ug/L	0.27	1	-	118	-	110	-	49	162	7	32	-	-	-	-
Styrene	ug/L	0	0.5	-	112	-	107	-	70	133	5	48	-	-	-	-
Trichloroethene	ug/L	0	0.5	-	111	-	108	-	74	122	3	14	-	-	-	-
Trichlorofluoromethane	ug/L	0	0.5	-	118	-	111	-	57	145	6	19	-	-	-	-
Toluene	ug/L	0	0.5	-	109	-	105	-	75	124	4	21	-	-	-	-
Tetrachloroethene	ug/L	0	0.5	-	111	-	108	-	78	123	3	16	-	-	-	-
Vinyl chloride	ug/L	0	0.5	-	111	-	108	-	64	132	3	17	-	-	-	-
cis-1,2-Dichloroethene	ug/L	0	0.5	-	110	-	136	Q	75	124	21	13	Q	-	-	-
cis-1,3-Dichloropropene	ug/L	0	0.5	-	107	-	97	-	74	135	10	19	-	-	-	-
m- and p-Xylene Isomers	ug/L	0	1	-	110	-	106	-	65	134	4	25	-	-	-	-
o-Xylene	ug/L	0	0.5	-	109	-	105	-	71	130	4	21	-	-	-	-
p-Isopropyl toluene	ug/L	0	0.5	-	115	-	109	-	70	122	5	20	-	-	-	-
sec-Butylbenzene	ug/L	0	0.5	-	114	-	107	-	70	122	6	15	-	-	-	-
trans-1,2-Dichloroethene	ug/L	0	0.5	-	112	-	109	-	72	123	3	15	-	-	-	-
trans-1,3-Dichloropropene	ug/L	0	0.5	-	106	-	75	-	71	137	35	23	Q	-	-	-
tert-Butylbenzene	ug/L	0	0.5	-	114	-	108	-	71	120	5	15	-	-	-	-
[1,2-Dichlorobenzene-d4]	Percent	102	-	-	99	-	98	-	55	118	-	-	-	-	-	-
[4-Bromofluorobenzene]	Percent	106	-	-	99	-	97	-	77	127	-	-	-	-	-	-

----- METHOD BLANK -----

Batch: VOA,524*96422 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap

Chemical Name	Concentration		Exposure		Dose		Risk		Outcome		Action		Status	
	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L
1,1,1,2-Tetrachloroethane	0	0.5	-	90	-	105	-	73	134	15	20	-	-	-
1,1,1-Trichloroethane	0	0.5	-	93	-	119	-	73	122	24	15	Q	-	-
1,1,2,2-Tetrachloroethane	0	0.5	-	90	-	104	-	64	139	14	17	-	-	-
1,1,2-Trichloroethane	0	0.5	-	88	-	102	-	67	144	14	20	-	-	-
1,1-Dichloroethane	0	0.5	-	93	-	110	-	71	125	17	23	-	-	-
1,1-Dichloroethene	0	0.5	-	97	-	129	Q	70	125	29	21	Q	-	-
1,1-Dichloropropene	0	0.5	-	91	-	116	-	73	121	24	18	Q	-	-
1,2,3-Trichlorobenzene	0	0.5	-	102	-	110	-	59	147	8	23	-	-	-
1,2,3-Trichloropropane	0	0.5	-	107	-	119	-	62	140	11	28	-	-	-
1,2,4-Trichlorobenzene	0	0.5	-	100	-	110	-	64	137	10	16	-	-	-
1,2,4-Trimethylbenzene	0	0.5	-	94	-	115	-	65	129	20	22	-	-	-
1,2-Dibromo-3-chloropropane	0	1	-	95	-	109	-	45	158	14	21	-	-	-
1,2-Dibromoethane	0	0.5	-	89	-	103	-	67	144	14	22	-	-	-
1,2-Dichloroethane	0	0.5	-	94	-	106	-	69	133	12	15	-	-	-
1,2-Dichlorobenzene	0	0.5	-	98	-	120	-	70	130	20	13	Q	-	-
1,2-Dichloropropane	0	0.5	-	82	-	95	-	71	128	14	12	Q	-	-
1,3,5-Trimethylbenzene	0	0.5	-	93	-	115	-	71	120	21	38	-	-	-
1,3-Dichlorobenzene	0	0.5	-	97	-	119	-	72	125	21	13	Q	-	-
1,3-Dichloropropane	0	0.5	-	89	-	101	-	68	142	13	21	-	-	-
1,4-Dichlorobenzene	0	0.5	-	98	-	120	-	71	127	21	14	Q	-	-
2,2-Dichloropropane	0	0.5	-	78	-	109	-	70	129	33	15	Q	-	-
2-Chlorotoluene	0	0.5	-	90	-	115	-	69	123	25	13	Q	-	-
4-Chlorotoluene	0	0.5	-	93	-	118	-	68	126	24	13	Q	-	-
Bromobenzene	0	0.5	-	91	-	108	-	72	123	17	12	Q	-	-
Bromochloromethane	0	0.5	-	91	-	105	-	73	128	15	14	Q	-	-
Bromodichloromethane	0	0.5	-	89	-	103	-	69	137	14	19	-	-	-
Bromomethane	0	0.5	-	96	-	119	-	62	133	21	17	Q	-	-
Benzene	0	0.5	-	87	-	118	-	74	121	30	15	Q	-	-
Bromoform	0	0.5	-	93	-	105	-	66	151	12	23	-	-	-
Chlorobenzene	0	0.5	-	91	-	108	-	71	130	17	19	-	-	-
Carbon Tetrachloride	0	0.5	-	89	-	117	-	71	126	27	18	Q	-	-
Chloroethane	0	0.5	-	89	-	112	-	68	123	23	16	Q	-	-
Chloroform	0	0.5	-	102	-	122	-	72	124	18	13	Q	-	-
Chloromethane	0	0.5	-	92	-	114	-	60	125	21	30	-	-	-
Dibromochloromethane	0	0.5	-	88	-	101	-	67	144	14	22	-	-	-
Dibromomethane	0	0.5	-	90	-	103	-	74	139	14	20	-	-	-
Dichlorodifluoromethane	0	0.5	-	99	-	146	-	46	146	38	-	-	-	-

AQUEOUS SAMPLES

AQUEOUS SAMPLES			METHOD BLANK										LAB CONTROL										MATRIX QC									
	UNITS	RESULT	RDL	FLG	LCS	%REC	FLG	LCS	%REC	FLG	LCL	UCL	RPD	UCL	RPD	FLG	MS	%REC	FLG	MSD	FLG	LCL	UCL	RPD	UCL	RPD	FLG					
Batch: VOA,524*96422 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap, con't																																
Ethylbenzene	ug/L	0	0.5	-	89	-	112	-	74	125	23	17	Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
Freon 113	ug/L	0.32	0.5	-	100	-	137	-	52	140	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Hexachlorobutadiene	ug/L	0	0.5	-	90	-	106	-	65	130	17	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Isopropylbenzene	ug/L	0	0.5	-	92	-	117	-	72	119	24	14	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
Methylene chloride	ug/L	0.32	1	-	98	-	128	-	66	132	26	13	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
N-Butylbenzene	ug/L	0	0.5	-	94	-	120	-	68	125	25	16	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
N-Propylbenzene	ug/L	0	0.5	-	92	-	117	-	72	119	24	14	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
Naphthalene	ug/L	0	1	-	98	-	111	-	49	162	13	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Styrene	ug/L	0	0.5	-	93	-	111	-	70	133	18	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Trichloroethene	ug/L	0	0.5	-	93	-	118	-	74	122	24	14	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
Trichlorofluoromethane	ug/L	0	0.5	-	102	-	141	-	57	145	32	19	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
Toluene	ug/L	0	0.5	-	88	-	108	-	75	124	20	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Tetrachloroethene	ug/L	0	0.5	-	91	-	117	-	78	123	25	16	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
Vinyl chloride	ug/L	0	0.5	-	98	-	125	-	64	132	24	17	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
cis-1,2-Dichloroethene	ug/L	0	0.5	-	115	-	137	Q	75	124	17	13	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
cis-1,3-Dichloropropene	ug/L	0	0.5	-	85	-	95	-	74	135	11	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
m- and p-Xylene Isomers	ug/L	0	1	-	91	-	114	-	65	134	22	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
o-Xylene	ug/L	0	0.5	-	90	-	112	-	71	130	22	21	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
p-Isopropyl toluene	ug/L	0	0.5	-	96	-	122	-	70	122	24	20	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
sec-Butylbenzene	ug/L	0	0.5	-	95	-	122	-	70	122	25	15	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
trans-1,2-Dichloroethene	ug/L	0	0.5	-	98	-	121	-	72	123	21	15	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
trans-1,3-Dichloropropene	ug/L	0	0.5	-	85	-	97	-	71	137	13	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
tert-Butylbenzene	ug/L	0	0.5	-	95	-	121	Q	71	120	25	15	Q	-	-	-	-	-	-	-	-	-	-	-	-	-						
[1,2-Dichlorobenzene-d4]	Percent	97	-	-	111	-	112	-	55	118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
[4-Bromofluorobenzene]	Percent	98	-	-	102	-	102	-	77	127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						

----- METHOD BLANK

LAB CONTROL

MATRIX OF

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Batch: VOA_524*96426 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap																
	UNITS	RESULT	RDL	LLS			LCSU			RPD			MSD	RPD	RPD	RPD
				%REC	FLG	UCL	%REC	FLG	LCL	%REC	FLG	UCL				
1,1,1,2-Tetrachloroethane	ug/L	0	0.5	-	92	-	101	-	73	134	9	20	-	-	-	-
1,1,1,1-Trichloroethane	ug/L	0	0.5	-	100	-	115	-	73	122	14	15	-	-	-	-
1,1,1,2,2-Tetrachloroethane	ug/L	0	0.5	-	84	-	92	-	64	139	9	17	-	-	-	-
1,1,1,2-Trichloroethane	ug/L	0	0.5	-	87	-	88	-	67	144	1	20	-	-	-	-
1,1,1-Dichloroethane	ug/L	0	0.5	-	95	-	103	-	71	125	9	23	-	-	-	-
1,1,1-Dichloroethene	ug/L	0	0.5	-	98	-	114	-	70	125	15	21	-	-	-	-
1,1,1-Dichloropropene	ug/L	0	0.5	-	98	-	104	-	73	121	6	18	-	-	-	-
1,2,3-Trichlorobenzene	ug/L	0	0.5	-	88	-	90	-	59	147	2	23	-	-	-	-
1,2,3-Trichloropropane	ug/L	0	0.5	-	95	-	100	-	62	140	5	28	-	-	-	-
1,2,4-Trichlorobenzene	ug/L	0	0.5	-	87	-	97	-	64	137	11	16	-	-	-	-
1,2,4-Trimethyl benzene	ug/L	0	0.5	-	92	-	107	-	65	129	15	22	-	-	-	-
1,2-Dibromo-3-chloropropane	ug/L	0	1	-	92	-	110	-	45	158	18	21	-	-	-	-
1,2-Dibromoethane	ug/L	0	0.5	-	90	-	95	-	67	144	6	22	-	-	-	-
1,2-Dichloroethane	ug/L	0	0.5	-	95	-	93	-	69	133	2	15	-	-	-	-
1,2-Dichlorobenzene	ug/L	0	0.5	-	90	-	98	-	70	130	8	13	-	-	-	-
1,2-Dichloropropane	ug/L	0	0.5	-	89	-	90	-	71	128	1	12	-	-	-	-
1,3,5-Trimethyl benzene	ug/L	0	0.5	-	94	-	111	-	71	120	16	38	-	-	-	-
1,3-Dichlorobenzene	ug/L	0	0.5	-	90	-	105	-	72	125	15	13	Q	-	-	-
1,3-Dichloropropane	ug/L	0	0.5	-	88	-	94	-	68	142	6	21	-	-	-	-
1,4-Dichlorobenzene	ug/L	0	0.5	-	92	-	101	-	71	127	9	14	-	-	-	-
2,2-Dichloropropane	ug/L	0	0.5	-	107	-	121	-	70	129	12	15	-	-	-	-
2-Chlorotoluene	ug/L	0	0.5	-	93	-	106	-	69	123	13	13	-	-	-	-
4-Chlorotoluene	ug/L	0	0.5	-	96	-	104	-	68	126	8	13	-	-	-	-
Bromobenzene	ug/L	0	0.5	-	90	-	99	-	72	123	10	12	-	-	-	-
Bromochloromethane	ug/L	0	0.5	-	94	-	93	-	73	128	1	14	-	-	-	-
Bromodichloromethane	ug/L	0	0.5	-	90	-	99	-	69	137	9	19	-	-	-	-
Bromomethane	ug/L	0	0.5	-	96	-	101	-	62	133	5	17	-	-	-	-
Benzene	ug/L	0	0.5	-	91	-	94	-	74	121	3	15	-	-	-	-
Bromoform	ug/L	0	0.5	-	89	-	95	-	66	151	6	23	-	-	-	-
Chlorobenzene	ug/L	0	0.5	-	92	-	104	-	71	130	12	19	-	-	-	-
Carbon Tetrachloride	ug/L	0	0.5	-	103	-	122	-	71	126	17	18	-	-	-	-
Chloroethane	ug/L	0	0.5	-	95	-	97	-	68	123	2	16	-	-	-	-
Chloroform	ug/L	0	0.5	-	108	-	114	-	72	124	5	13	-	-	-	-
Chloromethane	ug/L	0	0.5	-	93	-	88	-	60	125	5	30	-	-	-	-
Dibromochloromethane	ug/L	0	0.5	-	88	-	92	-	67	144	4	22	-	-	-	-
Dibromomethane	ug/L	0	0.5	-	90	-	86	-	74	139	5	20	-	-	-	-
Dichlorodifluoromethane	ug/L	0	0.5	-	100	-	86	-	46	146	15	-	-	-	-	-

AQUEOUS SAMPLES

AQUEOUS SAMPLES																													
METHOD BLANK										LAB CONTROL										MATRIX QC									
UNITS	RESULT	RDL	FLG	LCS	FLG	%REC	LCSD	RPD	FLG	LCL	UCL	RPD	UCL	FLG	MS	FLG	%REC	MSD	FLG	LCL	UCL	RPD	UCL	FLG	RPD	UCL	FLG		
Batch: VOA,524*96426 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap, con't																													
Ethylbenzene	ug/L	0	0.5	-	95	-	107	-	74	125	12	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Freon 113	ug/L	0	0.5	-	100	-	112	-	52	140	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Hexachlorobutadiene	ug/L	0	0.5	-	95	-	111	-	65	130	16	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Isopropylbenzene	ug/L	0	0.5	-	97	-	112	-	72	119	15	14	Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Methylene chloride	ug/L	4.0	1	Q	102	-	113	-	66	132	10	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
N-Butylbenzene	ug/L	0	0.5	-	95	-	110	-	68	125	15	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
N-Propylbenzene	ug/L	0	0.5	-	96	-	111	-	72	119	14	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene	ug/L	0	1	-	90	-	104	-	49	162	14	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Styrene	ug/L	0	0.5	-	92	-	105	-	70	133	13	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Trichloroethene	ug/L	0	0.5	-	97	-	114	-	74	122	16	14	Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Trichlorofluoromethane	ug/L	0	0.5	-	104	-	113	-	57	145	8	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Toluene	ug/L	0	0.5	-	91	-	103	-	75	124	12	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Tetrachloroethene	ug/L	0	0.5	-	100	-	114	-	78	123	13	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Vinyl chloride	ug/L	0	0.5	-	99	-	99	-	64	132	0	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
cis-1,2-Dichloroethene	ug/L	0	0.5	-	122	-	123	-	75	124	1	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
cis-1,3-Dichloropropene	ug/L	0	0.5	-	87	-	94	-	74	135	8	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
m- and p-Xylene Isomers	ug/L	0	1	-	94	-	108	-	65	134	14	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
o-Xylene	ug/L	0	0.5	-	91	-	103	-	71	130	13	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
p-Isopropyl toluene	ug/L	0	0.5	-	98	-	109	-	70	122	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
sec-Butylbenzene	ug/L	0	0.5	-	97	-	114	-	70	122	16	15	Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
trans-1,2-Dichloroethene	ug/L	0	0.5	-	99	-	112	-	72	123	12	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
trans-1,3-Dichloropropene	ug/L	0	0.5	-	87	-	92	-	71	137	6	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
tert-Butylbenzene	ug/L	0	0.5	-	98	-	116	-	71	120	17	15	Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
[1,2-Dichlorobenzene-d4]	Percent	92	-	-	96	-	114	-	55	118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
[4-Bromofluorobenzene]	Percent	98	-	-	99	-	118	-	77	127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Batch: FUEL*9640 Method: 8015M - Modified 8015

TPH (total)

mg/L

84 - 80

53 128 5 30

[Naphthalene]

Percent

108 - 103

55 127

AQUEOUS SAMPLES

Batch: ALK*9648 Method: 310.1 - Alkalinity, Titrimetric

UNITS	B6071100*1	C6072012*1	LC	LT	C6072013*1	LC	LT	9607264*5	R1	R2	S1	S2	T
Carbonate Alk (as CaCO3)	MB	0	0	0	0	0	0	<10	<10	-	<10	<10	<10
Bicarbonate Alk (as CaCO3)	0	608	596	596	592	592	596	74	74	-	544	538	546
Hydroxide Alk (as CaCO3)	0	0	0	0	0	0	0	<10	<10	-	<10	<10	<10
Total Alkalinity (as CaCO3)	0	608	596	596	592	592	596	74	74	-	544	538	546

Batch: TDS*9670 Method: 160.1 - Residue, Filterable, Gravimetric, Dried at 180 C

UNITS	B6071120*1	C6072053*1	LC	LT	C6072054*1	LC	LT	9607215*1	R1	R2	S1	S2	T
Dissolved Solids	MB	0	1030	1000	1020	1020	1000	720	720	-	1830	1880	1720

Batch: TURB*96131 Method: 180.1 - Turbidity, Nephelometric

UNITS	B607690*1	C6071273*1	LC	LT	C6071274*1	LC	LT	9607191*1	R1	R2	S1	S2	T
Turbidity	NTU	0	8.2	8.1	8.2	8.2	8.1	6.5	6.5	6.5	-	-	-

Batch: NH3-N*96174 Method: 350.1 - Nitrogen, Ammonia-Colormetric, Automated Phenate

UNITS	B6071028*1	C6071894*1	LC	LT	C6071895*1	LC	LT	9607215*3	R1	R2	S1	S2	T
Ammonia	MB	0	1.96	2.00	2.02	2.02	2.00	<0.1	<0.1	-	4.83	4.97	5.00

Batch: ANIONS, CL*960711 Method: 300.0 - Inorganic anions in water, Ion chromatograph

UNITS	B607826*1	C6071542*1	LC	LT	C6071543*1	LC	LT	9607215*1	R1	R2	S1	S2	T
Chloride	MB	0	18.4	20.0	18.0	18.0	20.0	36	36	-	108	108	116

Batch: ANIONS, NO3*960711 Method: 300.0 - Inorganic anions in water, Ion chromatograph

UNITS	B607827*1	C6071544*1	LC	LT	C6071545*1	LC	LT	9607215*1	R1	R2	S1	S2	T
Nitrate	MB	0	23.7	25.0	23.1	23.1	25.0	80	80	-	237	238	240

Batch: ANIONS, SO4*960711 Method: 300.0 - Inorganic anions in water, Ion chromatograph

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AQUEOUS SAMPLES

UNITS	MB	LC	LT	LC	LT	R1	R2	S1	S2	T
mg/L	0	47.6	50.0	46.7	50.0	120	-	266	266	279

Batch: DIG, AQ*961573 Method: 3010 - Acid Digestion of Aqueous etc.

UNITS	MB	(LCS)	(LCSD)	(MTX QC)
Date	07/11/96	07/11/96	07/11/96	07/11/96
		LC	LC	R1
		LT	LT	R2
				S1
				S2
				T

Batch: CA*961573 Method: 6010 - ICAP Metals

UNITS	MB	C6071300*1	C6071301*1	9607190*1
mg/L	0	53.6	53.1	76
		LC	LC	R1
		LT	LT	R2
				S1
				S2
				T

Batch: K*961573 Method: 6010 - ICAP Metals

UNITS	MB	C6071302*1	C6071303*1	9607190*1
mg/L	0.08	50.7	49.2	2.8
		LC	LC	R1
		LT	LT	R2
				S1
				S2
				T

Batch: MG*961573 Method: 6010 - ICAP Metals

UNITS	MB	C6071304*1	C6071305*1	9607190*1
mg/L	0	52.3	51.4	17
		LC	LC	R1
		LT	LT	R2
				S1
				S2
				T

Batch: NA*961573 Method: 6010 - ICAP Metals

UNITS	MB	C6071306*1	C6071307*1	9607190*1
mg/L	0	52.6	50.8	16
		LC	LC	R1
		LT	LT	R2
				S1
				S2
				T

AQUEOUS SAMPLES

Batch: V0A,524*96421 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap, con't

	UNITS	B6071289*1	MB	C6072391*1	LC	LT	C6072392*1	LC	LT	N/A	R1	R2	S1	S2	T
Dibromomethane	ug/L		0		11.0	10.0		10.9	10.0	-	-	-	-	-	-
Dichlorodifluoromethane	ug/L		0		11.3	10.0		10.6	10.0	-	-	-	-	-	-
Ethylbenzene	ug/L		0		10.9	10.0		10.5	10.0	-	-	-	-	-	-
Freon 113	ug/L		0		11.7	10.9		11.0	10.0	-	-	-	-	-	-
Hexachlorobutadiene	ug/L		0		11.5	10.0		11.1	10.0	-	-	-	-	-	-
Isopropylbenzene	ug/L		0		11.1	10.0		10.6	10.0	-	-	-	-	-	-
Methylene chloride	ug/L		0.79		12.8	10.0		12.1	10.0	-	-	-	-	-	-
N-Butylbenzene	ug/L		0		11.4	10.0		10.7	10.0	-	-	-	-	-	-
N-Propylbenzene	ug/L		0		11.1	10.0		10.5	10.0	-	-	-	-	-	-
Naphthalene	ug/L		0.27		11.8	10.0		11.0	10.0	-	-	-	-	-	-
Styrene	ug/L		0		11.2	10.0		10.7	10.0	-	-	-	-	-	-
Trichloroethene	ug/L		0		11.1	10.0		10.8	10.0	-	-	-	-	-	-
Trichlorofluoromethane	ug/L		0		11.8	10.0		11.1	10.0	-	-	-	-	-	-
Toluene	ug/L		0		10.9	10.0		10.5	10.0	-	-	-	-	-	-
Tetrachloroethene	ug/L		0		11.1	10.0		10.8	10.0	-	-	-	-	-	-
Vinyl chloride	ug/L		0		11.1	10.0		10.8	10.0	-	-	-	-	-	-
cis-1,2-Dichloroethene	ug/L		0		11.0	10.0		13.6	10.0	-	-	-	-	-	-
cis-1,3-Dichloropropene	ug/L		0		10.7	10.0		9.71	10.0	-	-	-	-	-	-
m- and p-Xylene Isomers	ug/L		0		21.9	20.0		21.1	20.0	-	-	-	-	-	-
o-Xylene	ug/L		0		10.9	10.0		10.5	10.0	-	-	-	-	-	-
p-Isopropyl toluene	ug/L		0		11.5	10.0		10.9	10.0	-	-	-	-	-	-
sec-Butylbenzene	ug/L		0		11.4	10.0		10.7	10.0	-	-	-	-	-	-
trans-1,2-Dichloroethene	ug/L		0		11.2	10.0		10.9	10.0	-	-	-	-	-	-
trans-1,3-Dichloropropene	ug/L		0		10.6	10.0		7.47	10.0	-	-	-	-	-	-
tert-Butylbenzene	ug/L		0		11.4	10.0		10.8	10.0	-	-	-	-	-	-
1,2-Dichlorobenzene-d4 Rep.	ug/L		10.2		9.91	10.0		9.84	10.0	-	-	-	-	-	-
1,2-Dichlorobenzene-d4 Theo	ug/L		10.0		10.0	10.0		10.0	10.0	-	-	-	-	-	-
4-Bromofluorobenzene Rep.	ug/L		10.6		9.88	10.0		9.72	10.0	-	-	-	-	-	-
4-Bromofluorobenzene Theo.	ug/L		10.0		10.0	10.0		10.0	10.0	-	-	-	-	-	-

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AQUEOUS SAMPLES

Batch: V0A.524*96422 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap

Date Analyzed	Dilution Factor	B6071320*1		C6072453*1		C6072490*1		N/A			
		MB	LC	MB	LC	MB	LC	R1	R2	S1	S2
UNITS											
Date		07/17/96	07/17/96	07/17/96	07/17/96	07/17/96	07/17/96				
Times		1	1	1	1	1	1				
ug/L	1,1,1,2-Tetrachloroethane	0	9.02	10.0	10.5	10.0	10.0				
ug/L	1,1,1-Trichloroethane	0	9.31	10.0	11.9	10.0	10.0				
ug/L	1,1,2,2-Tetrachloroethane	0	9.03	10.0	10.4	10.0	10.0				
ug/L	1,1,2-Trichloroethane	0	8.84	10.0	10.2	10.0	10.0				
ug/L	1,1-Dichloroethane	0	9.30	10.0	11.0	10.0	10.0				
ug/L	1,1-Dichloroethene	0	9.68	10.0	12.9	10.0	10.0				
ug/L	1,1-Dichloropropene	0	9.10	10.0	11.6	10.0	10.0				
ug/L	1,2,3-Trichlorobenzene	0	10.2	10.0	11.0	10.0	10.0				
ug/L	1,2,3-Trichloropropene	0	10.7	10.0	11.9	10.0	10.0				
ug/L	1,2,4-Trichlorobenzene	0	9.98	10.0	11.0	10.0	10.0				
ug/L	1,2,4-Trimethylbenzene	0	9.37	10.0	11.5	10.0	10.0				
ug/L	1,2-Dibromo-3-chloropropane	0	9.50	10.0	10.9	10.0	10.0				
ug/L	1,2-Dibromoethane	0	8.93	10.0	10.3	10.0	10.0				
ug/L	1,2-Dichloroethane	0	9.41	10.0	10.6	10.0	10.0				
ug/L	1,2-Dichlorobenzene	0	9.82	10.0	12.0	10.0	10.0				
ug/L	1,2-Dichloropropene	0	8.20	10.0	9.46	10.0	10.0				
ug/L	1,3,5-Trimethylbenzene	0	9.31	10.0	11.5	10.0	10.0				
ug/L	1,3-Dichlorobenzene	0	9.65	10.0	11.9	10.0	10.0				
ug/L	1,3-Dichloropropene	0	8.89	10.0	10.1	10.0	10.0				
ug/L	1,4-Dichlorobenzene	0	9.75	10.0	12.0	10.0	10.0				
ug/L	2,2-Dichloropropene	0	7.81	10.0	10.9	10.0	10.0				
ug/L	2-Chlorotoluene	0	8.98	10.0	11.5	10.0	10.0				
ug/L	4-Chlorotoluene	0	9.31	10.0	11.8	10.0	10.0				
ug/L	Bromobenzene	0	9.10	10.0	10.8	10.0	10.0				
ug/L	Bromochloromethane	0	9.08	10.0	10.5	10.0	10.0				
ug/L	Bromodichloromethane	0	8.93	10.0	10.3	10.0	10.0				
ug/L	Bromomethane	0	9.59	10.0	11.9	10.0	10.0				
ug/L	Benzene	0	8.74	10.0	11.8	10.0	10.0				
ug/L	Bromoform	0	9.32	10.0	10.5	10.0	10.0				
ug/L	Chlorobenzene	0	9.07	10.0	10.8	10.0	10.0				
ug/L	Carbon Tetrachloride	0	8.91	10.0	11.7	10.0	10.0				
ug/L	Chloroethane	0	8.87	10.0	11.2	10.0	10.0				
ug/L	Chloroform	0	10.2	10.0	12.2	10.0	10.0				
ug/L	Chloromethane	0	9.23	10.0	11.4	10.0	10.0				
ug/L	Dibromochloromethane	0	8.70	10.0	10.0	10.0	10.0				

AQUEOUS SAMPLES

Batch: V0A.524*96422 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap, con't

	UNITS	B6071320*1	C6072453*1	LC	LT	C6072490*1	LC	LT	N/A	R1	R2	S1	S2	T
Dibromomethane	ug/L	0	0	8.95	10.0	10.3	10.0	10.0	-	-	-	-	-	-
Dichlorodifluoromethane	ug/L	0	0	9.91	10.0	14.6	10.0	10.0	-	-	-	-	-	-
Ethylbenzene	ug/L	0	0	8.87	10.0	11.2	10.0	10.0	-	-	-	-	-	-
Freon 113	ug/L	0.32	0	10.0	10.0	13.7	10.0	10.0	-	-	-	-	-	-
Hexachlorobutadiene	ug/L	0	0	8.95	10.0	10.6	10.0	10.0	-	-	-	-	-	-
Isopropylbenzene	ug/L	0	0	9.15	10.0	11.7	10.0	10.0	-	-	-	-	-	-
Methylene chloride	ug/L	0.32	0	9.82	10.0	12.8	10.0	10.0	-	-	-	-	-	-
N-Butylbenzene	ug/L	0	0	9.36	10.0	12.0	10.0	10.0	-	-	-	-	-	-
N-Propylbenzene	ug/L	0	0	9.16	10.0	11.7	10.0	10.0	-	-	-	-	-	-
Naphthalene	ug/L	0	0	9.76	10.0	11.1	10.0	10.0	-	-	-	-	-	-
Styrene	ug/L	0	0	9.29	10.0	11.1	10.0	10.0	-	-	-	-	-	-
Trichloroethene	ug/L	0	0	9.30	10.0	11.8	10.0	10.0	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	0	0	10.2	10.0	14.1	10.0	10.0	-	-	-	-	-	-
Toluene	ug/L	0	0	8.80	10.0	10.8	10.0	10.0	-	-	-	-	-	-
Tetrachloroethene	ug/L	0	0	9.06	10.0	11.7	10.0	10.0	-	-	-	-	-	-
Vinyl chloride	ug/L	0	0	9.82	10.0	12.5	10.0	10.0	-	-	-	-	-	-
cis-1,2-Dichloroethene	ug/L	0	0	11.5	10.0	13.7	10.0	10.0	-	-	-	-	-	-
cis-1,3-Dichloropropene	ug/L	0	0	8.53	10.0	9.52	10.0	10.0	-	-	-	-	-	-
m- and p-Xylene Isomers	ug/L	0	0	18.2	20.0	22.8	20.0	20.0	-	-	-	-	-	-
o-Xylene	ug/L	0	0	9.02	10.0	11.2	10.0	10.0	-	-	-	-	-	-
p-Isopropyl toluene	ug/L	0	0	9.57	10.0	12.2	10.0	10.0	-	-	-	-	-	-
sec-Butylbenzene	ug/L	0	0	9.45	10.0	12.2	10.0	10.0	-	-	-	-	-	-
trans-1,2-Dichloroethene	ug/L	0	0	9.81	10.0	12.1	10.0	10.0	-	-	-	-	-	-
trans-1,3-Dichloropropene	ug/L	0	0	8.48	10.0	9.65	10.0	10.0	-	-	-	-	-	-
tert-Butylbenzene	ug/L	0	0	9.45	10.0	12.1	10.0	10.0	-	-	-	-	-	-
1,2-Dichlorobenzene-d4 Rep.	ug/L	9.69	0	11.1	10.0	11.2	10.0	10.0	-	-	-	-	-	-
1,2-Dichlorobenzene-d4 Theo	ug/L	10.0	0	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-
4-Bromofluorobenzene Rep.	ug/L	9.77	0	10.2	10.0	10.2	10.0	10.0	-	-	-	-	-	-
4-Bromofluorobenzene Theo.	ug/L	10.0	0	10.0	10.0	10.0	10.0	10.0	-	-	-	-	-	-

AQUEOUS SAMPLES

Batch: VOA,524*96426 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap

Date Analyzed	Dilution Factor	UNITS	B6071766*1	C6072962*1	C6072963*1	N/A	R1	R2	S1	S2	T
Date	Times	Date	MB	LC	LT						
1,1,1,2-Tetrachloroethane	07/23/96	1	1	1	1	-	-	-	-	-	-
1,1,1-Trichloroethane	07/23/96	0	9.23	10.0	10.1	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	07/23/96	0	9.99	10.0	11.5	-	-	-	-	-	-
1,1,2-Trichloroethane	07/23/96	0	8.39	10.0	9.15	-	-	-	-	-	-
1,1-Dichloroethane	07/23/96	0	8.72	10.0	8.82	-	-	-	-	-	-
1,1-Dichloroethene	07/23/96	0	9.46	10.0	10.3	-	-	-	-	-	-
1,1-Dichloropropene	07/23/96	0	9.78	10.0	11.4	-	-	-	-	-	-
1,2,3-Trichlorobenzene	07/23/96	0	9.84	10.0	10.4	-	-	-	-	-	-
1,2,3-Trichloropropane	07/23/96	0	8.82	10.0	9.01	-	-	-	-	-	-
1,2,4-Trichlorobenzene	07/23/96	0	9.45	10.0	9.97	-	-	-	-	-	-
1,2,4-Trimethylbenzene	07/23/96	0	8.71	10.0	9.69	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	07/23/96	0	9.21	10.0	10.7	-	-	-	-	-	-
1,2-Dibromoethane	07/23/96	0	9.17	10.0	11.0	-	-	-	-	-	-
1,2-Dichloroethane	07/23/96	0	8.99	10.0	9.50	-	-	-	-	-	-
1,2-Dichlorobenzene	07/23/96	0	9.48	10.0	9.27	-	-	-	-	-	-
1,2-Dichloropropane	07/23/96	0	9.02	10.0	9.79	-	-	-	-	-	-
1,3,5-Trimethylbenzene	07/23/96	0	8.88	10.0	8.98	-	-	-	-	-	-
1,3-Dichlorobenzene	07/23/96	0	9.41	10.0	11.1	-	-	-	-	-	-
1,3-Dichloropropane	07/23/96	0	9.00	10.0	10.5	-	-	-	-	-	-
1,4-Dichlorobenzene	07/23/96	0	8.81	10.0	9.38	-	-	-	-	-	-
2,2-Dichloropropane	07/23/96	0	9.20	10.0	10.1	-	-	-	-	-	-
2-Chlorotoluene	07/23/96	0	10.7	10.0	12.1	-	-	-	-	-	-
4-Chlorotoluene	07/23/96	0	9.29	10.0	10.6	-	-	-	-	-	-
Bromobenzene	07/23/96	0	9.63	10.0	10.4	-	-	-	-	-	-
Bromochloromethane	07/23/96	0	9.01	10.0	9.92	-	-	-	-	-	-
Bromodichloromethane	07/23/96	0	9.39	10.0	9.27	-	-	-	-	-	-
Bromomethane	07/23/96	0	9.00	10.0	9.85	-	-	-	-	-	-
Benzene	07/23/96	0	9.59	10.0	10.1	-	-	-	-	-	-
Bromoform	07/23/96	0	9.12	10.0	9.44	-	-	-	-	-	-
Chlorobenzene	07/23/96	0	8.93	10.0	9.45	-	-	-	-	-	-
Carbon Tetrachloride	07/23/96	0	9.24	10.0	10.4	-	-	-	-	-	-
Chloroethane	07/23/96	0	10.3	10.0	12.2	-	-	-	-	-	-
Chloroform	07/23/96	0	9.45	10.0	9.68	-	-	-	-	-	-
Chloromethane	07/23/96	0	10.8	10.0	11.4	-	-	-	-	-	-
Dibromochloromethane	07/23/96	0	9.29	10.0	8.83	-	-	-	-	-	-
		0	8.84	10.0	9.21	-	-	-	-	-	-

002453

002453

AQUEOUS SAMPLES

Batch: VOA,524*96426 Method: 524.2 - GC/MS for Volatile Organics, Capillary Column, Purge and trap, cont'd

	UNITS	B6071766*1	C6072962*1	LC	LT	C6072963*1	LC	LT	N/A	R1	R2	S1	S2	T
Dibromomethane	ug/L	0		9.02	10.0		8.60	10.0	-	-	-	-	-	-
Dichlorodifluoromethane	ug/L	0		10.0	10.0		8.64	10.0	-	-	-	-	-	-
Ethylbenzene	ug/L	0		9.50	10.0		10.7	10.0	-	-	-	-	-	-
Freon 113	ug/L	0		10.0	10.0		11.2	10.0	-	-	-	-	-	-
Hexachlorobutadiene	ug/L	0		9.47	10.0		11.1	10.0	-	-	-	-	-	-
Isopropylbenzene	ug/L	0		9.65	10.0		11.2	10.0	-	-	-	-	-	-
Methylene chloride	ug/L	4.0		10.2	10.0		11.3	10.0	-	-	-	-	-	-
N-Butylbenzene	ug/L	0		9.50	10.0		11.0	10.0	-	-	-	-	-	-
N-Propylbenzene	ug/L	0		9.64	10.0		11.1	10.0	-	-	-	-	-	-
Naphthalene	ug/L	0		9.01	10.0		10.4	10.0	-	-	-	-	-	-
Styrene	ug/L	0		9.20	10.0		10.5	10.0	-	-	-	-	-	-
Trichloroethene	ug/L	0		9.74	10.0		11.4	10.0	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	0		10.4	10.0		11.3	10.0	-	-	-	-	-	-
Toluene	ug/L	0		9.11	10.0		10.3	10.0	-	-	-	-	-	-
Tetrachloroethene	ug/L	0		10.0	10.0		11.4	10.0	-	-	-	-	-	-
Vinyl chloride	ug/L	0		9.93	10.0		9.93	10.0	-	-	-	-	-	-
cis-1,2-Dichloroethene	ug/L	0		12.2	10.0		12.3	10.0	-	-	-	-	-	-
cis-1,3-Dichloropropene	ug/L	0		8.67	10.0		9.43	10.0	-	-	-	-	-	-
m- and p-Xylene Isomers	ug/L	0		18.7	20.0		21.6	20.0	-	-	-	-	-	-
o-Xylene	ug/L	0		9.07	10.0		10.3	10.0	-	-	-	-	-	-
p-Isopropyl toluene	ug/L	0		9.77	10.0		10.9	10.0	-	-	-	-	-	-
sec-Butylbenzene	ug/L	0		9.71	10.0		11.4	10.0	-	-	-	-	-	-
trans-1,2-Dichloroethene	ug/L	0		9.92	10.0		11.2	10.0	-	-	-	-	-	-
trans-1,3-Dichloropropene	ug/L	0		8.67	10.0		9.23	10.0	-	-	-	-	-	-
tert-Butylbenzene	ug/L	0		9.76	10.0		11.6	10.0	-	-	-	-	-	-
1,2-Dichlorobenzene-d4 Rep.	ug/L	9.15		9.57	10.0		11.4	10.0	-	-	-	-	-	-
1,2-Dichlorobenzene-d4 Theo	ug/L	10.0		10.0	10.0		10.0	10.0	-	-	-	-	-	-
4-Bromofluorobenzene Rep.	ug/L	9.84		9.92	10.0		11.8	10.0	-	-	-	-	-	-
4-Bromofluorobenzene Theo.	ug/L	10.0		10.0	10.0		10.0	10.0	-	-	-	-	-	-

AQUEOUS SAMPLES

Batch: FUEL*9640 Method: 8015M - Modified 8015

Date Analyzed	Date Extracted	Dilution Factor	TPH (total)	Naphthalene Reported	Naphthalene Theoretical										
						UNITS	B6071319*1	C6072451*1	C6072452*1	9607191*1	R1	R2	S1	S2	T
						Date	MB	LC	LT	LC	LT				
						Date	07/16/96	07/16/96	07/16/96	07/16/96	07/16/96	-	07/16/96	07/16/96	07/16/96
						Times	1	1	1	1	1	-	07/15/96	07/15/96	07/15/96
						mg/kg	0	25.4	30.0	25.3	1	-	1	1	1
						mg/kg	2.09	2.26	2.00	2.28	<2	-	25.3	24.0	30.0
						mg/kg	2.00	2.00	2.00	2.00	1.92	-	2.15	2.06	2.00
											2.00	-	2.00	2.00	2.00

RWQCB Forms

LABORATORY REPORT FORM (COVER PAGE 1)

Comments:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM (COVER PAGE 2)

Organic Analyses

EPA 8015M

EPA 524.2

of Samples

Seven

Eleven

of Samples

Subcontracted

Sample Condition: Acceptable

Inorganic Analyses

EPA 350.1

EPA 300.0

EPA 180.1

EPA 160.1

EPA 310.1

EPA 6010

of Samples

Seven

Seven

Seven

Seven

Seven

Seven

of Samples

Subcontracted

Sample Condition: Acceptable

Microbiological Analyses

of Samples

of Samples
Subcontracted

Sample Condition:

Other Types of Analyses

of Samples

of Samples
Subcontracted

Sample condition:

ANALYTICAL RESULT FOR ORGANICS

Method: 8015M

Reporting Unit: ug/L

COMPOUND	DATE ANALYZED		07/16/96	07/16/96	07/16/96	07/16/96	07/17/96	07/17/96	07/17/96
	DATE EXTRACTED		07/15/96	07/15/96	07/15/96	07/15/96	07/15/96	07/15/96	07/15/96
	LAB SAMPLE I.D.		9607191*1	9607191*2	9607191*3	9607191*4	9607215*1	9607215*2	9607215*3
	CLIENT SAMPLE I.D.		GW-1	GW-2	GW-3	GW-9	GW-7	GW-8	GW-10
	EXTRACTION SOLVENT								
	EXTRACTION METHOD		8015M	8015M	8015M	8015M	8015M	8015M	8015M
	DILUTION FACTOR		1	1	1	1	1	1	1
	CRDL								
	TPH (total)		2	<2	<2	<2	<2	<2	<2
SURROGATE	SPK CONC	ACP%	%RC	%RC	%RC	%RC	%RC	%RC	%RC
Naphthalene Reported	2	55-127	96	93	92	101	93	103	97

ANALYTICAL RESULT FOR ORGANICS

Method: 524.2

Reporting Unit: ug/L

	DATE ANALYZED	07/16/96	07/16/96	07/17/96	07/17/96	07/17/96	07/17/96	07/17/96
	DATE EXTRACTED							
	LAB SAMPLE I.D.	9607189*1	9607191*1	9607191*2	9607191*3	9607191*4	9607215*2	9607215*3
	CLIENT SAMPLE I.D.	Pump Blank	GW-1	GW-2	GW-3	GW-9	GW-8	GW-10
	EXTRACTION SOLVENT							
	EXTRACTION METHOD	524.2	524.2	524.2	524.2	524.2	524.2	524.2
	DILUTION FACTOR	1	1	1	1	1	1	1
	CRDL							
COMPOUND								
1,1,1,2-Tetrachloroethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5	<0.5	3.8	0.81	2.6	12	4.9	89
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.5
1,1-Dichloroethane	0.5	<0.5	0.96	<0.5	2.6	<0.5	<0.5	8.6
1,1-Dichloroethene	0.5	<0.5	6.2	1.7	5.3	5.4	4.4	53
1,1-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane	1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
1,2-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichloropropane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.8
Bromoform	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.5	<0.5	1.6	2.0	3.2	2.5	5.6	8.3
Chloroethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5	1.4	1.0	<0.5	0.99	1.3	1.9	150
Chloromethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	0.5	<0.5	<0.5	<0.5	<0.5	0.76	<0.5	<0.5
Ethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Freon 113	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	1	<1	<1	<1	<1	<1	1.4	2.5
N-Butylbenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-Propylbenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	1	<1	<1	<1	<1	<1	<1	<1
Styrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	0.5	1.2	86	21	90	230	680	11000
Trichlorofluoromethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	0.5	43	3.9	3.5	5.8	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5	1.4	3.0	2.8	1.6	28	7.8	81
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	0.5	1.0	1.9	2.1	0.87	0.77	2.1	230
cis-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m- and p-Xylene Isomers	1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyl toluene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Project No: Allied Signal

(RWQCB LabForm10A; Ver12/94)

ANALYTICAL RESULT FOR ORGANICS

Method: 524.2Reporting Unit: ug/L

sec-Butylbenzene		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.6
trans-1,3-Dichloropropene		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SURROGATE	SPK CONC	ACP%	%RC	%RC	%RC	%RC	%RC	%RC	%RC
1,2-Dichlorobenzene-d4 Rep.	10	55-118	97	95	100	105	98	101	98
4-Bromofluorobenzene Rep.	10	77-127	102	99	104	104	100	103	102

002461

ANALYTICAL RESULT FOR ORGANICS

Method: 8015M

Reporting Unit: ug/L

		DATE ANALYZED	07/16/96			
		DATE EXTRACTED	07/15/96			
		LAB SAMPLE I.D.	B6071319*1*MB			
		CLIENT SAMPLE I.D.	-- METHOD BLANK --			
		EXTRACTION SOLVENT				
		EXTRACTION METHOD	8015M			
		DILUTION FACTOR	1			
		CRDL				
COMPOUND						
TPH (total)		2	<2			
SURROGATE	SPK CONC	ACP%	%RC			
Naphthalene Reported	2	55-127	104			

ANALYTICAL RESULT FOR ORGANICS

Method: 524.2

Reporting Unit: ug/L

COMPOUND	DATE ANALYZED				
	DATE EXTRACTED				
COMPOUND	LAB SAMPLE I.D.				
	CLIENT SAMPLE I.D.				
COMPOUND	EXTRACTION SOLVENT				
	EXTRACTION METHOD				
COMPOUND	DILUTION FACTOR				
	CRDL				
1,1,1,2-Tetrachloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane	1	<1	<1	<1	<1
1,2-Dibromoethane	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane	0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
2,2-Dichloropropane	0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5	<0.5	<0.5	<0.5	<0.5
Benzene	0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5
Freon 113	0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	1	<1	<1	<1	<1
N-Butylbenzene	0.5	<0.5	<0.5	<0.5	<0.5
N-Propylbenzene	0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	1	<1	<1	<1	<1
Styrene	0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	0.5	<0.5	<0.5	<0.5	1.5
Toluene	0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5
m- and p-Xylene Isomers	1	<1	<1	<1	<1
o-Xylene	0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyl toluene	0.5	<0.5	<0.5	<0.5	<0.5

002463

Project No: Allied Signal

(RWQCB LabForm10A; Ver12/94)

ANALYTICAL RESULT FOR ORGANICS

Method: 524.2

Reporting Unit: ug/L

sec-Butylbenzene		0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene		0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene		0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene		0.5	<0.5	<0.5	<0.5	<0.5
SURROGATE	SPK CONC	ACP%	%RC	%RC	%RC	%RC
1,2-Dichlorobenzene-d4 Rep.	10	55-118	102	98	101	106
4-Bromofluorobenzene Rep.	10	77-127	106	97	101	102

Project No: Allied Signal

(RWQCB LabForm10A; Ver12/94)

ANALYTICAL RESULT FOR ORGANICS

Method: 524.2Reporting Unit: ug/L

COMPOUND	DATE ANALYZED			
	07/17/96 07/23/96 07/23/96			
	DATE EXTRACTED			
	LAB SAMPLE I.D.			
	B6071320*1*MB 9607215*1 B6071766*1*MB			
	CLIENT SAMPLE I.D.			
	- METHOD BLANK - GW-7 - METHOD BLANK -			
	EXTRACTION SOLVENT			
	EXTRACTION METHOD			
	524.2 524.2 524.2			
	DILUTION FACTOR			
	1 20 1			
	CRDL			
1,1,1,2-Tetrachloroethane	0.5	<0.5	<10	<0.5
1,1,1-Trichloroethane	0.5	<0.5	63	<0.5
1,1,2,2-Tetrachloroethane	0.5	<0.5	<10	<0.5
1,1,2-Trichloroethane	0.5	<0.5	<10	<0.5
1,1-Dichloroethane	0.5	<0.5	60	<0.5
1,1-Dichloroethene	0.5	<0.5	42	<0.5
1,1-Dichloropropene	0.5	<0.5	<10	<0.5
1,2,3-Trichlorobenzene	0.5	<0.5	<10	<0.5
1,2,3-Trichloropropane	0.5	<0.5	<10	<0.5
1,2,4-Trichlorobenzene	0.5	<0.5	<10	<0.5
1,2,4-Trimethylbenzene	0.5	<0.5	<10	<0.5
1,2-Dibromo-3-chloropropane	1	<1	<20	<1
1,2-Dibromoethane	0.5	<0.5	<10	<0.5
1,2-Dichloroethane	0.5	<0.5	<10	<0.5
1,2-Dichlorobenzene	0.5	<0.5	<10	<0.5
1,2-Dichloropropane	0.5	<0.5	<10	<0.5
1,3,5-Trimethylbenzene	0.5	<0.5	<10	<0.5
1,3-Dichlorobenzene	0.5	<0.5	<10	<0.5
1,3-Dichloropropane	0.5	<0.5	<10	<0.5
1,4-Dichlorobenzene	0.5	<0.5	<10	<0.5
2,2-Dichloropropane	0.5	<0.5	<10	<0.5
2-Chlorotoluene	0.5	<0.5	<10	<0.5
4-Chlorotoluene	0.5	<0.5	<10	<0.5
Bromobenzene	0.5	<0.5	<10	<0.5
Bromochloromethane	0.5	<0.5	<10	<0.5
Bromodichloromethane	0.5	<0.5	<10	<0.5
Bromomethane	0.5	<0.5	<10	<0.5
Benzene	0.5	<0.5	<10	<0.5
Bromoform	0.5	<0.5	<10	<0.5
Chlorobenzene	0.5	<0.5	<10	<0.5
Carbon Tetrachloride	0.5	<0.5	<10	<0.5
Chloroethane	0.5	<0.5	<10	<0.5
Chloroform	0.5	<0.5	140	<0.5
Chloromethane	0.5	<0.5	<10	<0.5
Dibromochloromethane	0.5	<0.5	<10	<0.5
Dibromomethane	0.5	<0.5	<10	<0.5
Dichlorodifluoromethane	0.5	<0.5	<10	<0.5
Ethylbenzene	0.5	<0.5	<10	<0.5
Freon 113	0.5	<0.5	<10	<0.5
Hexachlorobutadiene	0.5	<0.5	<10	<0.5
Isopropylbenzene	0.5	<0.5	<10	<0.5
Methylene chloride	1	<1	<20	4.0
N-Butylbenzene	0.5	<0.5	<10	<0.5
N-Propylbenzene	0.5	<0.5	<10	<0.5
Naphthalene	1	<1	<20	<1
Styrene	0.5	<0.5	<10	<0.5
Trichloroethene	0.5	<0.5	17000	<0.5
Trichlorofluoromethane	0.5	<0.5	<10	<0.5
Toluene	0.5	<0.5	<10	<0.5
1,1,1,2-Tetrachloroethane	0.5	<0.5	36	<0.5
Vinyl chloride	0.5	<0.5	<10	<0.5
cis-1,2-Dichloroethene	0.5	<0.5	190	<0.5
cis-1,3-Dichloropropene	0.5	<0.5	<10	<0.5
m- and p-Xylene Isomers	1	<1	<20	<1
o-Xylene	0.5	<0.5	<10	<0.5
p-Isopropyl toluene	0.5	<0.5	<10	<0.5

Project No: Allied Signal

(RWQCB LabForm10A; Ver12/94)

ANALYTICAL RESULT FOR ORGANICS

Method: 524.2

Reporting Unit: ug/L

sec-Butylbenzene		0.5	<0.5	<10	<0.5	
trans-1,2-Dichloroethene		0.5	<0.5	<10	<0.5	
trans-1,3-Dichloropropene		0.5	<0.5	<10	<0.5	
tert-Butylbenzene		0.5	<0.5	<10	<0.5	
SURROGATE	SPK CONC	ACP%	%RC	%RC	%RC	
1,2-Dichlorobenzene-d4 Rep.	10	55-118	97	89	91	
4-Bromofluorobenzene Rep	10	77-127	98	94	98	

002466

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

II. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE PERFORMED: 7/16/96 ANALYTICAL METHOD: 8015M

BATCH #: 9640

LAB SAMPLE I.D.: 9607191*1

UNIT: (Circle one) ug/kg ug/L mg/kg mg/L

ANALYTE	SAMPLE RESULT	SPIKE CONC MS	PCT MS	SPK CONC DUP	MSD	PCT MSD	RPD	MS	MSD LIMIT	RPD LIMIT
TPH (total)	0	30	25.3	84	30	24.0	80	5	53-128	30

002467

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/16/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072391*1

LOT NUMBER: LA53760

UNIT:

DATE OF SOURCE: 12/28/95 ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
1,1,1,2-Tetrachloroethane	10.0	10.9	109	73-134
1,1,1-Trichloroethane	10.0	11.3	113	73-122
1,1,2,2-Tetrachloroethane	10.0	10.8	108	64-139
1,1,2-Trichloroethane	10.0	11.0	110	67-144
1,1-Dichloroethane	10.0	11.0	110	71-125
1,1-Dichloroethene	10.0	11.4	114	70-125
1,1-Dichloropropene	10.0	11.2	112	73-121
1,2,3-Trichlorobenzene	10.0	11.6	116	59-147
1,2,3-Trichloropropane	10.0	11.7	117	62-140
1,2,4-Trichlorobenzene	10.0	11.4	114	64-137
1,2,4-Trimethylbenzene	10.0	11.1	111	65-129
1,2-Dibromo-3-chloropropane	10.0	11.3	113	45-158
1,2-Dibromoethane	10.0	11.1	111	67-144
1,2-Dichlorobenzene	10.0	11.0	110	70-130
1,2-Dichloroethane	10.0	11.2	112	69-133
1,2-Dichloropropane	10.0	10.6	106	71-128
1,3,5-Trimethylbenzene	10.0	11.0	110	71-120
1,3-Dichlorobenzene	10.0	10.8	108	72-125
1,3-Dichloropropane	10.0	10.8	108	68-142
1,4-Dichlorobenzene	10.0	11.0	110	71-127
2,2-Dichloropropane	10.0	7.82	78	70-129
2-Chlorotoluene	10.0	10.6	106	69-123
4-Chlorotoluene	10.0	11.4	114	68-126
Benzene	10.0	10.6	106	74-121
Bromobenzene	10.0	10.6	106	72-123
Bromochloromethane	10.0	10.9	109	73-128
Bromodichloromethane	10.0	10.8	108	69-137
Bromoform	10.0	11.0	110	66-151
Bromomethane	10.0	10.6	106	62-133
Carbon Tetrachloride	10.0	11.0	110	71-126
Chlorobenzene	10.0	11.0	110	71-130
Chloroethane	10.0	10.6	106	68-123
Chloroform	10.0	12.4	124	72-124
Chloromethane	10.0	11.0	110	60-125
Dibromochloromethane	10.0	10.8	108	67-144
Dibromomethane	10.0	11.0	110	74-139
Dichlorodifluoromethane	10.0	11.3	113	46-146
Ethylbenzene	10.0	10.9	109	74-125
Freon 113	10.0	11.7	117	52-140
Hexachlorobutadiene	10.0	11.5	115	65-130
Isopropylbenzene	10.0	11.1	111	72-119
Methylene chloride	10.0	12.8	128	66-132
N-Butylbenzene	10.0	11.4	114	68-125
N-Propylbenzene	10.0	11.1	111	72-119
Naphthalene	10.0	11.8	118	49-162

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/16/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072391*1

LOT NUMBER: LA53760

DATE OF SOURCE: 12/28/95

UNIT:

ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
Styrene	10.0	11.2	112	70-133
Tetrachloroethene	10.0	11.1	111	78-123
Toluene	10.0	10.9	109	75-124
Trichloroethene	10.0	11.1	111	74-122
Trichlorofluoromethane	10.0	11.8	118	57-145
Vinyl chloride	10.0	11.1	111	64-132
cis-1,2-Dichloroethene	10.0	11.0	110	75-124
cis-1,3-Dichloropropene	10.0	10.7	107	74-135
m- and p-Xylene Isomers	20.0	21.9	110	65-134
o-Xylene	10.0	10.9	109	71-130
p-Isopropyl toluene	10.0	11.5	115	70-122
sec-Butylbenzene	10.0	11.4	114	70-122
tert-Butylbenzene	10.0	11.4	114	71-120
trans-1,2-Dichloroethene	10.0	11.2	112	72-123
trans-1,3-Dichloropropene	10.0	10.6	106	71-137

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/16/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072392*1

LOT NUMBER: LA53760

UNIT:

DATE OF SOURCE: 12/28/95 ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
1,1,1,2-Tetrachloroethane	10.0	10.6	106	73-134
1,1,1-Trichloroethane	10.0	10.2	102	73-122
1,1,2,2-Tetrachloroethane	10.0	10.6	106	64-139
1,1,2-Trichloroethane	10.0	10.9	109	67-144
1,1-Dichloroethane	10.0	10.6	106	71-125
1,1-Dichloroethene	10.0	11.6	116	70-125
1,1-Dichloropropene	10.0	10.9	109	73-121
1,2,3-Trichlorobenzene	10.0	11.3	113	59-147
1,2,3-Trichloropropane	10.0	11.8	118	62-140
1,2,4-Trichlorobenzene	10.0	11.1	111	64-137
1,2,4-Trimethylbenzene	10.0	10.5	105	65-129
1,2-Dibromo-3-chloropropane	10.0	10.7	107	45-158
1,2-Dibromoethane	10.0	10.8	108	67-144
1,2-Dichlorobenzene	10.0	10.7	107	70-130
1,2-Dichloroethane	10.0	10.7	107	69-133
1,2-Dichloropropane	10.0	10.4	104	71-128
1,3,5-Trimethylbenzene	10.0	10.4	104	71-120
1,3-Dichlorobenzene	10.0	10.6	106	72-125
1,3-Dichloropropane	10.0	10.6	106	68-142
1,4-Dichlorobenzene	10.0	10.7	107	71-127
2,2-Dichloropropane	10.0	0.62	6	70-129
2-Chlorotoluene	10.0	10.2	102	69-123
4-Chlorotoluene	10.0	10.9	109	68-126
Benzene	10.0	10.5	105	74-121
Bromobenzene	10.0	10.5	105	72-123
Bromochloromethane	10.0	10.8	108	73-128
Bromodichloromethane	10.0	10.7	107	69-137
Bromoform	10.0	10.7	107	66-151
Bromomethane	10.0	10.4	104	62-133
Carbon Tetrachloride	10.0	10.6	106	71-126
Chlorobenzene	10.0	10.5	105	71-130
Chloroethane	10.0	10.0	100	68-123
Chloroform	10.0	12.2	122	72-124
Chloromethane	10.0	10.7	107	60-125
Dibromochloromethane	10.0	10.4	104	67-144
Dibromomethane	10.0	10.9	109	74-139
Dichlorodifluoromethane	10.0	10.6	106	46-146
Ethylbenzene	10.0	10.5	105	74-125
Freon 113	10.0	11.0	110	52-140
Hexachlorobutadiene	10.0	11.1	111	65-130
Isopropylbenzene	10.0	10.6	106	72-119
Methylene chloride	10.0	12.1	121	66-132
N-Butylbenzene	10.0	10.7	107	68-125
N-Propylbenzene	10.0	10.5	105	72-119
Naphthalene	10.0	11.0	110	49-162

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/16/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072392*1

LOT NUMBER: LA53760

DATE OF SOURCE: 12/28/95

UNIT:
ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
Styrene	10.0	10.7	107	70-133
Tetrachloroethene	10.0	10.8	108	78-123
Toluene	10.0	10.5	105	75-124
Trichloroethene	10.0	10.8	108	74-122
Trichlorofluoromethane	10.0	11.1	111	57-145
Vinyl chloride	10.0	10.8	108	64-132
cis-1,2-Dichloroethene	10.0	13.6	136	75-124
cis-1,3-Dichloropropene	10.0	9.71	97	74-135
m- and p-Xylene Isomers	20.0	21.1	106	65-134
o-Xylene	10.0	10.5	105	71-130
p-Isopropyl toluene	10.0	10.9	109	70-122
sec-Butylbenzene	10.0	10.7	107	70-122
tert-Butylbenzene	10.0	10.8	108	71-120
trans-1,2-Dichloroethene	10.0	10.9	109	72-123
trans-1,3-Dichloropropene	10.0	7.47	75	71-137

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/16/96

ANALYTICAL METHOD: 8015M

SUPPLY SOURCE: CHEVRON

LAB LCS I.D.: C6072451*1

LOT NUMBER: None

9/25/95 (Gas)

UNIT:

DATE OF SOURCE: 9/27/95 (Diesel) kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP	PCT REC	LIMIT
TPH (total)	30.0	25.4	85		50-138	

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/16/96

ANALYTICAL METHOD:

8015M

SUPPLY SOURCE: CHEVRON

LAB LCS I.D.:

C6072452*1

LOT NUMBER: None

DATE OF SOURCE: 9/25/95 (Gas) ug/kg
9/27/95 (Diesel) ug/L mg/kg mg/L

UNIT:

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP	PCT REC	LIMIT
TPH (total)	30.0	25.3	84			50-138

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/23/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072962*1

LOT NUMBER: LA53760

DATE OF SOURCE: 12/28/95

UNIT:
ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
1,1,1,2-Tetrachloroethane	10.0	9.23	92	73-134
1,1,1-Trichloroethane	10.0	9.99	100	73-122
1,1,2,2-Tetrachloroethane	10.0	8.39	84	64-139
1,1,2-Trichloroethane	10.0	8.72	87	67-144
1,1-Dichloroethane	10.0	9.46	95	71-125
1,1-Dichloroethene	10.0	9.78	98	70-125
1,1-Dichloropropene	10.0	9.84	98	73-121
1,2,3-Trichlorobenzene	10.0	8.82	88	59-147
1,2,3-Trichloropropane	10.0	9.45	95	62-140
1,2,4-Trichlorobenzene	10.0	8.71	87	64-137
1,2,4-Trimethylbenzene	10.0	9.21	92	65-129
1,2-Dibromo-3-chloropropane	10.0	9.17	92	45-158
1,2-Dibromoethane	10.0	8.99	90	67-144
1,2-Dichlorobenzene	10.0	9.02	90	70-130
1,2-Dichloroethane	10.0	9.48	95	69-133
1,2-Dichloropropane	10.0	8.88	89	71-128
1,3,5-Trimethylbenzene	10.0	9.41	94	71-120
1,3-Dichlorobenzene	10.0	9.00	90	72-125
1,3-Dichloropropane	10.0	8.81	88	68-142
1,4-Dichlorobenzene	10.0	9.20	92	71-127
2,2-Dichloropropane	10.0	10.7	107	70-129
2-Chlorotoluene	10.0	9.29	93	69-123
4-Chlorotoluene	10.0	9.63	96	68-126
Benzene	10.0	9.12	91	74-121
Bromobenzene	10.0	9.01	90	72-123
Bromochloromethane	10.0	9.39	94	73-128
Bromodichloromethane	10.0	9.00	90	69-137
Bromoform	10.0	8.93	89	66-151
Bromomethane	10.0	9.59	96	62-133
Carbon Tetrachloride	10.0	10.3	103	71-126
Chlorobenzene	10.0	9.24	92	71-130
Chloroethane	10.0	9.45	95	68-123
Chloroform	10.0	10.8	108	72-124
Chloromethane	10.0	9.29	93	60-125
Dibromochloromethane	10.0	8.84	88	67-144
Dibromomethane	10.0	9.02	90	74-139
Dichlorodifluoromethane	10.0	10.0	100	46-146
Ethylbenzene	10.0	9.50	95	74-125
Freon 113	10.0	10.0	100	52-140
Hexachlorobutadiene	10.0	9.47	95	65-130
Isopropylbenzene	10.0	9.65	97	72-119
Methylene chloride	10.0	10.2	102	66-132
N-Butylbenzene	10.0	9.50	95	68-125
N-Propylbenzene	10.0	9.64	96	72-119
Naphthalene	10.0	9.01	90	49-162

Project No: Allied Signal

(RWQCB LabForm10A; VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/23/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072962*1

LOT NUMBER: LA53760

DATE OF SOURCE: 12/28/95 UNIT: ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
Styrene	10.0	9.20	92	70-133
Tetrachloroethene	10.0	10.0	100	78-123
Toluene	10.0	9.11	91	75-124
Trichloroethene	10.0	9.74	97	74-122
Trichlorofluoromethane	10.0	10.4	104	57-145
Vinyl chloride	10.0	9.93	99	64-132
cis-1,2-Dichloroethene	10.0	12.2	122	75-124
cis-1,3-Dichloropropene	10.0	8.67	87	74-135
m- and p-Xylene Isomers	20.0	18.7	94	65-134
o-Xylene	10.0	9.07	91	71-130
p-Isopropyl toluene	10.0	9.77	98	70-122
sec-Butylbenzene	10.0	9.71	97	70-122
tert-Butylbenzene	10.0	9.76	98	71-120
trans-1,2-Dichloroethene	10.0	9.92	99	72-123
trans-1,3-Dichloropropene	10.0	8.67	87	71-137

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/23/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072963*1

LOT NUMBER: LA53760

UNIT:

DATE OF SOURCE: 12/28/95 ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
1,1,1,2-Tetrachloroethane	10.0	10.1	101	73-134
1,1,1-Trichloroethane	10.0	11.5	115	73-122
1,1,2,2-Tetrachloroethane	10.0	9.15	92	64-139
1,1,2-Trichloroethane	10.0	8.82	88	67-144
1,1-Dichloroethane	10.0	10.3	103	71-125
1,1-Dichloroethene	10.0	11.4	114	70-125
1,1-Dichloropropene	10.0	10.4	104	73-121
1,2,3-Trichlorobenzene	10.0	9.01	90	59-147
1,2,3-Trichloropropane	10.0	9.97	100	62-140
1,2,4-Trichlorobenzene	10.0	9.69	97	64-137
1,2,4-Trimethylbenzene	10.0	10.7	107	65-129
1,2-Dibromo-3-chloropropane	10.0	11.0	110	45-158
1,2-Dibromoethane	10.0	9.50	95	67-144
1,2-Dichlorobenzene	10.0	9.79	98	70-130
1,2-Dichloroethane	10.0	9.27	93	69-133
1,2-Dichloropropane	10.0	8.98	90	71-128
1,3,5-Trimethylbenzene	10.0	11.1	111	71-120
1,3-Dichlorobenzene	10.0	10.5	105	72-125
1,3-Dichloropropane	10.0	9.38	94	68-142
1,4-Dichlorobenzene	10.0	10.1	101	71-127
2,2-Dichloropropane	10.0	12.1	121	70-129
2-Chlorotoluene	10.0	10.6	106	69-123
4-Chlorotoluene	10.0	10.4	104	68-126
Benzene	10.0	9.44	94	74-121
Bromobenzene	10.0	9.92	99	72-123
Bromochloromethane	10.0	9.27	93	73-128
Bromodichloromethane	10.0	9.85	99	69-137
Bromoform	10.0	9.45	95	66-151
Bromomethane	10.0	10.1	101	62-133
Carbon Tetrachloride	10.0	12.2	122	71-126
Chlorobenzene	10.0	10.4	104	71-130
Chloroethane	10.0	9.68	97	68-123
Chloroform	10.0	11.4	114	72-124
Chloromethane	10.0	8.83	88	60-125
Dibromochloromethane	10.0	9.21	92	67-144
Dibromomethane	10.0	8.60	86	74-139
Dichlorodifluoromethane	10.0	8.64	86	46-146
Ethylbenzene	10.0	10.7	107	74-125
Freon 113	10.0	11.2	112	52-140
Hexachlorobutadiene	10.0	11.1	111	65-130
Isopropylbenzene	10.0	11.2	112	72-119
Methylene chloride	10.0	11.3	113	66-132
N-Butylbenzene	10.0	11.0	110	68-125
N-Propylbenzene	10.0	11.1	111	72-119
Naphthalene	10.0	10.4	104	49-162

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/23/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072963*1

LOT NUMBER: LA53760

UNIT:

DATE OF SOURCE: 12/28/95

ug/kg

ug/L

mg/kg

mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
Styrene	10.0	10.5	105	70-133
Tetrachloroethene	10.0	11.4	114	78-123
Toluene	10.0	10.3	103	75-124
Trichloroethene	10.0	11.4	114	74-122
Trichlorofluoromethane	10.0	11.3	113	57-145
Vinyl chloride	10.0	9.93	99	64-132
cis-1,2-Dichloroethene	10.0	12.3	123	75-124
cis-1,3-Dichloropropene	10.0	9.43	94	74-135
m- and p-Xylene Isomers	20.0	21.6	108	65-134
o-Xylene	10.0	10.3	103	71-130
p-Isopropyl toluene	10.0	10.9	109	70-122
sec-Butylbenzene	10.0	11.4	114	70-122
tert-Butylbenzene	10.0	11.6	116	71-120
trans-1,2-Dichloroethene	10.0	11.2	112	72-123
trans-1,3-Dichloropropene	10.0	9.23	92	71-137

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/17/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072453*1

LOT NUMBER: LA53760

DATE OF SOURCE: 12/28/95

UNIT:
ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
1,1,1,2-Tetrachloroethane	10.0	9.02	90	73-134
1,1,1-Trichloroethane	10.0	9.31	93	73-122
1,1,2,2-Tetrachloroethane	10.0	9.03	90	64-139
1,1,2-Trichloroethane	10.0	8.84	88	67-144
1,1-Dichloroethane	10.0	9.30	93	71-125
1,1-Dichloroethene	10.0	9.68	97	70-125
1,1-Dichloropropene	10.0	9.10	91	73-121
1,2,3-Trichlorobenzene	10.0	10.2	102	59-147
1,2,3-Trichloropropane	10.0	10.7	107	62-140
1,2,4-Trichlorobenzene	10.0	9.98	100	64-137
1,2,4-Trimethylbenzene	10.0	9.37	94	65-129
1,2-Dibromo-3-chloropropane	10.0	9.50	95	45-158
1,2-Dibromoethane	10.0	8.93	89	67-144
1,2-Dichlorobenzene	10.0	9.82	98	70-130
1,2-Dichloroethane	10.0	9.41	94	69-133
1,2-Dichloropropane	10.0	8.20	82	71-128
1,3,5-Trimethylbenzene	10.0	9.31	93	71-120
1,3-Dichlorobenzene	10.0	9.65	97	72-125
1,3-Dichloropropane	10.0	8.89	89	68-142
1,4-Dichlorobenzene	10.0	9.75	98	71-127
2,2-Dichloropropane	10.0	7.81	78	70-129
2-Chlorotoluene	10.0	8.98	90	69-123
4-Chlorotoluene	10.0	9.31	93	68-126
Benzene	10.0	8.74	87	74-121
Bromobenzene	10.0	9.10	91	72-123
Bromochloromethane	10.0	9.08	91	73-128
Bromodichloromethane	10.0	8.93	89	69-137
Bromoform	10.0	9.32	93	66-151
Bromomethane	10.0	9.59	96	62-133
Carbon Tetrachloride	10.0	8.91	89	71-126
Chlorobenzene	10.0	9.07	91	71-130
Chloroethane	10.0	8.87	89	68-123
Chloroform	10.0	10.2	102	72-124
Chloromethane	10.0	9.23	92	60-125
Dibromochloromethane	10.0	8.79	88	67-144
Dibromomethane	10.0	8.95	90	74-139
Dichlorodifluoromethane	10.0	9.91	99	46-146
Ethylbenzene	10.0	8.87	89	74-125
Freon 113	10.0	10.0	100	52-140
Hexachlorobutadiene	10.0	8.95	90	65-130
Isopropylbenzene	10.0	9.15	92	72-119
Methylene chloride	10.0	9.82	98	66-132
N-Butylbenzene	10.0	9.36	94	68-125
N-Propylbenzene	10.0	9.16	92	72-119
Naphthalene	10.0	9.76	98	49-162

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/17/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072453*1

LOT NUMBER: LA53760

UNIT:

DATE OF SOURCE: 12/28/95 ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
Styrene	10.0	9.29	93	70-133
Tetrachloroethene	10.0	9.06	91	78-123
Toluene	10.0	8.80	88	75-124
Trichloroethene	10.0	9.30	93	74-122
Trichlorofluoromethane	10.0	10.2	102	57-145
Vinyl chloride	10.0	9.82	98	64-132
cis-1,2-Dichloroethene	10.0	11.5	115	75-124
cis-1,3-Dichloropropene	10.0	8.53	85	74-135
m- and p-Xylene Isomers	20.0	18.2	91	65-134
o-Xylene	10.0	9.02	90	71-130
p-Isopropyl toluene	10.0	9.57	96	70-122
sec-Butylbenzene	10.0	9.45	95	70-122
tert-Butylbenzene	10.0	9.45	95	71-120
trans-1,2-Dichloroethene	10.0	9.81	98	72-123
trans-1,3-Dichloropropene	10.0	8.48	85	71-137

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/17/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072490*1

LOT NUMBER: LA53760

UNIT:

DATE OF SOURCE: 12/28/95

ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
1,1,1,2-Tetrachloroethane	10.0	10.5	105	73-134
1,1,1-Trichloroethane	10.0	11.9	119	73-122
1,1,2,2-Tetrachloroethane	10.0	10.4	104	64-139
1,1,2-Trichloroethane	10.0	10.2	102	67-144
1,1-Dichloroethane	10.0	11.0	110	71-125
1,1-Dichloroethene	10.0	12.9	129	70-125
1,1-Dichloropropene	10.0	11.6	116	73-121
1,2,3-Trichlorobenzene	10.0	11.0	110	59-147
1,2,3-Trichloropropane	10.0	11.9	119	62-140
1,2,4-Trichlorobenzene	10.0	11.0	110	64-137
1,2,4-Trimethylbenzene	10.0	11.5	115	65-129
1,2-Dibromo-3-chloropropane	10.0	10.9	109	45-158
1,2-Dibromoethane	10.0	10.3	103	67-144
1,2-Dichlorobenzene	10.0	12.0	120	70-130
1,2-Dichloroethane	10.0	10.6	106	69-133
1,2-Dichloropropane	10.0	9.46	95	71-128
1,3,5-Trimethylbenzene	10.0	11.5	115	71-120
1,3-Dichlorobenzene	10.0	11.9	119	72-125
1,3-Dichloropropane	10.0	10.1	101	68-142
1,4-Dichlorobenzene	10.0	12.0	120	71-127
2,2-Dichloropropane	10.0	10.9	109	70-129
2-Chlorotoluene	10.0	11.5	115	69-123
4-Chlorotoluene	10.0	11.8	118	68-126
Benzene	10.0	11.8	118	74-121
Bromobenzene	10.0	10.8	108	72-123
Bromochloromethane	10.0	10.5	105	73-128
Bromodichloromethane	10.0	10.3	103	69-137
Bromoform	10.0	10.5	105	66-151
Bromomethane	10.0	11.9	119	62-133
Carbon Tetrachloride	10.0	11.7	117	71-126
Chlorobenzene	10.0	10.8	108	71-130
Chloroethane	10.0	11.2	112	68-123
Chloroform	10.0	12.2	122	72-124
Chloromethane	10.0	11.4	114	60-125
Dibromochloromethane	10.0	10.1	101	67-144
Dibromomethane	10.0	10.3	103	74-139
Dichlorodifluoromethane	10.0	14.6	146	46-146
Ethylbenzene	10.0	11.2	112	74-125
Freon 113	10.0	13.7	137	52-140
Hexachlorobutadiene	10.0	10.6	106	65-130
Isopropylbenzene	10.0	11.7	117	72-119
Methylene chloride	10.0	12.8	128	66-132
N-Butylbenzene	10.0	12.0	120	68-125
N-Propylbenzene	10.0	11.7	117	72-119
Naphthalene	10.0	11.1	111	49-162

Project No: Allied Signal

(RWQCB LabForm10A;VER12/94)

QA/QC REPORT

III. Laboratory Quality Control Check Sample (LCS)

DATE PERFORMED: 7/17/96

ANALYTICAL METHOD: 524.2

SUPPLY SOURCE: SUPELCO

LAB LCS I.D.: C6072490*1

LOT NUMBER: LA53760

UNIT:

DATE OF SOURCE: 12/28/95

ug/kg ug/L mg/kg mg/L

ANALYTE	SPIKE CONC	RESULT	PCT RECOVERY	ACP PCT REC LIMIT
Styrene	10.0	11.1	111	70-133
Tetrachloroethene	10.0	11.7	117	78-123
Toluene	10.0	10.8	108	75-124
Trichloroethene	10.0	11.8	118	74-122
Trichlorofluoromethane	10.0	14.1	141	57-145
Vinyl chloride	10.0	12.5	125	64-132
cis-1,2-Dichloroethene	10.0	13.7	137	75-124
cis-1,3-Dichloropropene	10.0	9.52	95	74-135
m- and p-Xylene Isomers	20.0	22.8	114	65-134
o-Xylene	10.0	11.2	112	71-130
p-Isopropyl toluene	10.0	12.2	122	70-122
sec-Butylbenzene	10.0	12.2	122	70-122
tert-Butylbenzene	10.0	12.1	121	71-120
trans-1,2-Dichloroethene	10.0	12.1	121	72-123
trans-1,3-Dichloropropene	10.0	9.65	97	71-137

APPENDIX B
CASE NARRATIVE

002482

BCA CASE NARRATIVE

SECOR

CASE NARRATIVE FOR GENERAL CHEMISTRY

This case narrative pertains to the following samples:

<u>BCA ID</u>	<u>SAMPLE ID</u>	<u>MATRIX</u>	<u>ANALYSES REQUESTED</u>
G96-07-191-1	GW-1	GW	Anions, TURB, TDS, ALK
G96-07-191-2	GW-2	GW	Anions, TURB, TDS, ALK
G96-07-191-3	GW-3	GW	Anions, TURB, TDS, ALK
G96-07-191-4	GW-9	GW	Anions, TURB, TDS, ALK
G96-07-215-1	GW-7	GW	Anions, TURB, TDS, ALK
G96-07-215-2	GW-8	GW	Anions, TURB, TDS, ALK
G96-07-215-3	GW-10	GW	Anions, TURB, TDS, ALK

The aqueous samples under work order G9607191 were received at the Glendale laboratory on July 9, 1996. The samples under work order G9607215 were received at the Glendale laboratory on July 10, 1996. All of the samples listed above were analyzed for anions (chloride, nitrate, nitrite, sulfate) according to standard operating procedure GE01289.G; for turbidity according to standard operating procedure GE01489.G; for total dissolved solids (TDS) according to standard operating procedure GE00188.G; for alkalinity according to standard operating procedure GE04295 and for ammonia according to standard operating procedure GE01188.G. There were no deviations from the standard operating procedures. Holding times were met for all samples.

QC Criteria

Batch 960710:

No problems were noted with any of the analyses and all QC criteria were met. The chloride, nitrate and sulfate matrix spikes of sample 9607191*1 were flagged "NC," Not Calculated because the amount of spike added was not at least 50% of what was found in the sample.

Batch 960711:

No problems were noted with any of the analyses and all QC criteria were met.

CASE NARRATIVE FOR METALS

<u>BCA ID</u>	<u>SAMPLE ID</u>	<u>MATRIX</u>	<u>BATCH</u>	<u>INSTR</u>
G96-07-191-1	GW-1	GW	961573	535-03
G96-07-191-2	GW-2	GW	961573	535-03
G96-07-191-3	GW-3	GW	961573	535-03
G96-07-191-4	GW-9	GW	961573	535-03
G96-07-215-1	GW-7	GW	961573	535-03
G96-07-215-2	GW-8	GW	961573	535-03
G96-07-215-3	GW-10	GW	961573	535-03

The aqueous samples G9607191 were received at the BC Analytical Glendale laboratory on July 9, 1996. The samples under work order G9607215 were received at the Glendale laboratory on July 10, 1996. They were prepped according to standard operating procedure PR00488 and analyzed for calcium, magnesium, potassium and sodium according to standard operating procedure ME00288 (Inductively Coupled Plasma Emission Spectroscopy). There were no deviations from the method and holding times were met.

QC Criteria

Batch 961573:

All QC criteria were met in the batch.

CASE NARRATIVE FOR SEMIVOLATILES (EPA 8015 Modified)

<u>BCA ID</u>	<u>SAMPLE ID</u>	<u>MATRIX</u>	<u>BATCH</u>	<u>INSTR</u>
G96-07-191-1	GW-1	GW	9640	536-01
G96-07-191-2	GW-2	GW	9640	536-01
G96-07-191-3	GW-3	GW	9640	536-01
G96-07-191-4	GW-9	GW	9640	536-01
G96-07-215-1	GW-7	GW	9640	536-01
G96-07-215-2	GW-8	GW	9640	536-01
G96-07-215-3	GW-10	GW	9640	536-01

The aqueous samples G9607191 were received at the BC Analytical Glendale laboratory on July 9, 1996. The samples under work order G9607215 were received at the Glendale laboratory on July 10, 1996. They were analyzed for fuels (EPA 8015 Modified) according to standard operating procedure GC00288. There were no deviations from the method. All holding times were met.

QC Criteria

All QC criteria were met for the LCS, matrix spike, matrix spike duplicate, method blank. All surrogates were within control limits. The daily midpoint standard criteria (+ or - 25% of initial standard concentration) was met.

CASE NARRATIVE FOR VOLATILES (EPA 524.2)

This case narrative pertains to the following samples:

<u>BCA ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Batch</u>	<u>Inst</u>
G96-07-189-1	Pump Blank	BW	96421	537-03
G96-07-191-1	GW-1	GW	96421	537-03
G96-07-191-2	GW-2	GW	96421	537-03
G96-07-191-3	GW-3	GW	96421	537-03
G96-07-191-4	GW-9	GW	96421	537-03
G96-07-215-1	GW-7	GW	96426	537-03
G96-07-215-2	GW-8	GW	96421	537-03
G96-07-215-3	GW-10	GW	96421	537-03
G96-07-215-4	Field Blank	BW	96422	537-03
G96-07-215-5	Bailer Blank	BW	96422	537-03
G96-07-215-6	Trip Blank	BW	96422	537-03

The aqueous samples G9607189 were received at the BC Analytical Glendale laboratory on July 9, 1996. The samples G9607191 and G9607215 were received on July 9 and July 10, 1996 respectively. All samples were analyzed for volatile organics according to standard operating procedure MS00792.G. All BFB criteria and holding times were met.

QC Criteria

Batch 96421/ 96422/ 96426

All QC criteria were met for method blank, LCS, LCSD and matrix spike samples. The following matrix spike results with asterisks fell outside laboratory established control limits:

Compound	(% recovery)		Control limits(%rec)
	MS	MSD	
-----	-----	-----	-----
None			

The following compounds had relative percent differences (RPDs) outside laboratory established control limits:

Compound	Relative % diff.	Control limit (upper)
-----	-----	-----
None		

The LCS and LCS duplicate samples were in control for all target compounds except for those listed below. This batch was considered in control based on the accuracy and precision of the LCS and LSC duplicate sample results.

Batch 96421- 2,2-Dichloropropane, Cis 1,2-Dichloroethene

Batch 96422- 1,1-Dichloroethene, Cis 1,2-Dichloroethene
tert-Butylbenzene

Batch 96426- Methylene chloride

APPENDIX C
GENERAL CHEMISTRY

002487

MDL Summary

er No.: 69506382
orted: 09.11.95

REPORT OF MDL RESULTS

Page 1

ANALYTER	CIDC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AVG	SD	MDL	MDL(AQ)	MDL(MAQ)
nide 533-23	1.00	1.02	1.09	1.08	1.08	1.05	1.08	1.07	1.067143	0.024300	0.076302	0.2 ng/L	2 ng/kg
oride 533-23	1.00	1.08	1.10	1.10	1.08	1.09	1.10	1.07	1.088571	0.012150	0.038151	0.05 ng/L	0.5 ng/kg
oride 533-23	1.00	1.05	1.08	1.08	1.08	1.06	1.08	1.05	1.068571	0.014638	0.045963	0.1 ng/L	1 ng/kg
rite 533-23	1.00	1.01	1.00	1.00	1.00	1.00	1.01	1.02	1.005714	0.007868	0.024706	0.2 ng/L	2 ng/kg
rate 533-23	2.00	1.91	1.91	1.93	1.93	1.89	1.90	1.94	1.915714	0.018127	0.056919	0.1 ng/L	1 ng/kg
hosphate 533-23	2.00	1.88	1.92	1.71	1.84	1.81	1.86	1.81	1.832857	0.066762	0.209633	0.4 ng/L	4 ng/kg
fate 533-23	1.00	1.28	1.29	1.30	1.30	1.28	1.31	1.28	1.291429	0.012150	0.038151	0.1 ng/L	1 ng/kg

002489

Order No.: 675JJ154
 Reported: 12.11.95

REPORT OF IND. RESULTS

Page 1

PARAMETER	CUNC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AVC	SD	MDL	KOL(MR)	KOL(MRD)
Turbidity 533-24	0.4	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.371129	0.048793	0.153216	0.2 NTU	NA NTU

002490

r No.: 69511152
 rted: 02.05.96

REPORT OF MDL RESULTS

Page 1

METER	CDMC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AUG	SD	MDL	RDL(AQ)	RDL(MAQ)
olved Solids	50	46	47	50	50	53	48	48	49.142857	2.968084	9.319784	10 mg/L	MA mg/kg

002491

for No.: C9607186
 dated: 03.19.96

REPORT OF HDL RESULTS

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MONITOR

	CONC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AVG	SD	MDL	RDL (AR)	RDL (HAQ)
Calinity 533-08	<10	<10	<10	<10	<10	<10	<10	<10	N/A	N/A	N/A	HA ng/L	HA ng/kg
Carbonate alk (as CaCO ₃)	47.2	44.0	46.0	46.0	44.0	44.0	44.0	44.0	44.837143	1.069043	3.356801	10 ng/L	HA ng/kg
Bicarbonate alk (as CaCO ₃)	<10	<10	<10	<10	<10	<10	<10	<10	N/A	N/A	N/A	10 ng/L	HA ng/kg
Hydroxide alk (as CaCO ₃)	47.2	44.0	46.0	46.0	44.0	44.0	44.0	44.0	44.837143	1.069043	3.356801	10 ng/L	HA ng/kg
Total Alkalinity (as CaCO ₃)													

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er No.: 69506384
 orted: 07.06.95

REPORT OF MDL RESULTS

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ANALYTER	CURC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AUG	SD	MDL	RDL(AQ)	RDL(MAQ)
onia 533-20	0.5	0.60	0.58	0.60	0.60	0.59	0.60	0.62	0.598571	0.012150	0.038151	0.1 ng/L	1 ng/kg

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Standard Operating Procedures

Anions.IC Method 300.0

SOP GE01289.G

BCA STANDARD OPERATING PROCEDURE

SOP# GE01289.G
Tier 2 Rev. 10/09/95
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ANIONS BY ION CHROMATOGRAPHY

A. Summary:

This method is applicable to the determination of the inorganics anions such as fluoride, chloride, nitrite-N, bromide, nitrate-N, ortho-phosphate-P and sulfate. In this method, a small volume of sample is injected and passed through a series of ion-exchangers (guard column and separator column). The anions of interest are separated on the basis of their relative affinities for a low capacity, strongly basic anion exchanger. The separated anions are directed onto a strongly acidic cation exchange (suppressor exchangers) where they are converted to their highly conductive acidic form and the carbonate and bicarbonate eluant is converted to weakly conductive carbonic acid. The separated anions in their acid form are measured on the basis of their retention time as compared to the standards. Qualification is based by measurement of peak areas or peak height.

B. Safety:

Normal accepted laboratory safety practices should be followed during reagent preparation and instrument operation.

C. Apparatus:

1. Analytical balance
2. Volumetric flasks
3. Volumetric pipets
4. Eppendorf pipets, 100 uL and 1000uL
5. Stir plate and stir bars
6. 5 and 10 ml disposable syringe
7. 0.2 u disposable filters
8. Ion chromatograph - Dionex Model 4000i (complete system)
Features:
 - a. Gradient pump
 - b. Advance chromatography module
 - c. Detectors (conductivity and UV/VIS detector)
 - d. Eluant degas module

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- e. Auto-regen system
- f. Autosampler
- 9. Anions guard columns
 - a. MPIC-NG1 (Dionex P/N 39567)
 - b. HPIC-AG4A (Dionex P/N 37042)
 - c. Phenomenex Guard-IC
- 10 Anion separator
 - a. HPIC-AS4A (Dionex P/N 37041)
 - b. Phenomenex Star-Ion 300
- 12 Anion micromembrane suppressor (Dionex P/N 038019)
- 13 5 ml sample vial (Dionex P/N 038141)
- 14 Filter cups for 5 ml sample vial (Dionex P/N 038009)
- 15 Complete computer system for data processing
- 16 Nelson Software (Turbo-Chrom)
- 17 Nelson interface box (900 series)
- 18 Gas regulators
- D. Reagents:
 - 1. Reagent water
 - 2. Typical eluent solution - Sodium bicarbonate/Sodium carbonate solution 2.8 mM NaHCO_3 / 2.2 mM Na_2CO_3 :
Dissolve 0.941 g of sodium bicarbonate (NaHCO_3) and 0.933 g of sodium carbonate (Na_2CO_3) in 4 liters of reagent water.
 - 3. Regenerant solution (25 mN H_2SO_4): Dilute 0.35 ml of concentrated H_2SO_4 to 500 mL with reagent water or 1:10 dilution of a commercially available 0.25N H_2SO_4 (VWR-3678-1).
 - 4. Stock Standards:

Stock standards solution - commercially prepared or prepared from analytical reagent grade materials dried at 105C for 30 minutes, except for sodium nitrite which is dessicant dried for 24 hours.
 - a. Chloride (1000 mg/L) - Dissolve 1.6485 grams of sodium chloride in reagent water and dilute to 1 liter.
 - b. Fluoride (1000 mg/L) - Dissolve 2.2100 grams of sodium fluoride in reagent water and dilute to 1 liter.

- c. Nitrate-N (1000 mg/L) - Dissolve 6.0679 grams sodium nitrate in reagent water and dilute to 1 liter.
- d. Nitrite-N (1000 mg/L) - Dissolve 4.9257 grams of sodium nitrite in reagent water and dilute to 1 liter.
- e. Phosphate (1000 mg/L) - Dissolve 4.3937 gram potassium phosphate (KH₂PO₄) in reagent water and dilute to 1 liter.
- f. Bromide (1000 mg/L) - Dissolve 1.3057 grams of Potassium Bromate (KBrO₃) in reagent water and dilute to 1 liter.

5. Calibration standards

- a. Prepare 7-ANION full strength standard from the stock standards with the following concentrations: Use EM Science stock-solution to prepare calibration standards.

Ion	Normal-Range (Typical)	Low Range (Air Force)
Fluoride	10 ppm	10 ppm
Chloride	25 ppm	10 ppm
Nitrite	5 ppm	10 ppm
Bromide	50 ppm	10 ppm
Nitrate	50 ppm	10 ppm
Phosphate	100 ppm	20 ppm
Sulfate	50 ppm	20 ppm

- b. Prepare working standards from full-strength standards by diluting full-strength as follows:

Standard	Normal-Range (Typical)	Low Range (Air Force)
S0	Blank	Blank
S1	1/50	1/50
S2	1/10	1/10
S3	1/2	1/2
S4	Full	Full

6. Laboratory control standard - prepare at half the typical concentration of the full strength calibration standard, but from a separate source.

7. Nitrogen gas (technical grade)

8. Helium gas (high - purity grade)

E. Procedure

1. Setting up instrument conditions:

a. Detector - conductivity

1. Range - For normal range and high range, set at 30 uS full scale; for low range set at 10 uS full scale.
2. Temperature compensation - 1.7 % /C

b. Gradient pump program

1. flowrate - 2 ml/min.
2. high pressure limit - 2100 psi
3. eluent - 100%
4. load time - 0.1 minutes
5. hold time - 1.1 minutes

c. Autosampler parameters

1. sample size vial - 5 ml
2. vial type - sample
3. injection number - one
4. sample loop switch - loop
5. sampling mode - single injection
6. bleed - off

d. Sample loop:

1. Volume - 50 or 100 uL

2. Setting up Turbo-Chrom files (Nelson software):

There are five different files used by turbo-chrom software. These are the instrument file, process file, sample file, sequence file and report file. Each parameter file contains values necessary for controlling a specific part of the process of data acquisition and processing. Refer to Nelson Software manual for detailed and complete explanations in setting up the files.

- a. Instrument file - contains parameter for controlling data acquisition which means controlling the interface. Under this file are the following parameters:

Header information

1. instrument type - Dionex 4000i

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2. column type - HPIC-AS4A
3. flowrate - 2 ml/min
4. temperature - 1.7 % / C
5. suppressor device - AMMS
6. Eluent - 2.8 mM NaHCO₃/2.2 mM Na₂CO₃
7. regenerant - 25 mN H₂SO₄

Interface command

1. run time - 10-12 minutes
2. solvent delay time - 2.5 minutes
3. sampling rate - 2 pt./sec.
4. A/D range - 1 volt
5. channel - A

Relayed timed events - Nelson Analytical interface contains switches that can be connected to external devices for any purpose. These relays can be programmed to open and close at specified times during the run.

Event time	Relay	Status
1. 0.0 min	1 hold/run reset	off
2. 0.0 min	2 autosampler	off
3. 0.0 min	4 auto-offset	off
4. 0.001 min	2 autosampler	on
5. 0.002 min	2 autosampler	off
6. 0.003 min	4 auto-offset	on
7. 2.4 min	1 hold/run reset	on
8. 2.4 min	4 auto-offset	on
9. 10 min	1 hold/run reset	off
10. 10 min	4 auto-offset	off

- b. Process file - This file contains the parameters necessary for processing data files. Under this are the following:

Replot parameters:

1. No. of pages - 1
2. Scaling factor - 1
3. Full scale plot - 1000 mV
4. Offset for plot - 0.0
5. Plot title - Sts. Anions by IC
6. Time axis label - Retention time (min)
7. Response axis label - Response (mV)

Peak detection. Intergration parameters-

1. bunching factor - 1 pts
2. noise threshold - 100 mV
3. area threshold - 1000 mV-sec

Processing timed events- this is used to guide the

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peak detector and the integrator in cases where the default placement of peak baseline is not sufficient, or the above parameters need to be changed dynamically. See turbo-chrom manual for more details.

- c. Sample file - This file contains information about the sample being analyzed. This is primarily a list of components present in the sample along with the calibration information to allow turbo-chrom to calculate amounts or concentrations of the components in unknown samples.

Sample

- 1. injection volume - 1.0
- 2. concentration units - mg/l
- 3. sample calibration - external standard .

Component - contains files for editing, adding, and deleting compounds. It shows the list components together with their retention time.

Calibration/standards - This file contain calibration information which provides the component list so that peaks in a datafile can be properly identified and to keep the calibration for each component so that quantitation of each sample is possible. This also shows the calibration curve for each component.

- 1. calibrate by sample
 - a. calibrate using peak area
 - b. number of calibration level - 4
 - c. type of calibration curve - linear calibration.
 - d. scaling factor - x (linear)
 - e. weight factor - 1.0
 - f. calibration level name - S0, S1, S2, S3, S4.
- d. Sequence file - This file ties together all the above parameter files into sequential structure that will guide the data acquisition. This sequence file specifies each injection to be performed in terms of which parameter files to use and the desired name for the raw data and the result file. The sample information spreadsheet consist of cycle number, study name, sample name, and sample number, the sample amount prepared, the volume injected as well as the conversion factor for the calculated amount. The conversion factor is split up into a multiplier, a divisor and an additive constant. The process information consists of the raw file name, process file name sample file name, calibration (N for none, A for average, R for replace calibration), and level name.

3. Update retention time for each component:

- a. Prepare calibration standard as discussed in reagents section.
- b. Follow the procedures in section 4 (sample preparation and starting the analysis)
- c. Analyze a standard at full strength.
- d. If there is a change in the retention time of the component, enter the new retention time of the component using the EDIT COMPONENT menu option under COMPONENTS command.

4. Sample preparation and starting the analysis

- a. Turn the auto-regen pump on.
- b. Select the program number which contains the desired parameters for the given analysis.
- c. Make sure that there is enough eluent in the container for the run.
- d. Start the gradient pump. Allow 10 to 15 minutes for the background conductance to stabilize at around 15-17 ws.
- e. Prepare the samples and standards to be run. Start with a blank followed by calibration standards and samples. Include a blank, duplicate spikes, and LCS at least every 20 samples.
- f. Put the sample in the sample vial and cover it with filter cup. Place the sample vial with sample onto the sample cassette, arrange sequentially.
- g. From the computer, retrieve the sequence file and enter the sample number, dilution and other necessary data. Save the sequence file.
- h. Go to acquire program and download the sequence file to the interface box.
- i. Start the analysis.
- j. Then connect the two wires at the back of the interface box to keep the autosampler running continuously and undo it when the last sample is being run.
- k. Check the eluent level in the container from time to

time. Never run the instrument with the eluent container empty to prevent air being trapped in the column.

1. After the run, review the data. Check the peak area of the component desired. It must be within the calibration curve. Make dilution if necessary and rerun the samples. Spike the sample whose peaks are not well resolved when compared to the standards.
- m. At the end of the run, shut the instrument down and turn the gases off. Save the sequence, instrument, process, and sample files with unique names so that they may be retrieved at any time in the future.

F. Quality Control

1. Stock standard are stable for six months if stored at 4C. Dilute standard should prepared weekly, except those that contain nitrite and phosphate, which should be prepared fresh daily.
2. The corellation coefficient of the multi-point calibration curve must be greater than 0.995. The calibration need not be updated every day provided that the ICV recoveries are between 90 and 110%.
3. A reagent blank is run at least every 20 samples to check for any contamination. If the any analyte in the reagent blank is greater than the RDL, follow the guidance given in the corrective action section of the QA Manual.
4. A CCV is run at least every 10 samples to check the calibration. If the recovery is outside 90-110%, take appropriate corrective action. This may include reanalyzing the CCV, recalibrating, preparing fresh standards, performing instrument maintenance, or any combination of these. All samples since the last good CCV must be rerun.
5. A set of duplicate spikes is run at least every 20 samples to check matrix effects and precision. No corrective action is required when spike recoveries fall outside historical limits. If the relative percent difference (RPD) is outside limits, take appropriate corrective action. If it is suspected that matrix effects caused poor reproducibility, two LCS's should be analyzed and the RPD compared to aqueous limits to show that precision is in control.
6. Spike any sample that has a poorly resolved peak when compared with the standards. This will aid in determining whether or not the peak is from a target analyte.

7. For samples that have peaks that cannot be resolved by sodium bicarbonate and sodium carbonate solution, use other eluent that is also known to elute the same component.
8. The system back pressure should not exceed 1500 psi as the instrument may be damaged.
9. Always make sure that eluent does not run out to prevent any damage to the column.

G. Calculations

1. Qualitative identification is accomplished by comparison of peak retention times with those of the standards. If there is uncertainty as to the identity of a peak, spike the sample and observe where the the known peaks fall in relation to unknown peaks.
2. The calibration curve is peak area vs. concentration. Obtain the sample concentration by plugging the peak area into the linear regression equation. Multiply by any dilution or extraction factors.
3. Any analyte that is overwhelmed by a nearby peak (i.e. chloride on nitrite) must be re-analyzed with a higher dilution, even if the detection limit is raised.

H. Interference:

1. Any analyte that has a retention time coinciding with that of any anion to be determined will interfere. For example, formate ion co-elutes or elutes very close to fluoride ion. Use 0.005M Sodium Tetraborate eluent to separate fluoride ion.
2. A high concentration of any one ion also interferes with the resolution of others. Sample dilution overcomes interference like this. If that does not work out, use eluent that is known to elute the desired ions without the interfering ion.
3. Spurious peaks may result from contaminants in reagent water, glassware, and sample processing system. Use nanopure water as reagent water. Clean and rinse glassware with reagent water before using. Rinse the system before running reagent water blanks.

I. Troubleshooting:

1. To resolve uncertainties of identification and quantitation, use method of known standard addition. 002504

2. Refer to Dionex Manual for tips on instrument troubleshooting.

J. References:

1. Standard Methods for the Examination of Water and Wastewater; APHA-AWWA-WPCF, Sixteenth Edition, 1985; Method 429.
2. Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 300.0.
3. Dionex instrument and Application Manual
4. Nelson Software Manual (2700 Series)

Reviewed and approved
L. Geddes 10/09/95
Issued _____

Turbidity Method 180.1

SOP GE01489.G

BCA STANDARD OPERATING PROCEDURE

SOP# GE01489.G
Tier 3 Rev. 08/30/95
Page 1 of 4

TURBIDITY

A. Summary

The Nephelometric method for turbidity is based upon a comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension. This method is applicable to drinking waters, surface waters, groundwaters, and saline waters. Turbidity in water is caused by suspended matter, such as clay, silt, finely divided organic and inorganic matter, soluble colored organic compounds, plankton and other microscopic organisms. Formazin polymer or AMPCO AEPA-1 standards are used as the turbidity reference suspensions for water because they are more reproducible than other types of standards.

B. Safety

Follow general safety practices when handling samples (wear gloves and safety glasses).

C. Apparatus

1. Turbidimeter, Orbeco-Hellige 965-10 or equivalent.
2. Sample cell, of clean, clear, colorless glass.
3. Graduated cylinders (needed for dilutions).

D. Reagents

1. Turbidity-free water (milli-Q water, filtered Nanopure, or equivalent).
2. Formazin stock solution. Commercially available at 4000 NTU concentration. Discard and replace after one year.
3. Standard formazin turbidity suspensions: at 200 NTU. Prepare by serial dilution of the stock solution at time of monthly calibration.
4. AMPCO AEPA-1 turbidity standards: at 8 NTU, 20 NTU, 40 NTU and 80 NTU.

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E. Procedure

1. Prepare the notebook. Put the date, the analyst's initials, the instrument used, the method and the batch number at the top of the page. Make columns for the bottle number, log number, sample identification, client ID, dilution, turbidity and COMMENTS.
2. Samples may be stored in a refrigerator at 4 degrees C for up to 48 hours before analysis.
3. Allow all samples and standards to come to room temperature.
4. Analyze the blank:

Pour the turbidity-free water into the sample cell, wipe the tube. Be sure that the instrument dial is in the 000-99.9 range. Using the zero dial, zero the instrument and record the NTU reading. This is done prior to each use of the instrument.
5. Prior to calibration, zero the instrument as described in item 4. Use the formazin standard at 200 NTU to calibrate the turbidimeter once a month. Then use AMPCO AEPA-1 turbidity standards to verify the calibration at the same time. Record the turbidities on the vials and in the front section of the notebook.
6. Analyze an LCS/CCV prior to analysis using the 8.0 NTU AMPCO AEPA-1 turbidity standard. The reading must be within 5% of the expected value. If the reading deviates by more than 5% from the values recorded in step (4), recalibrate the instrument using the 200 NTU formazin followed by the AMPCO AEPA-1 turbidity standards. The LCS/CCV must be analyzed after every ten samples and be $\pm 10\%$ of the expected value.
7. Analyze the samples:
 - a. For samples with turbidity less than the dynamic range of the instrument, thoroughly shake the sample. Wait until air bubbles disappear, then pour the sample into the sample cell. Wipe the cell and read the turbidity directly from the instrument scale.
 - c. For samples with turbidity greater than 40 NTU, shake the sample thoroughly. Pipet a known volume into a graduated cylinder and dilute to volume with turbidity-free water. Mix well and pour into the sample cell. Wipe the cell and read the turbidity. Record the turbidity and the dilution correction in

the notebook.

F. Quality Control

1. Run a blank and a set of duplicates every twenty samples, or every batch, whichever is more frequent. Spikes are not required.
2. Run an LCS/CCV prior to analysis with the AMPCO AEPA-1 turbidity standards. The readings must be within 5% of the expected value. In addition, the CCV must be analyzed after every ten samples with the expected value within 10% of the expected value.
3. The turbidity linear calibration range should be checked every 6 months with freshly prepared formazin standard.

G. Interferences

Dirty glassware, air bubbles, the effects of vibrations that disturb the surface visibility of the sample. The presence of floating debris and coarse sediments which settle out rapidly and water color due to dissolved substances that absorb light, these will give low turbidity readings. If the sample is read while it is still cold, moisture on the sample cell will cause interference/instability.

H. Calculations and Data Review

Calculations are required only when a sample has been diluted:

$$\text{Turb (in NTU)} = \frac{A \times B}{C}$$

where: A = NTU reading from instrument
B = final volume of solution (in mL)
C = volume of sample taken for dilution (in mL)

I. Troubleshooting

1. Discard sample cells if they become scratched or etched.
2. Never handle sample cells where light passes through them.

J. References

1. Standard Methods for the Examination of Water and

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Wastewater, 16th edition, Method 214A

2. Methods for Chemical Analysis of Water and Wastes (EPA 600/4-79-020), Method 180.1

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L. Geddes 08/30/95
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TDS Method 160.1

SOP GE00188

BCA STANDARD OPERATING PROCEDURE

SOP# GE00188.G
Tier 3 Rev. 05/09/95
Page 1 of 4

TOTAL DISSOLVED SOLIDS (TDS)

A. Summary

This method describes the determination of total dissolved solids dried at 180C. Samples are filtered and then dried in a tared beaker. The increase in weight corresponds to the dissolved solids in the sample. Values are reported in mg/L.

B. Safety

Follow general safety practices when handling samples. Use caution when inserting or removing samples from the oven.

C. Apparatus

1. Glass fiber filters - Whatman 934-AH
2. Filtration apparatus
3. Drying oven initially at room temp, then increased to 180 +/- 2 C over a 1 hour period.
4. 150 mL beakers
5. Erlenmeyer flasks.

D. Reagents

Sodium chloride (NaCl) - 10,000 mg/L: dissolve 10.00 g NaCl in 1000 mL deionized (DI) water.

E. Procedure

1. Label clean 150 mL beakers starting with 1, 2, 3 . . .
Don't forget to include beakers for QC.
2. Heat beakers at 180 + 2 C for 1 hour. Carefully remove from oven and store in desiccator. Desiccant chips must be blue. If chips are pink reactivate by drying in 105 degrees C oven overnight. Cool beakers to room temperature before weighing.
3. Prepare the notebook.
 - a. Enter the date and your initials in the header.

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- b. Make ten columns. Label them: Log No., Client, Description, Sample Vol (ml), Sample ID, Initial weight (g), Final weight 1 (g), Final weight 2 (g), TDS (mg/L), and Comments.
 - c. List the samples in the appropriate column. Be sure to include LCSs, blanks, duplicates and spikes per batch of 20 or fewer samples per Section F. List the beaker numbers in the Sample ID column.
 4. Weigh beakers on the analytical balance. Record value to 0.0001 gram in the Initial weight column.
 5. Filter samples:
 - a. Rinse filter apparatus with deionized water (DI).
 - b. Seat the glass-fiber filter, wrinkled side up, and wash with 50 mL DI water. Discard wash.
 - c. Record the log number, client code, and sample description from the bottle in the notebook.
 - e. Measure sample in a 100ml graduated cylinder. Use 100 mL if the sample is clean. Adjust sample size if filtering takes longer than ten minutes. Record volume used in the notebook.
 - f. Filter sample into a pre-weighed 150 mL beaker.
 - g. Rinse the graduated cylinder into the filter funnel.
 - h. Discard the filter.
 - i. Repeat items (a) through (h) for all samples and QC.
 6. Examine the oven interior to make sure it is clean. A dirty oven will cause contamination of the samples. Place the samples in the oven at room temperature. Then turn on the oven to 180 degrees C. This process usually takes about an hour and will prevent the beakers from boiling over. Read the oven temperature after the oven has stabilized at 180 degrees C. Record the temperature in the log book header. (Optional: Put a note on the oven "Careful, TDS samples inside." This will prevent some unsuspecting soul from opening the oven door suddenly and spilling your samples).
 7. Allow beakers to dry completely (overnight works well).
 8. Turn off the oven and allow to cool for approximately 20 minutes before attempting to handle beakers. Remove the beakers from the oven to a desiccator. Allow to cool

completely.

9. Weigh beakers and record in the final weight 1 column in the notebook. Return the beakers to the oven for a minimum of one hour, cool and reweigh. Record this weight in the final weight 2 column. The two weights in column 1 and column 2 should agree within 4% or 0.5 mg, whichever is less.
10. Place beakers in glassware area to be cleaned.
11. Limit sample to no more than 200 mg residue. If greater than 200 mg residue, repeat the test with a diluted sample. The sample conductance, if available, may be useful to determine the amount of sample to use. The following table may be used as a guide:

Conductance, umhos/cm	Sample Amount
5000-10,000	50
10,000-20,000	25
>20,000	20

NOTE: DO NOT USE LESS THAN 20 ml OF SAMPLE!!

F. Quality Control

1. The following quality control samples must be analyzed at a frequency of once every batch of twenty samples or less.
 - a. Method blanks - Filter 100 mL of DI water. The final weight of the blank beaker should be within +/- 0.0005g of the initial weight. If the blank value is greater than this contamination must be suspected. See the lab manager to determine what course of action to take.
 - b. LCSs - Filter 100 mL of DI water and 10 mL of 10,000 mg/L NaCl. This gives a theoretical value of 1000 mg/L. Two LCSs must be analyzed in every batch.
 - c. Matrix Spike, Matrix Spike Duplicate - the procedure described above under LCS is used to spike a sample, but with a separate source. Matrix spikes are analyzed only when client requested.
2. The temperature of the drying oven must be 180 +/- 2 C for a minimum of one hour after the oven reaches 180 degrees C. If outside these limits, leave the oven door closed and come back in an hour. If the temperature has not changed, adjust the control to bring the temperature back within range.

G. Calculations and Data Review

1. Sample Calculations:

$$\text{TDS (mg/L)} = \frac{A - B}{C} \times 1,000,000$$

where:

- A - Weight of beaker and sample in grams after drying
- B - Weight of beaker in grams
- C - Sample volume in ml

2. Calculate theoretical values and percent recoveries for spikes and LCSs and relative percent difference of the duplicate spikes as shown in the B C Analytical Quality Assurance Manual. Record this information in the Comments column. If outside current control limits, investigate the problem and take appropriate corrective action. Document your findings and action.

H. Interferences

1. Samples with high mineral content may require prolonged drying and rapid weighing to prevent absorption of water from the ambient air.
2. Samples high in bicarbonate must be dried carefully and possibly longer to assure conversion to carbonate.
3. Excessive residue in the beaker may allow crusting which traps water in the sample. If more than 200 mg of residue is in the beaker repeat the analysis with a smaller sample size to assure accuracy. NOTE: Excessive residue may contaminate other samples.

I. Troubleshooting

Blank weight after drying and cooling should be within +/- 0.0005 grams of initial weight. Check for contamination if your value is different. It may be necessary to adjust your calculations if the blank value is higher than this. Consult the lab manager for instructions.

J. References

1. Standard Methods for the Examination of Water and Wastewater; APHA-AWWA-WPCF, Sixteenth Edition, 1985; Method 209 B, pg 95.
2. Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 160.1.

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002515

Alkalinity Method 310.1

BCA STANDARD OPERATING PROCEDURE

SOP# GE04295
Tier 2 02/15/95
Page 1 of 4

ALKALINITY

A. Summary

This SOP describes the procedure for the determination of alkalinity, as defined as the sum of all titratable bases, in water. for virtually all water samples, alkalinity is due to the content of bicarbonate, carbonate and hydroxide ions. Therefore, alkalinity is expressed as the concentration of these ions in the sample.

B. Safety

1. Sulfuric acid is corrosive. Wear protective gloves.
2. General safety practice should be used when handling unknown samples.

C. Apparatus

1. pH meter--Orion Model 601.
2. pH probe--Orion probe.
3. Stirring plate and stirring bar.
4. Graduated Cylinder--50 mL.
5. Beaker--150 mL
6. Buret--class A, 10 mL graduated at 0.2 mL intervals.

D. Reagent

1. 0.1N Sulfuric Acid titrant: Add 2.8 mL conc. sulfuric acid per liter or purchase from commercial source. Standardize against 50 mL of 0.05N sodium carbonate (VWR VW3552-1) to pH of 4.5.
2. pH 7 and pH 4 buffer: Purchase from commercial source (VWR VW34170-127 & VW34170-130 or equivalent).
3. 596 mg/L Bicarbonate solution: Dissolve 1.00g of sodium bicarbonate to 1 L nanopure water.
4. 2360 mg/L Carbonate solution: Dissolve 2.50g of sodium carbonate to 1 L nanopure water.
5. De-ionized (DI) water.

E. Procedure

1. Notebook preparation--label 14 columns with the following header: BCA#, Client, Sample ID, MTX, Dil. Vol., pH, Vol 8.3, Vol 4.5, Tot. Alk., HCO₃, CO₃, OH, QC/Comment. Also

002517

label title as "Alk 310.1", record the normality of sulfuric acid titrant, the pH meter instrument number, batch number, date analyzed, and analyst initials.

2. Calibrate pH Meter.

- a. Attach the pH probe to the meter and set meter from "standby" to "pH". Allow the meter to warm-up for a few minutes.
- b. Rinse probe with de-ionized water. Place probe in a magnetically stirred pH 7 buffer solution. Adjust with the "Calib" knob until meter reads 7.00.
- c. Rinse probe with de-ionized water. Place probe in a magnetically stirred pH 4 buffer solution. Adjust with the "Slope" knob until meter reads 4.00.
- d. Rinse probe with de-ionized water. Place probe in a magnetically stirred pH 7 buffer solution. If meter does not read 7.00 ± 0.02 , repeat calibration.

3. Titration

- a. Measure 50 mL of sample into beaker. Stir magnetically and place under buret. Rinse pH probe with de-ionized water and place probe in the sample and allow to stabilize.
- b. Fill buret with 0.1N sulfuric acid titrant.
- c. Record the following data in log-book: BCA#, Client, Sample ID, matrix type, and the pH of the sample.
- d. If the pH of the sample is greater than 8.3, add 0.1N sulfuric acid titrant until a pH of 8.3 is reached. Record this volume in notebook under the "Vol 8.3" column.
- e. Titrate with 0.1N sulfuric acid until a pH of 4.5 is reached. Record total volume used under the "Vol 4.5" column. If excessive titrant is required, dilute the sample with de-ionized water and record the appropriate dilution factor and volume used in the notebook.

F. Quality Control

1. For each batch, analyze two Laboratory Control Standards (LCSs). Measure 50 mL of 596 mg/L bicarbonate solution and measure its alkalinity. If the result exceeds the control limits, prepare fresh LCS solution and re-analyze. If the result still exceeds control limit, then the titrant need to be re-standardized before sample analysis. It is a good idea to run the LCSs prior to any sample to ensure that the method is in control.
2. For each batch, run a method blank by titrating 50 mL of de-ionized water. If more than two drops of titant is required to reach a pH of 4.5, then the de-ionized water is contaminated and nanopure water must be used instead

of de-ionized water throughout the test.

3. For each batch, a matrix spike and matrix spike duplicate may also be analyzed. To one sample, add 10 mL of 2360 mg/L carbonate solution and analyze. The theoretical value for the spike is 472 mg/L alkalinity. This amount would be added to the amount found in the unspiked sample to determine the theoretical value. This procedure would be repeated for the matrix spike duplicate.

G. Calculation

1. Calculate the "phenolphthalein" endpoint volume (P) as the volume titrant required to reach a pH of 8.3. Determine the "total" volume (T) as the volume titrant required to reach a pH of 4.5.
2. If $P=0$, then all alkalinity is due to bicarbonate and the bicarbonate volume equals the total volume, T.
3. If $P < 1/2T$, then the alkalinity is due to carbonate and bicarbonate: carbonate volume equals $2P$ and bicarbonate volume equals $T-2P$.
4. If $P = 1/2T$, then all alkalinity is due to carbonate and the carbonate volume equals $2P$.
5. If $P > 1/2T$, then the alkalinity is due to hydroxide and carbonate: hydroxide volume equals $2P-T$ and carbonate volume equals $2(T-P)$.
6. If $P=T$, then all alkalinity is due to hydroxide and the hydroxide volume equals T.

Table Summary:

<u>Condition</u>	<u>OH</u>	<u>CO₃</u>	<u>HCO₃</u>
$P = 0$	0	0	T
$P < 1/2T$	0	$2P$	$T - 2P$
$P = 1/2T$	0	$2P$	0
$P > 1/2T$	$2P - T$	$2(T-P)$	0
$P = T$	T	0	0

7. Using the volume of hydroxide, carbonate and bicarbonate calculated above, the alkalinity, expressed as mg/L CaCO₃, is calculated with the following formula:

$$\text{Alkalinity, mg CaCO}_3/\text{L} = V \times N \times 50,000 / \text{mL of sample}$$

Where

V = volume of OH, CO₃ or HCO₃
N = normality of sulfuric acid titrant

H. Interference

1. Soaps, oily matter, suspended solids or precipitates may coat the electrode causing sluggish response. Allow additional time between titrant additions to allow the electrode to come to equilibrium.
2. pH is temperature dependent. Samples should be analyzed at or near room temperature.

I. Troubleshooting

1. Sluggish response from the pH meter is caused by coating of matter on the electrode. Clean the electrode by wiping with Kimwipes and de-ionized water if such problems occur.
2. Poor performance of electrode may be due to old filling solution. Replace the filling solution on a regular basis. Store the electrode in pH 7 buffer containing 1g KCl per 200 mL nanopure water.

J. References

1. Methods for Chemical Analysis of Water and Wastes USEPA Manual 600/4-79-020, March 1983, Method 310.1

Reviewed and approved
L. Geddes 02/15/95
Issued _____

NH3-N Method 350.1

SOP GE01188.G

BCA STANDARD OPERATING PROCEDURE

SOP# GE01188.G
Tier 2 Rev. 03/27/95
Page 1 of 7

AMMONIA NITROGEN USING ALPKEM ANALYZER

A. Summary

Ammonia is determined by reaction with alkaline phenol and hypochlorite at 50 degrees C to form indophenol blue. Sodium nitroprusside intensifies the blue color, which is read at 640 nm using automated segmented flow analysis. Ammonia in nonaqueous samples can be determined using steam distillation: steam is passed through the sample under alkaline conditions to release ammonia gas; the condensate is then collected in an acid medium and analyzed.

B. Safety

1. Phenol is poisonous. Exercise caution when handling liquified phenol. Wear gloves and eye protection. Transfer all phenol waste to hazardous waste drums.
2. Exercise caution and wear protective eyewear when handling concentrated sulfuric acid.

C. Apparatus

1. Alpkem AutoAnalyzer with:
 - Autosampler
 - Pump
 - Analytical cartridge with heater
 - Photometer with 1-cm flow cell and 640 nm filters
2. Alpkem interface and software
3. Microcomputer and printer
4. Volumetric glassware
5. Kjeldahl steam distillation apparatus

D. Reagents

1. Ammonia-free water: Use ultrapure deionized water for all reagents. If unavailable, distill ammonia-free water by adding a few milliliters of sulfuric acid to water before distillation.

2. Sampler wash: Add 10 drops of concentrated sulfuric acid to 200 mL of ammonia-free water to approximate the pH of a preserved sample. Color is pH dependent. Make fresh daily.
3. Diluent: Dilute 10 mL of 10N NaOH (purchased) to 200 mL of ammonia-free water in a volumetric flask.
4. Tartrate Complexor: Dissolve 33 grams sodium potassium tartrate ($\text{KNaC}_4\text{O}_6 \cdot 4\text{H}_2\text{O}$) and 24 grams sodium citrate ($\text{Na}_3\text{C}_6\text{H}_5\text{O}_7 \cdot 2\text{H}_2\text{O}$) in a one-liter volumetric flask. Dilute to the mark with ammonia-free water. Adjust the pH to 5 using sulfuric acid. Add 1 mL of chloroform as a preservative. Add 1.0 mL of Brij-35 before use.
5. Phenolate: In a 100-mL volumetric flask, mix 75 mL ammonia-free water, 9.4 mL of 88% phenol, and 9 mL of 10N NaOH. Dilute to the mark with ammonia-free water. The solution will be a clear yellow.. Store cold. Discard when solution turns dark brown.
6. Nitroprusside: Dissolve 0.1 gram $\text{Na}_2\text{Fe}(\text{CN})_5\text{NO} \cdot 2\text{H}_2\text{O}$ in ammonia-free water in a 200-mL volumetric flask. Dilute to the mark with ammonia-free water. Make fresh daily.
7. Hypochlorite: Dilute 40 mL 5.25% sodium hypochlorite or bleach solution to 200 mL in a volumetric flask. Make fresh daily.
8. Brij: Add 0.2 mL Brij-35 to 200 mL ammonia-free water.
9. LCS stock solution, purchased from VWR: Dissolve 1.909 g ammonium chloride in a 1-L volumetric flask. Dilute to the mark with nanopure water. This will produce a 500-ppm LCS stock.
10. Borate buffer: Dissolve 4.75 grams sodium borate ($\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$) in 500 mL ammonia-free water. Adjust pH to 9 with NaOH.
11. Ammonia calibration standards: To 10-mL portions of sampler wash add 0.050, 0.035, 0.020 and 0.005 mL of 1000-ppm ammonia stock solution and 0.050 mL 100-ppm working standard to make 5.0, 3.5, 2.0, and 0.5 mg/L standards, respectively. For low-level ammonia analysis, add 0.100, 0.070, 0.040, and 0.010 mL of 100-ppm working standard to 10-mL portions of sampler wash to make 1.0, 0.7, 0.4, and 0.1 mg/L standards.

E. Procedure

1. Install analytical cartridge manifold in the 304 power module. Refer to schematic diagram attached. Connect

- heating bath to plug #1. Connect hoses from solenoid valves to air inlets, outlet to flowcell tubing, and input from autosampler. Install flow tubing on 302 micro pump, but do not latch platens until ready to start pump. Place tube ends in deionized water wash. Turn on power to power module, light source and heating bath. Allow heating bath and photometer to warm up for 30 minutes.
2. For a soil sample, weigh out 5 grams and rinse into a Kjeldahl distillation flask with ammonia-free water. Add 4 mL borate buffer and 2 drops 1-N NaOH to adjust pH to approximately 9.5. Immediately clamp the flask to the distillation apparatus, making certain that the steam inlet is below the level of the liquid. Produce ammonia-free steam by adding sulfuric acid to the water in the steam generation vessel and pass the steam through the sample, collecting the condensate from the cold-finger condenser. Add a few milliliters of water and three drops of sulfuric acid to a Nessler tube and collect more than 40 mL of condensate. Dilute to 50 mL with ammonia-free water and continue as below.
 3. Latch platens on micro pump and turn on power. Pump reagents until a stable bubble pattern is obtained, feeding sampler wash through the sample line.
 4. Load samples and standards in the autosampler tray, beginning with the highest standard. Be sure to pipet, and not pour, samples from the bottles. Each autosampler vial will hold about 4-mL.
 5. Prepare two LCSs and CCVs. Dilute 100 μ L of 1000 ppm ammonia in 10 mL nanopure water.
 6. Install 640-nm filters on the 305 photometer.
 7. Turn channel knob to "reference" and adjust display to 5.00 with the reference gain knob. Turn channel knob to "sample" and adjust display to about 4.90 with the sample gain knob. Adjust the sample gain knob to obtain a zero reading when the channel knob is set to "absorbance".
 8. Turn the absorbance knob to "1" and the damp knob to "1".
 9. Select "Display Analog Signal" from the Alpkem software (F-5 function key) and monitor the baseline on channel one. Turn on power to the 301 autosampler, set "sample" display to 20 seconds and "wash" display to 75 seconds.
 - 10 Download method "AMMONIA" to Alpkem interface #1 by pushing F2 on the computer. Enter the method file name ("AMMONIA"), the acquire channel ("0"), the storage file name, the sample name ("NH3") and the minimum peak height

(500).

- 11 When a stable baseline is obtained, push "Reset" and "Start" on the autosampler.
- 12 Monitor the peaks and make appropriate dilutions with sampler wash for any peaks that are off-scale.
- 13 Pump deionized water through tubes to rinse, then pump dry with air.
- 14 Unlatch platens and turn off power to autosampler, pump and power module.
- 15 Disconnect air hoses, flowcell tubing, and autosampler from manifold. Disconnect heating bath and remove analytical cartridge.

F. Quality Control

1. Run continuing calibration standards at the beginning and after every 10 samples throughout the run. Run a reagent blank with each set of standards. If the average response of the standards changes more than 10% from one set of standards to the next, stop the run and recalibrate. Average the absorbances obtained for each standard and use linear regression to produce a calibration curve. The correlation coefficient must be at least 0.995.
2. Run a matrix spike and matrix spike duplicate when requested by the client in every batch of 20 samples. Two LCSs must be run in every batch of 20 or fewer samples and must be within control limits. If soils are distilled, run a method blank and subtract the absorbance from the absorbances of the samples.

G. Calculations

1. The Alpkem software will make the calculations for you if the dilution factor is entered into the software.
2. Calculate spike and LCS recoveries by dividing the result obtained by the theoretical amount and multiplying by 100.
3. Report all results to two significant figures, or to the nearest 0.1 mg/L.

H. Interferences

1. The sodium potassium tartrate complexor is used to prevent precipitation of calcium and magnesium ions from solution.

2. Sample turbidity and false color absorbance in the 640-nm range can also interfere. Remove turbidity by filtration.

I. Troubleshooting

1. A positive reagent blank may be the result of ammonia contamination in the sample wash. Make fresh sample wash from ammonia-free water and make new standards and dilutions.
2. A noisy baseline can be the result of an unstable bubble pattern. Examine flow at each inlet. Look for injection of "extra" bubbles. These can be the result of turbulent flow in the tubes. Check tubes for wear and replace them if necessary.
3. A noisy baseline can also be the result of debris in the flow cell. Remove the cell and flush with deionized water. Dislodge particulates with wire stylet.
4. Erratic response or dips on the printout may be the result of a sample pH too high or too low. Adjust the pH of the sample to approximately 2 and re-run.
5. Peak broadening is the result of viscous flow in the sample tubing. Peak broadening affects the height of the peak. Check the amount of Brij added to reagents. Change sample tube and tubing from autosampler. Dilute viscous samples.
6. For other instrument problems, refer to the Alpkem Service Manual troubleshooting section, chapter 6.

J. References

1. Methods for Chemical Analysis of Water and Wastes USEPA Manual 600/4-79-020, March 1983, Section 350.1
2. RFA Methodology, Alpkem Corporation, 1984, Ammonia
3. Service Manual, Alpkem Corporation, 1987, Chapter 6
4. Brown and Caldwell Quality Assurance Manual, 7th edition, 1988

Reviewed and approved
L. Geddes 03/27/95
Issued _____

ALPKEM AMMONIA MANIFOLD

Reagent	Flow Rate (uL/min)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																</
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*for low-level ammonia, flow-rate = 226

"o" symbol = coil of 5 turns

"oo" symbol = coil of 10 turns

Standards Documentation

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 14:56:00 16 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: IC STDS
Date Prepared: 03/06/96
Prepared by: Arlene Quiogue
Type: Calibration Standard

Reference #:GE9603003
Expiration Date: 09/06/96
Total Volume: 100 ML

Solvent	Manufacturer	Lot#	%
<u>NANOPURE WATER</u>			
Source	Amount	Component	Final Concentration
GE9602009	1.0000 ML	Fluoride	10.0000 PPM
		Fluoride	10.0000 PPM
GE9603001	4.0000 ML	Chloride	40.0000 MG/L
		Chloride	40.0000 MG/L
GE9602007	1.0000 ML	Nitrite (as N)	10.0000 MG/L
GE9602008	2.0000 ML	Bromide	20.0000 MG/L
		Bromide	20.0000 MG/L
GE9410013	5.0000 ML	Nitrate (as N03)	50.0000 MG/L
		Nitrate	50.0000 MG/L
GE9501025	10.0000 ML	Total Phosphorus (as P04)	100.0000 MG/L
		Ortho Phosphate (as P04)	100.0000 MG/L
GE9506003	10.0000 ML	Sulfate	100.0000 MG/L

Disposal Method: DRAIN
Verification Date: 03/06/96
Hazard Class:

Disposal Date: 09/06/96

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 08:39:58 17 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: IC LCS
Date Prepared: 04/05/96
Prepared by: Arlene Quiogue
Type: Lab Control Standard

Reference #:GE9604001
Expiration Date: 10/05/96
Total Volume: 200 ML

Solvent	Manufacturer	Lot#	%
NANOPURE WATER			

Source	Amount	Component	Final Concentration
GE9507016	1.0000 ML	Fluoride	5.0000 MG/L
		Fluoride	5.0000 MG/L
GE9510003	4.0000 ML	Chloride	20.0000 MG/L
		Chloride	20.0000 MG/L
GE9505014	1.0000 ML	Nitrite (as N02)	5.0000 PPM
		Nitrite	5.0000 PPM
GE9603017	2.0000 ML	Bromide	10.0000 MG/L
		Bromide	10.0000 MG/L
GE9510035	5.0000 ML	Nitrate (as N03)	25.0000 PPM
		Nitrate	25.0000 PPM
GE9510050	10.0000 ML	Total Phosphorus (as P04)	50.0000 MG/L
		o-Phosphate	50.0000 MG/L
		Ortho Phosphate (as P04)	50.0000 MG/L
GE9602006	10.0000 ML	Sulfate	50.0000 MG/L
		Sulfate	50.0000 MG/L

Disposal Method: DRAIN
Verification Date: 04/05/96
Hazard Class:

Disposal Date: 10/05/96

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 14:56:03 16 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: BHP IC SPIKE
Date Prepared: 03/12/96
Prepared by: Dat Nguyen
Type: Stock Solution

Reference #:GE9603010
Expiration Date: 03/12/97
Total Volume: 100 ML

Solvent	Manufacturer	Lot#	%
NANOPURE WATER			100

Source	Amount	Component	Final Concentration
--------	--------	-----------	---------------------

Disposal Method:
Verification Date: 03/13/96
Hazard Class:

Disposal Date:

600 PPM CL	--	0.10 G NACL
200 PPM F	--	0.044 G NAF
1000 PPM NO3	--	0.137 G NAN03
100 PPM NO2	--	0.049 G NAN02
1000 PPM PO4	--	0.44 G KH2PO4
400 PPM BR	--	0.0516 G NABR
2000 PPM SO4	--	0.362 G K2SO4

PER 100 ML NANOPURE WATER.

002531

Table of Contents

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DATE	CALIBRATION STD	STD. CALIB	TURBIDITY READING NTU	ANALYST INITIALS
5-10-96	HACH 4000 NTU Formazin lot	200	196	RKS
	AMCO AEP-1 8.0 NTU GE 9412030	8.0	8.3	
	20 NTU	20.0	20.5	
	40 NTU	40.0	40.9	
	80 NTU GE 9511024	80.0	81.4	
	NAME H ₂ O	0	0	
6-11-96	HACH 4000 NTU Formazin lot	200	195	RKS
	AMCO AEP-1 8.0 NTU GE 9412030	8.0	8.2 ^{8.3}	
	20 NTU	20.0	20.6	
	40 NTU	40.0	40.9	
	80 NTU GE 9511024	80.0	81.4	
	NAME H ₂ O	0	0	
6-23-96	HACH 4000 NTU FORMAZIN lot GE 9412030	200	197	RKS
	AMCO AEP-1 8.0 NTU GE 9412030	8.0	8.1	
	20 NTU	20.0	20.0	
	40 NTU	40.0	39.6	
	80 NTU GE 9511024	80.0	79.7	
	NAME H ₂ O	0	0	
7-30-96	HACH 4000 NTU FORMAZIN lot GE 9412030	200	197	RKS
	AMCO AEP-1 8.0 NTU GE 9412030	8.0	8.1	
	20 NTU	20.0	20.0	
	40 NTU	40.0	39.5	
	80 NTU GE 9511024	80.0	79.5	

NAME

SCIENTIFIC NOTEBOOK CO.

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: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 16:19:37 15 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: TURB STD
Manufacturer: HACH
Expiration Date: 12/20/95
Received by: Dat Nguyen
Type: Stock Solution

Reference #:GE9412030
Lot #:21EL
Date Opened: 12/20/94
Date received: 12/20/94

Traceable Source:
Total Volume: 100 ML

Solvent: WATER
Certificate (Y/N):

Component

Concentration Units

Turbidity

4,000.0000 NTU

Disposal Method:
Hazard Class:

Disposal Date:

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 16:20:03 15 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 80 NTU TURB. STD.
Manufacturer: AMCO
Expiration Date: 11/30/96
Received by: Arlene Quiogue
Type: Lab Control Standard

Reference #:GE9511024
Lot #:05K
Date Opened: 11/30/94
Date received: 12/04/95

Traceable Source:
Total Volume: 250 ML

Solvent:
Certificate (Y/N):

Component

Concentration Units

Turbidity

80.0000 NTU

Disposal Method:
Hazard Class:

Disposal Date: 11/30/96

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 13:59:27 16 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: TDS SPIKE
Date Prepared: 03/25/96
Prepared by: Reetinder Sekhon
Type:

Reference #:GE9603033
Expiration Date: 03/25/97
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
NANO	BCA		

Source	Amount	Component	Final Concentration
GE9301030	10.0000 G	Dissolved Solids	100.0000 MG/L

Disposal Method: DRAIN
Verification Date: 03/25/96
Hazard Class:

Disposal Date: 03/25/97

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 13:31:39 16 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ALK SPIKE
Date Prepared: 04/11/96
Prepared by: KWAME ANSAH
Type:

Reference #:GE9604008
Expiration Date: 12/11/96
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
NANO WATER	BCA		

Source	Amount	Component	Final Concentration
GE9512017	2.5000 G	Carbonate	0.2500 %

Disposal Method: SINK
Verification Date: 04/11/96
Hazard Class:

Disposal Date: 12/11/96

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 13:31:41 16 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ALK. LCS
Date Prepared: 03/27/96
Prepared by: KWAME ANSAH
Type:

Reference #:GE9603039
Expiration Date: 03/27/97
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
NANO PURE			

Source	Amount	Component	Final Concentration
GE9301040	1.0000 MG	Hydroxide Alk (as CaCO3)	0.0001 50
		Bicarbonate Alk (as CaCO3)	0.0001 50
		Carbonate Alk (as CaCO3)	0.0001 50
		Total Alkalinity (as CaCO3)	0.0001 50

Disposal Method:
Verification Date: 03/27/96
Hazard Class:

Disposal Date:

002537

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 13:59:35 16 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ALKALINITY LCS
Date Prepared: 06/13/96
Prepared by: KWAME ANSAH
Type:

Reference #:GE9606014
Expiration Date: 12/13/96
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
<u>NANO</u>	<u>BCA</u>	<u> </u>	<u> </u>

Source	Amount	Component	Final Concentration
<u>GE9301040</u>	<u>1.0000 G</u>	<u>Hydroxide Alk (as CaCO3)</u>	<u>0.0500 50</u>
		<u>Bicarbonate Alk (as CaCO3)</u>	<u>0.0500 50</u>
		<u>Carbonate Alk (as CaCO3)</u>	<u>0.0500 50</u>
		<u>Total Alkalinity (as CaCO3)</u>	<u>0.0500 50</u>

Disposal Method: SM BAY
Verification Date: 06/13/96
Hazard Class:

Disposal Date: 12/13/96

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 13:59:27 16 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: NH3-N STANDARD
Manufacturer: EM
Expiration Date: 08/01/96
Received by: SAMINA HUSSAIN
Type: Lab Control Standard

Reference #:GE9411001
Lot #:34014
Date Opened: 11/02/94
Date received: 11/02/94

Traceable Source:
Total Volume: 500 ML

Solvent:
Certificate (Y/N):

Component

Concentration Units

Ammonia
Ammonia, distillation
Kjeldahl Nitrogen

Disposal Method:
Hazard Class:

Disposal Date:

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 13:59:27 16 JAN 1997 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: TKN/NH3 SPIKE
Manufacturer: RICCA
Expiration Date: 02/01/97
Received by: GENE SMITH
Type: Lab Control Standard

Reference #:GE9601035
Lot #:9403201
Date Opened: 01/25/96
Date received: 01/20/96

Traceable Source:
Total Volume: 500 ML

Solvent:
Certificate (Y/N):

Component

Concentration Units

Kjeldahl Nitrogen
Ammonia

Disposal Method:
Hazard Class:

Disposal Date:

Raw Data for General Chemistry

ION CHROMATOGRAPHY SUMMARY REPORT

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=====
Version Ayeka          533-23          Batch 0710/0710.1/0710.2
Standard: GE9603003    LCS-CCV: GE9604001      AF      BHP.
Spike: 200uL GE9602020 / 5 mL    BHP Spike: 100uL GE9603010 / 5 mL
Working Elluent: GE9604011
=====
  
```

* 96-09-164-1 - 6

File Name	Sample Name	Fluoride		Chloride		Nitrite		Bromide		Nitrate	
		Reported Amount	Dilution Factor	Reported Amount	Dilution Factor	Reported Amount	Dilution Factor	Reported Amount	Dilution Factor	Reported Amount	Dilution Factor
0710001.	S0	-----	1.0	-----	1.0	-----	1.0	-----	1.0	-----	1.0
0710002.	S1	-----	1.0	1.000	1.0	0.231	1.0	0.438	1.0	1.350	1.0
0710003.	S2	0.851	1.0	3.720	1.0	0.907	1.0	1.924	1.0	4.623	1.0
0710004.	S3	4.772	1.0	18.711	1.0	4.628	1.0	9.685	1.0	23.006	1.0
0710005.	S4	10.078	1.0	40.438	1.0	10.052	1.0	20.091	1.0	50.658	1.0
0710006.	ICV-LCS	5.030	1.0	18.814	1.0	4.811	1.0	9.649	1.0	24.122	1.0
0710007.	ICB	-----	1.0	-----	1.0	-----	1.0	-----	1.0	-----	1.0
0710008.	GE9602016	6.249	1.0	124.770	1.0	37.701	1.0	-----	1.0	38.428	1.0
0710009.	GE9602016	5.142	5.0	130.854	5.0	-----	5.0	-----	5.0	35.442	5.0
0710010.	9607179*1	-----	5.0	29.905	5.0	-----	5.0	-----	5.0	45.149	5.0
0710011.	9607164*1	1.089	1.0	185.091	1.0	40.641	1.0	-----	1.0	26.239	1.0
0710012.	9607164*1 *	-----	10.0	184.508	10.0	-----	10.0	-----	10.0	28.277	10.0
0710013.	9607164*1	-----	25.0	170.665	25.0	-----	25.0	-----	25.0	33.796	25.0
0710014.	9607164*2	0.829	1.0	193.062	1.0	41.781	1.0	-----	1.0	15.425	1.0
0710015.	9607164*2	-----	10.0	190.030	10.0	-----	10.0	-----	10.0	18.243	10.0
0710016.	9607164*2	-----	25.0	179.768	25.0	-----	25.0	-----	25.0	27.158	25.0
0710017.	9607164*3	1.112	1.0	186.733	1.0	37.987	1.0	-----	1.0	26.177	1.0
0710018.	CCV	4.968	1.0	18.805	1.0	4.696	1.0	9.580	1.0	24.073	1.0
0710019.	CCB	-----	1.0	-----	1.0	-----	1.0	-----	1.0	-----	1.0
0710020.	9607164*3	-----	10.0	182.587	10.0	-----	10.0	-----	10.0	27.518	10.0
0710021.	9607164*3	-----	25.0	175.670	25.0	-----	25.0	-----	25.0	35.910	25.0
0710022.	9607164*4	2.300	1.0	104.282	1.0	38.169	1.0	-----	1.0	2.886	1.0
0710023.	9607164*4	2.174	10.0	111.226	10.0	-----	10.0	-----	10.0	7.562	10.0
0710024.	9607164*4	-----	25.0	108.027	25.0	-----	25.0	-----	25.0	-----	25.0
0710025.	9607164*5	0.715	1.0	137.235	1.0	42.672	1.0	0.102	1.0	1.655	1.0
0710026.	9607164*5	-----	10.0	141.994	10.0	-----	10.0	-----	10.0	6.351	10.0
0710027.	9607164*5	-----	25.0	134.968	25.0	-----	25.0	-----	25.0	14.903	25.0
0710028.	9607164*6*R1	1.996	1.0	42.942	1.0	-----	1.0	-----	1.0	3.170	1.0
0710029.	9607164*6*S1	6.977	1.0	22.747	1.0	2.986	1.0	7.878	1.0	22.721	1.0
0710030.	CCV	4.922	1.0	18.660	1.0	4.602	1.0	9.452	1.0	23.798	1.0
0710031.	CCB	-----	1.0	-----	1.0	-----	1.0	-----	1.0	-----	1.0
0710032.	9607164*6*S2	6.988	1.0	22.702	1.0	2.997	1.0	7.928	1.0	22.825	1.0
0710033.	9607164*6*R1	-----	10.0	39.442	10.0	-----	10.0	-----	10.0	7.997	10.0
0710034.	9607164*6*S1	47.840	10.0	167.092	10.0	21.995	10.0	81.817	10.0	200.410	10.0
0710035.	9607164*6*S2	47.896	10.0	167.197	10.0	22.180	10.0	81.685	10.0	200.014	10.0
0710036.	9607164*6*R1	-----	25.0	43.131	25.0	-----	25.0	-----	25.0	15.962	25.0
0710037.	9607164*6*S1	116.749	25.0	354.177	25.0	54.508	25.0	204.722	25.0	495.706	25.0
0710038.	9607164*6*S2	117.677	25.0	356.794	25.0	55.383	25.0	206.870	25.0	499.292	25.0
0710039.	9607190*1	0.335	1.0	16.866	1.0	-----	1.0	0.167	1.0	33.526	1.0
0710040.	9607190*1	-----	10.0	32.356	10.0	-----	10.0	1.629	10.0	34.549	10.0
0710041.	9607191*1*R1	0.332	1.0	22.767	1.0	-----	1.0	-----	1.0	39.288	1.0
0710042.	CCV	4.883	1.0	18.557	1.0	4.628	1.0	9.440	1.0	23.754	1.0
0710043.	CCB	-----	1.0	-----	1.0	-----	1.0	-----	1.0	-----	1.0
0710044.	9607191*1*S1	4.132	1.0	29.992	1.0	-----	1.0	15.192	1.0	55.934	1.0
0710045.	9607191*1*S2	4.189	1.0	30.093	1.0	-----	1.0	15.279	1.0	56.184	1.0
0710046.	9607191*1*R1	-----	10.0	23.360	10.0	-----	10.0	-----	10.0	39.300	10.0
0710047.	9607191*1*S1	38.275	10.0	95.148	10.0	-----	10.0	162.240	10.0	191.156	10.0
0710048.	9607191*1*S2	38.239	10.0	95.296	10.0	-----	10.0	163.029	10.0	190.994	10.0
0710049.	9607191*2	0.609	1.0	40.935	1.0	-----	1.0	0.199	1.0	74.779	1.0
0710050.	9607191*2	-----	10.0	37.941	10.0	-----	10.0	-----	10.0	66.985	10.0
0710051.	9607191*3	-----	1.0	12.748	1.0	-----	1.0	-----	1.0	34.930	1.0
0710052.	9607191*3	-----	10.0	14.745	10.0	-----	10.0	-----	10.0	35.819	10.0
0710053.	9607191*4	0.537	1.0	29.160	1.0	-----	1.0	0.184	1.0	84.032	1.0
0710054.	CCV	4.870	1.0	18.554	1.0	4.532	1.0	9.359	1.0	23.604	1.0
0710055.	CCB	-----	1.0	-----	1.0	-----	1.0	-----	1.0	-----	1.0
0710056.	9607191*4	-----	10.0	27.770	10.0	-----	10.0	-----	10.0	73.409	10.0
0710057.	9606696*5*R1	0.324	1.0	21.862	1.0	-----	1.0	1.559	1.0	17.508	1.0
0710058.	9606696*5*S1	4.241	1.0	32.278	1.0	28.480	1.0	17.514	1.0	33.888	1.0
0710059.	9606696*5*S2	4.311	1.0	31.456	1.0	29.968	1.0	17.742	1.0	34.218	1.0
0710060.	9606696*5*R1	-----	5.0	39.168	5.0	-----	5.0	1.584	5.0	17.644	5.0
0710061.	9606696*5*S1	18.465	5.0	75.868	5.0	-----	5.0	79.810	5.0	90.753	5.0
0710062.	9606696*5*S2	19.373	5.0	77.109	5.0	-----	5.0	83.067	5.0	94.068	5.0
0710063.	9606209*1	1.382	1.0	12.344	1.0	-----	1.0	-----	1.0	14.131	1.0
0710064.	9607209*1	-----	10.0	14.687	10.0	-----	10.0	-----	10.0	18.642	10.0
10065.	CCV	4.880	1.0	18.600	1.0	4.573	1.0	9.422	1.0	23.678	1.0
10066.	CCB	-----	1.0	-----	1.0	-----	1.0	-----	1.0	-----	1.0

File Name	Sample Name	o-Phosphate		Sulfate	
		Reported Amount	Dilution Factor	Reported Amount	Dilution Factor
0710001.	S0	-----	1.0	-----	1.0

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0710002. S1	-----	1.0	2.603	1.0
0710003. S2	2.369	1.0	9.236	1.0
0710004. S3	11.383	1.0	46.706	1.0
0710005. S4	25.296	1.0	101.027	1.0
0710006. IGV-LCS	12.836	1.0	48.659	1.0
0710007. ICB	-----	1.0	-----	1.0
0710008. GE9602016	-----	1.0	115.377	1.0
0710009. GE9602016	-----	5.0	102.804	5.0
0710010. 9607179*1	-----	5.0	58.419	5.0
0710011. 9607164*1	-----	1.0	-----	1.0
0710012. 9607164*1	-----	10.0	181.262	10.0
0710013. 9607164*1	-----	25.0	177.441	25.0
0710014. 9607164*2	-----	1.0	116.953	1.0
0710015. 9607164*2	-----	10.0	106.350	10.0
0710016. 9607164*2	-----	25.0	117.641	25.0
0710017. 9607164*3	-----	1.0	-----	1.0
0710018. CCV	12.998	1.0	48.292	1.0
0710019. CCB	-----	1.0	-----	1.0
0710020. 9607164*3	-----	10.0	178.190	10.0
0710021. 9607164*3	-----	25.0	185.693	25.0
0710022. 9607164*4	-----	1.0	64.510	1.0
0710023. 9607164*4	-----	10.0	64.100	10.0
0710024. 9607164*4	-----	25.0	76.648	25.0
0710025. 9607164*5	-----	1.0	49.468	1.0
0710026. 9607164*5	-----	10.0	51.897	10.0
0710027. 9607164*5	-----	25.0	65.112	25.0
0710028. 9607164*6*R1	-----	1.0	72.600	1.0
0710029. 9607164*6*S1	28.633	1.0	117.310	1.0
0710030. CCV	12.457	1.0	48.099	1.0
0710031. CCB	-----	1.0	-----	1.0
0710032. 9607164*6*S2	28.888	1.0	117.335	1.0
0710033. 9607164*6*R1	-----	10.0	70.936	10.0
0710034. 9607164*6*S1	302.738	10.0	477.283	10.0
0710035. 9607164*6*S2	302.303	10.0	476.298	10.0
0710036. 9607164*6*R1	-----	25.0	82.892	25.0
0710037. 9607164*6*S1	753.745	25.0	1074.885	25.0
0710038. 9607164*6*S2	760.732	25.0	1077.706	25.0
0710039. 9607190*1	-----	1.0	44.562	1.0
0710040. 9607190*1	-----	10.0	49.178	10.0
0710041. 9607191*1*R1	-----	1.0	36.183	1.0
0710042. CCV	12.416	1.0	47.883	1.0
0710043. CCB	0.272	1.0	-----	1.0
0710044. 9607191*1*S1	24.738	1.0	50.857	1.0
0710045. 9607191*1*S2	25.221	1.0	50.967	1.0
0710046. 9607191*1*R1	-----	10.0	41.400	10.0
0710047. 9607191*1*S1	264.681	10.0	179.673	10.0
0710048. 9607191*1*S2	264.965	10.0	180.142	10.0
0710049. 9607191*2	-----	1.0	69.307	1.0
0710050. 9607191*2	-----	10.0	68.112	10.0
0710051. 9607191*3	-----	1.0	23.815	1.0
0710052. 9607191*3	-----	10.0	30.793	10.0
0710053. 9607191*4	-----	1.0	57.594	1.0
0710054. CCV	12.074	1.0	47.696	1.0
0710055. CCB	-----	1.0	-----	1.0
0710056. 9607191*4	-----	10.0	58.598	10.0
0710057. 9606696*5*R1	4.592	1.0	37.683	1.0
0710058. 9606696*5*S1	31.303	1.0	52.733	1.0
0710059. 9606696*5*S2	31.724	1.0	52.907	1.0
0710060. 9606696*5*R1	4.731	5.0	36.795	5.0
0710061. 9606696*5*S1	130.548	5.0	106.371	5.0
0710062. 9606696*5*S2	137.106	5.0	108.911	5.0
0710063. 9606209*1	-----	1.0	36.179	1.0
0710064. 9607209*1	-----	10.0	41.103	10.0
0710065. CCV	12.125	1.0	47.738	1.0
0710066. CCB	-----	1.0	-----	1.0

Sample Analyzed on: _____ / _____ / _____ By: _____

Data Approved By: _____ on _____

Note: Tsuki Ni Kawatte Oshioki Yo

Software Version: 4.0<1C29>

Date: 7/10/96 11:18 AM

Sample Name : S0

Data File : C:\TC4\DATA\JUL\0710001.RAW Date: 7/10/96 11:09 AM

Sequence File: C:\TC4\0710.SEQ Cycle: 1 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

AUTO-CALIBRATION REPORT

Updating method : .\0710.mth

Calibration performed at level: S0

Values will replace previous averages in the method

Retention times in the method will be updated

Reported response values are the method averages.

Calibration Status:

Component	C0	C1	C2	C3	r^2	Status
Fluoride	-13984.382373	71877.050874	-----	-----	0.998832	2
Chloride	-22781.548801	54262.358299	-----	-----	0.999000	2
Nitrite	-3147.954483	37969.473794	-----	-----	0.999390	2
Bromide	-1529.117485	19635.759995	-----	-----	0.999853	2
Nitrate	-16736.721332	29296.662679	-----	-----	0.998513	2
o-Phosphate	-1922.021147	10161.224435	-----	-----	0.999433	2
Sulfate	-42209.122549	40422.981916	-----	-----	0.999014	2

Calibration Status Explanations:

- 1 = Component not calibrated: Rejected based on user criteria
- 2 = Component not calibrated: Was not found in peak/group list
- 3 = Component not calibrated: No ISTD specified in method
- 4 = Component not calibrated: ISTD was not found in peak list
- 5 = Component not calibrated: Uses constant calibration factor
- 6 = Component not calibrated: Uses calibration reference
- 7 = Component not calibrated: No calibration at this level
- 8 = Component not calibrated: Incomplete named group
- 9 = Component calibrated successfully

Software Version: 4.0<1C29>

Date: 7/10/96 11:18 AM

Sample Name : S0

Data File : C:\TC4\DATA\JUL\0710001.RAW Date: 7/10/96 11:09 AM

Sequence File: C:\TC4\0710.SEQ Cycle: 1 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000

Dilution Factor : 1.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
---------------	-------------------	---------	-------

=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.09	0.00	0.000	-----	0.000
Nitrite	4.39	0.00	0.000	-----	0.000
Bromide	5.45	0.00	0.000	-----	0.000
Nitrate	5.78	0.00	0.000	-----	0.000
o-Phosphate	7.15	0.00	0.000	-----	0.000
Sulfate	9.24	0.00	0.000	-----	0.000

=====

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9605011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710001.TX0

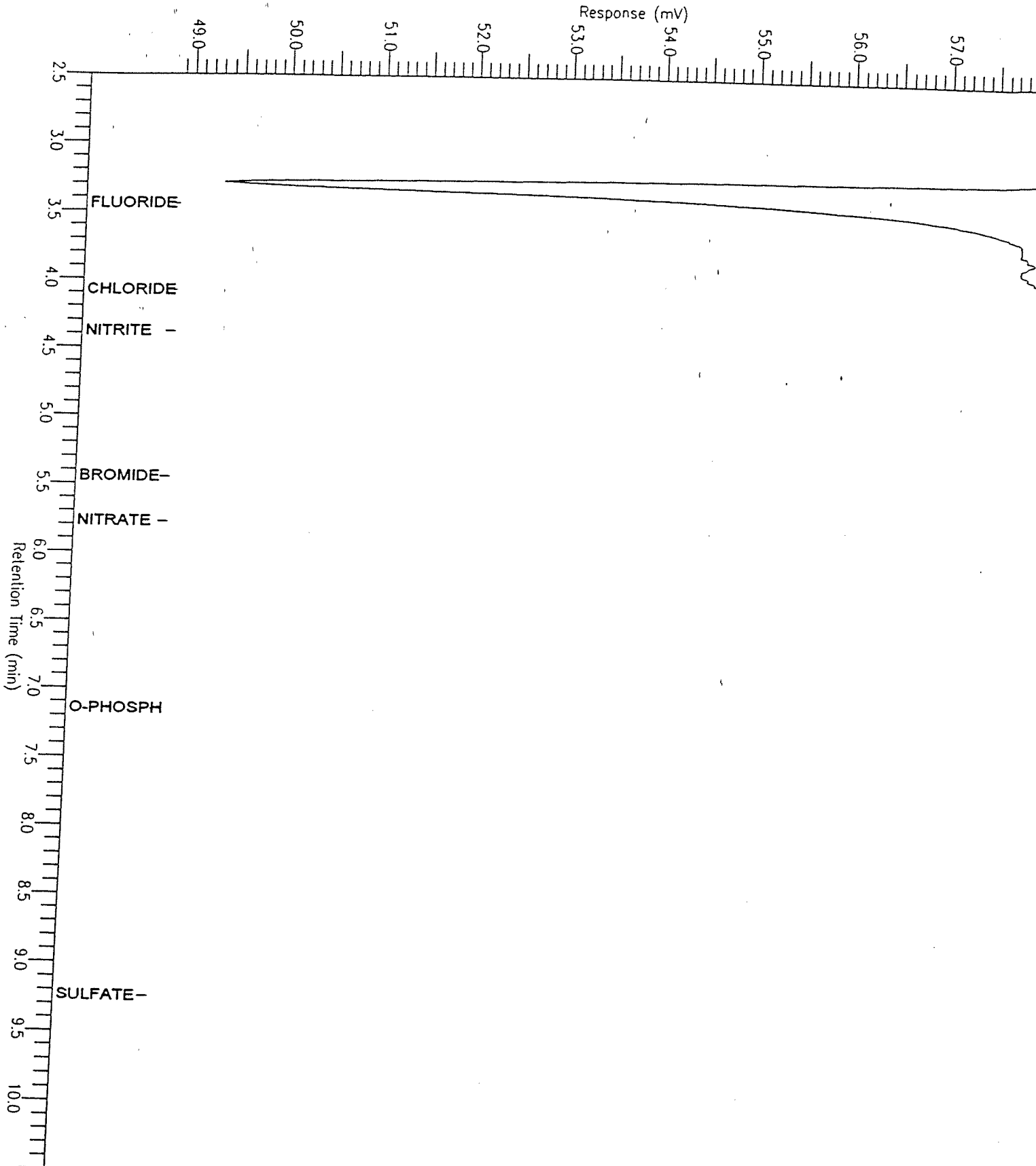
002545

Standard Anions by IC

Sample Name : S0
FileName : C:\VC4\DATA\JUL\0710001.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 170

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 1
Date : 7/10/96 11:18 AM
Time of Injection: 7/10/96 11:09 AM
Low Point : 48.88 mV
Plot Scale: 9.4 mV
Page 1 of 1
High Point : 58.33 mV



002546

Software Version: 4.0<1C29>

Date: 7/10/96 11:29 AM

Sample Name : S1

Data File : C:\TC4\DATA\JUL\0710002.RAW Date: 7/10/96 11:20 AM

Sequence File: C:\TC4\0710.SEQ Cycle: 2 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000

Dilution Factor : 1.00

AUTO-CALIBRATION REPORT

Updating method : .\0710.mth

Calibration performed at level: S1

Values will replace previous averages in the method

Retention times in the method will be updated

Reported response values are the method averages.

Calibration Status:

Component	C0	C1	C2	C3	r^2	Status
Fluoride	-13984.382373	71877.050874	-----	-----	0.998832	2
Chloride	-23293.105269	54278.188249	-----	-----	0.999011	9
Nitrite	-3455.825320	38007.561842	-----	-----	0.999417	9
Bromide	-1621.611902	19641.484425	-----	-----	0.999857	9
Nitrate	-17062.788352	29304.734707	-----	-----	0.998527	9
o-Phosphate	-1922.021147	10161.224435	-----	-----	0.999433	2
Sulfate	-42651.224301	40428.454189	-----	-----	0.999019	9

Calibration Status Explanations:

- 1 = Component not calibrated: Rejected based on user criteria
- 2 = Component not calibrated: Was not found in peak/group list
- 3 = Component not calibrated: No ISTD specified in method
- 4 = Component not calibrated: ISTD was not found in peak list
- 5 = Component not calibrated: Uses constant calibration factor
- 6 = Component not calibrated: Uses calibration reference
- 7 = Component not calibrated: No calibration at this level
- 8 = Component not calibrated: Incomplete named group
- 9 = Component calibrated successfully

Software Version: 4.0<1C29>

Date: 7/10/96 11:29 AM

Sample Name : S1

Data File : C:\TC4\DATA\JUL\0710002.RAW Date: 7/10/96 11:20 AM

Sequence File: C:\TC4\0710.SEQ Cycle: 2 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000		0.000
Chloride	4.03	30990.00	1.000	1.00	1.000
Nitrite	4.37	5322.00	0.231	1.00	0.231
Bromide	5.45	6976.00	0.438	1.00	0.438
Nitrate	5.90	22499.00	1.350	1.00	1.350
o-Phosphate	7.15	0.00	0.000		0.000
Sulfate	9.52	62569.50	2.603	1.00	2.603

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

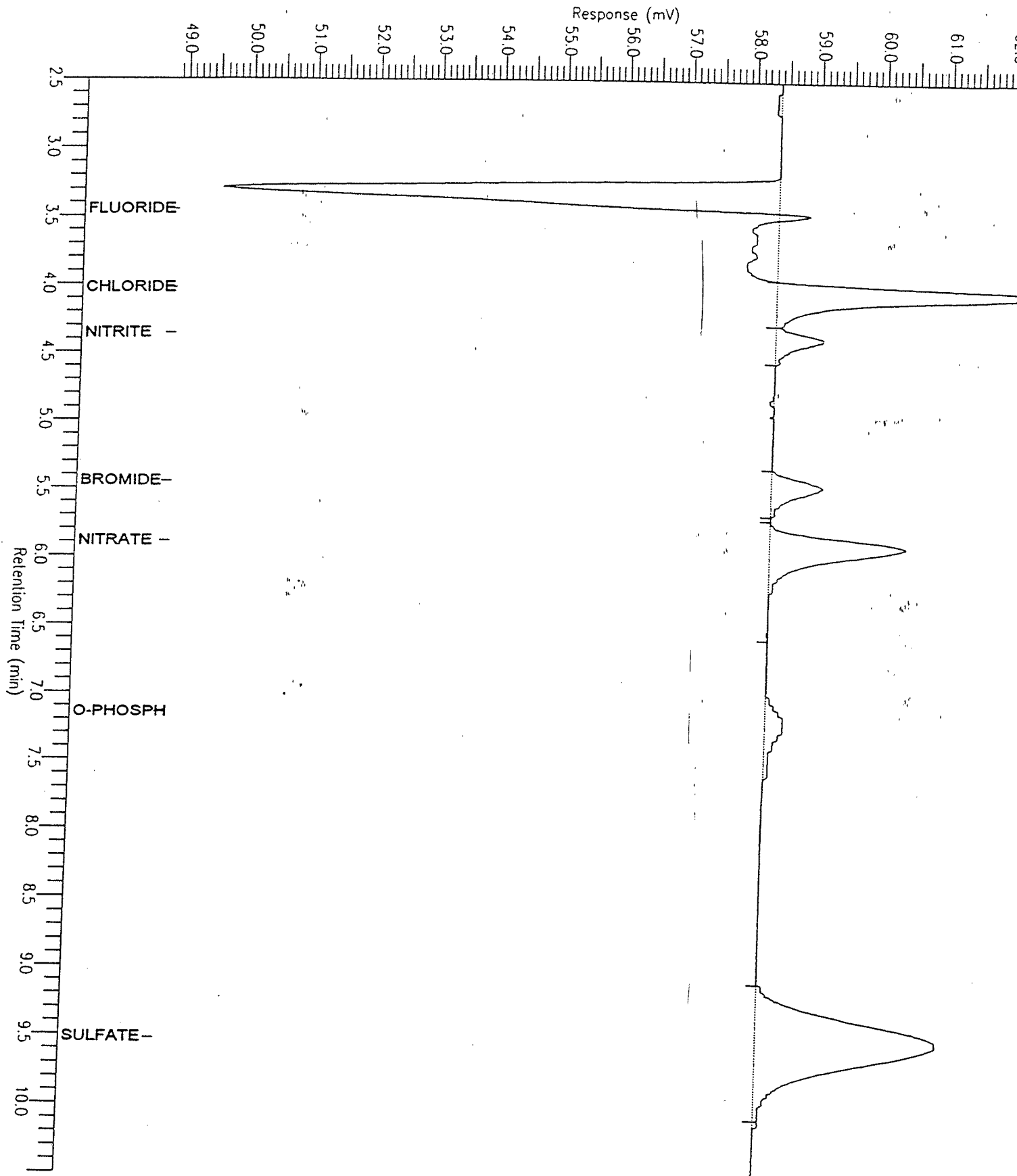
Report stored in ASCII file: C:\TC4\DATA\JUL\0710002.TX0

Standard Anions by IC

Sample Name : S1
FileName : C:\TC4\DATA\JUL\0710002.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 2
Date : 7/10/96 11:29 AM
Time of Injection: 7/10/96 11:20 AM
Low Point : 48.89 mV
Plot Scale: 14.0 mV
Page 1 of 1
High Point : 62.86 mV



002549

Software Version: 4.0<1C29>

Date: 7/10/96 11:39 AM

Sample Name : S2

Data File : C:\TC4\DATA\JUL\0710003.RAW Date: 7/10/96 11:30 AM

Sequence File: C:\TC4\0710.SEQ Cycle: 3 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

AUTO-CALIBRATION REPORT

Updating method : .\0710.mth

Calibration performed at level: S2

Values will replace previous averages in the method

Retention times in the method will be updated

Reported response values are the method averages.

Calibration Status:

Component	C0	C1	C2	C3	r^2	Status
Fluoride	-14110.722070	71889.933417	-----	-----	0.998809	9
Chloride	-24383.861393	54305.993462	-----	-----	0.998983	9
Nitrite	-4158.309878	38079.212436	-----	-----	0.999302	9
Bromide	-1868.167477	19654.054691	-----	-----	0.999840	9
Nitrate	-17956.419522	29322.958831	-----	-----	0.998491	9
o-Phosphate	-2106.302999	10168.740694	-----	-----	0.999410	9
Sulfate	-43666.414792	40438.805741	-----	-----	0.999003	9

Calibration Status Explanations:

- 1 = Component not calibrated: Rejected based on user criteria
- 2 = Component not calibrated: Was not found in peak/group list
- 3 = Component not calibrated: No ISTD specified in method
- 4 = Component not calibrated: ISTD was not found in peak list
- 5 = Component not calibrated: Uses constant calibration factor
- 6 = Component not calibrated: Uses calibration reference
- 7 = Component not calibrated: No calibration at this level
- 8 = Component not calibrated: Incomplete named group
- 9 = Component calibrated successfully

Software Version: 4.0<1C29>

Date: 7/10/96 11:39 AM

Sample Name : S2

Data File : C:\TC4\DATA\JUL\0710003.RAW Date: 7/10/96 11:30 AM

Sequence File: C:\TC4\0710.SEQ Cycle: 3 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	47097.00	0.851	1.00	0.851
Chloride	4.04	177642.50	3.720	1.00	3.720
Nitrite	4.37	30397.00	0.907	1.00	0.907
Bromide	5.43	35954.50	1.924	1.00	1.924
Nitrate	5.83	117592.00	4.623	1.00	4.623
o-Phosphate	7.17	22186.50	2.389	1.00	2.389
Sulfate	9.44	329810.50	9.236	1.00	9.236

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710003.TX0

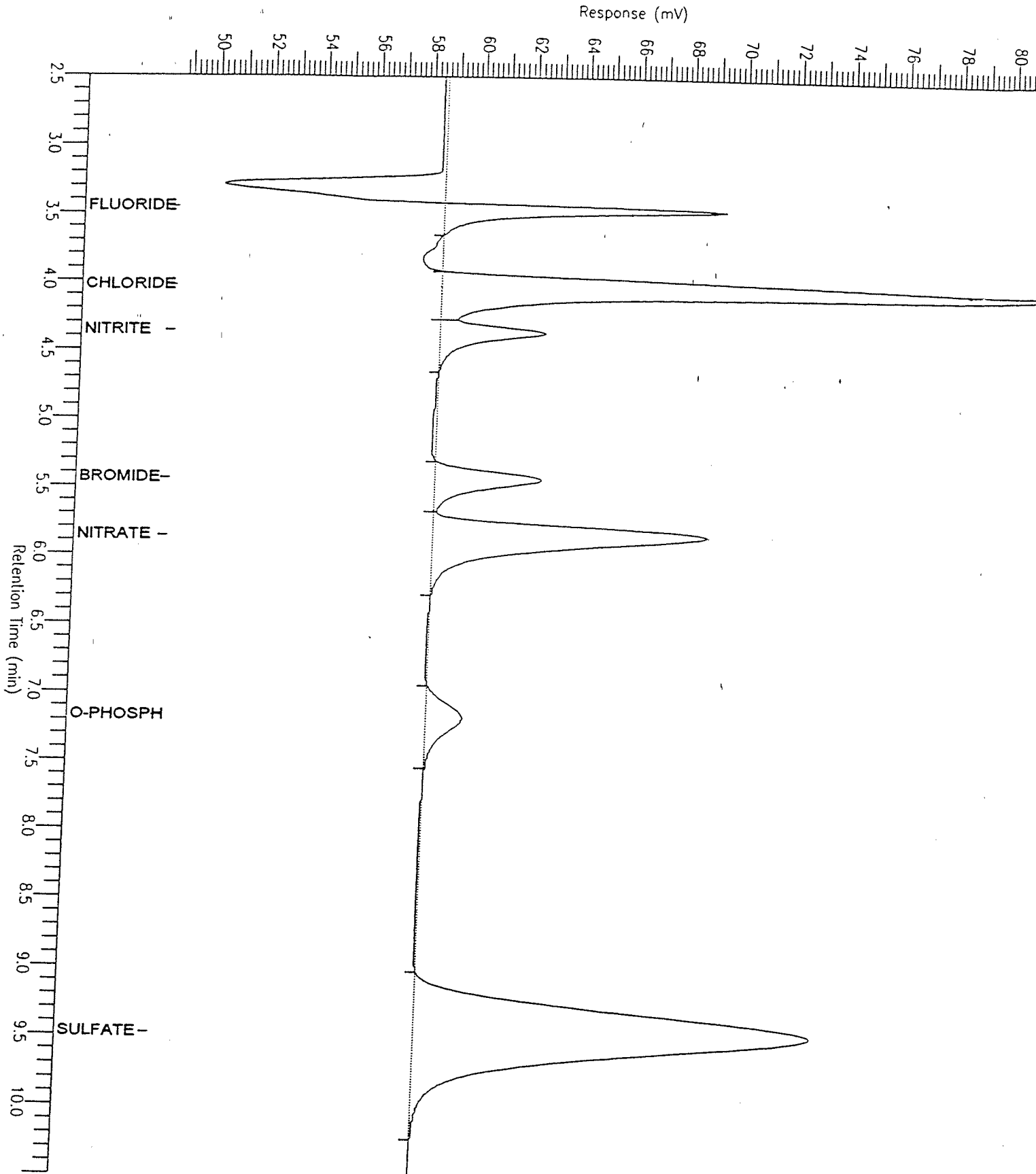
002551

Standard Anions by IC

Sample Name : S2
FileName : C:\TC4\DATA\JUL\0710003.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 3
Date : 7/10/96 11:39 AM
Time of Injection: 7/10/96 11:30 AM
Low Point : 48.62 mV
Plot Scale: 33.7 mV
Page 1 of 1
High Point : 82.35 mV



002552

Software Version: 4.0<1C29>

Date: 7/10/96 11:50 AM

Sample Name : S3

Data File : C:\TC4\DATA\JUL\0710004.RAW Date: 7/10/96 11:41 AM

Sequence File: C:\TC4\0710.SEQ Cycle: 4 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000

Dilution Factor : 1.00

AUTO-CALIBRATION REPORT

Updating method : .\0710.mth

Calibration performed at level: S3

Values will replace previous averages in the method

Retention times in the method will be updated

Reported response values are the method averages.

Calibration Status:

Component	C0	C1	C2	C3	r^2	Status
Fluoride	-15111.921647	71694.317210	-----	-----	0.998233	9
Chloride	-28418.427062	54108.923216	-----	-----	0.997884	9
Nitrite	-5524.901374	37812.205287	-----	-----	0.997209	9
Bromide	-2383.954247	19603.667002	-----	-----	0.999498	9
Nitrate	-21252.546030	29194.158157	-----	-----	0.996836	9
o-Phosphate	-3262.797263	10078.357493	-----	-----	0.996308	9
Sulfate	-51952.506542	40276.910525	-----	-----	0.997785	9

Calibration Status Explanations:

- 1 = Component not calibrated: Rejected based on user criteria
- 2 = Component not calibrated: Was not found in peak/group list
- 3 = Component not calibrated: No ISTD specified in method
- 4 = Component not calibrated: ISTD was not found in peak list
- 5 = Component not calibrated: Uses constant calibration factor
- 6 = Component not calibrated: Uses calibration reference
- 7 = Component not calibrated: No calibration at this level
- 8 = Component not calibrated: Incomplete named group
- 9 = Component calibrated successfully

Software Version: 4.0<1C29>
 Date: 7/10/96 11:50 AM
 Sample Name : S3
 Data File : C:\TC4\DATA\JUL\0710004.RAW Date: 7/10/96 11:41 AM
 Sequence File: C:\TC4\0710.SEQ Cycle: 4 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	327042.00	4.772	1.00	4.772
Chloride	4.07	984011.00	18.711	1.00	18.711
Nitrite	4.37	169459.00	4.628	1.00	4.628
Bromide	5.39	187476.50	9.685	1.00	9.685
Nitrate	5.71	650397.00	23.006	1.00	23.006
o-Phosphate	7.14	111462.00	11.383	1.00	11.383
Sulfate	9.22	1829229.50	46.706	1.00	46.706

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710004.TX0

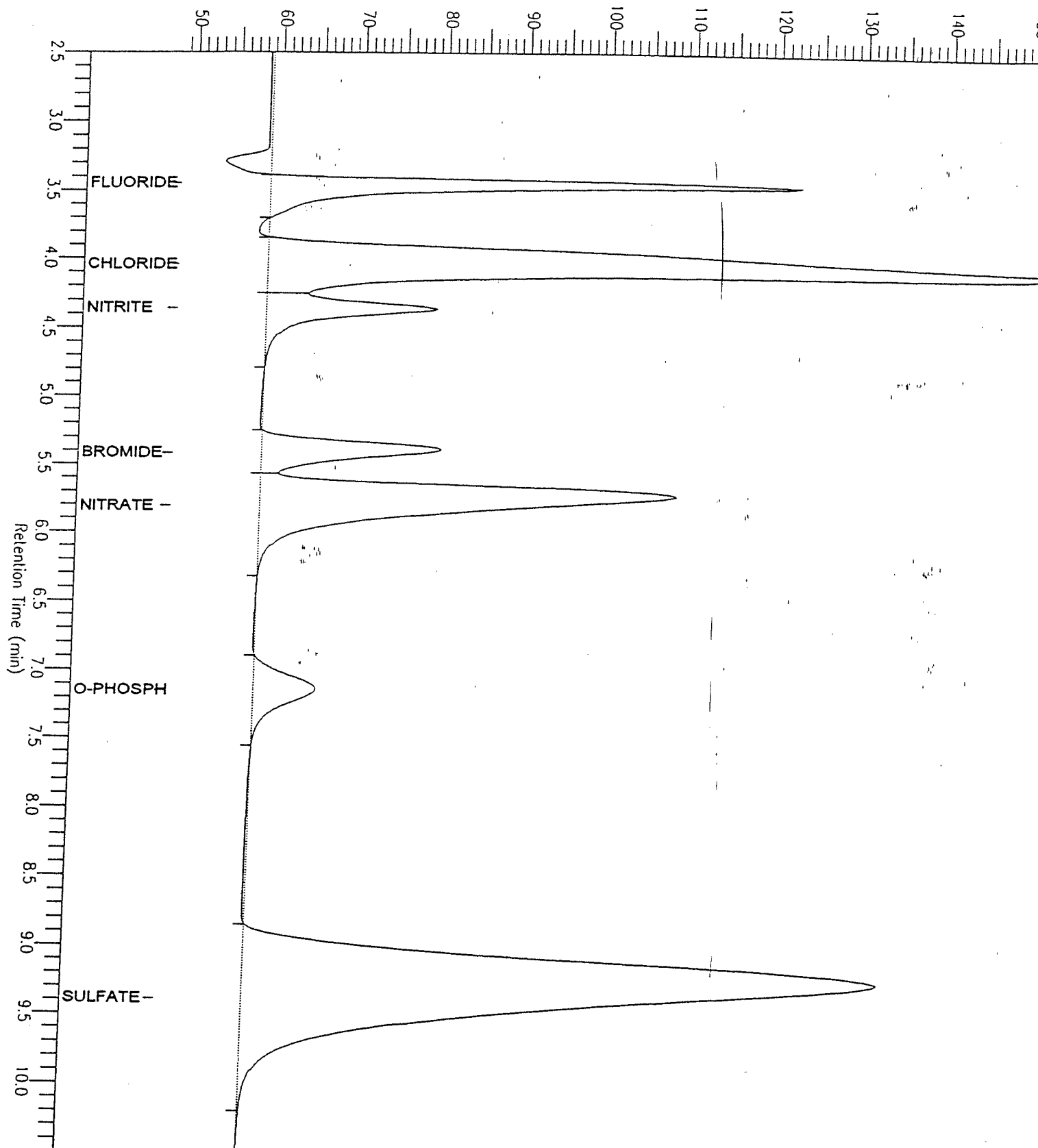
Standard Anions by IC

Sample Name : S3
FileName : C:\TC4\DATA\JUL\0710004.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 48 mV

Sample #: 4
Date : 7/10/96 11:50 AM
Time of Injection: 7/10/96 11:41 AM
Low Point : 48.27 mV
Plot Scale: 107.6 mV
Page 1 of 1
High Point : 155.91 mV

Response (mV)



002555

Software Version: 4.0<1C29>
 Date: 7/10/96 12:00 PM
 Sample Name : S4
 Data File : C:\TC4\DATA\JUL\0710005.RAW Date: 7/10/96 11:51 AM
 Sequence File: C:\TC4\0710.SEQ Cycle: 5 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 1.00

AUTO-CALIBRATION REPORT

=====
 Updating method : .\0710.mth
 Calibration performed at level: S4
 Values will replace previous averages in the method
 Retention times in the method will be updated
 Reported response values are the method averages.
 =====

Calibration Status:

Component	C0	C1	C2	C3	r^2	Status
Fluoride	-13122.931097	69824.856358	-----	-----	0.998958	9
Chloride	-21531.147892	52490.539975	-----	-----	0.999020	9
Nitrite	-2601.626504	35064.606547	-----	-----	0.999715	9
Bromide	-1626.820851	19247.845045	-----	-----	0.999828	9
Nitrate	-15201.705653	28056.687933	-----	-----	0.998617	9
o-Phosphate	-1763.692316	9514.740990	-----	-----	0.998930	9
Sulfate	-36697.464983	38843.042843	-----	-----	0.999127	9

Calibration Status Explanations:

- 1 = Component not calibrated: Rejected based on user criteria
- 2 = Component not calibrated: Was not found in peak/group list
- 3 = Component not calibrated: No ISTD specified in method
- 4 = Component not calibrated: ISTD was not found in peak list
- 5 = Component not calibrated: Uses constant calibration factor
- 6 = Component not calibrated: Uses calibration reference
- 7 = Component not calibrated: No calibration at this level
- 8 = Component not calibrated: Incomplete named group
- 9 = Component calibrated successfully

Software Version: 4.0<1C29>

Date: 7/10/96 12:00 PM

Sample Name : S4

Data File : C:\TC4\DATA\JUL\0710005.RAW Date: 7/10/96 11:51 AM

Sequence File: C:\TC4\0710.SEQ Cycle: 5 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	690565.50	10.078	1.00	10.078
Chloride	4.10	2101093.00	40.438	1.00	40.438
Nitrite	4.37	349864.00	10.052	1.00	10.052
Bromide	5.36	385091.00	20.091	1.00	20.091
Nitrate	5.64	1406098.00	50.658	1.00	50.658
o-Phosphate	7.11	238923.50	25.296	1.00	25.296
Sulfate	9.04	3887480.00	101.027	1.00	101.027

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0710005.TX0

002557

Standard Anions by IC

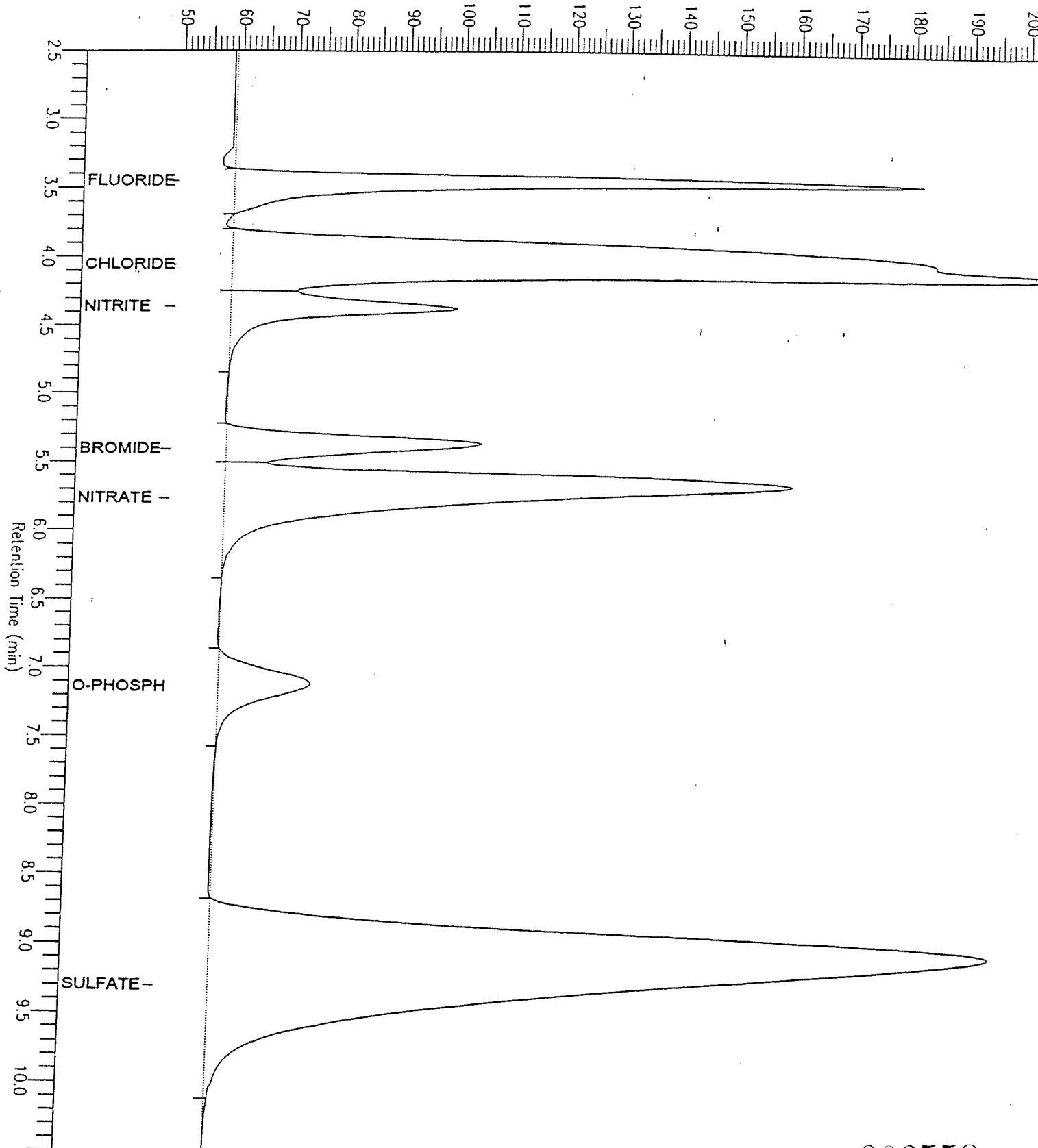
Sample Name : S4
FileName : C:\IC4\DATA\JUL\0710005.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 5
Date : 7/10/96 12:00 PM
Time of Injection: 7/10/96 11:51 AM
Low Point : 49.36 mV
Plot Scale: 159.5 mV
High Point : 208.81 mV

Page 1 of 1

Response (mV)



002558

Software Version: 4.0<1C29>

Date: 7/10/96 12:12 PM

Sample Name : ICV-LCS

Data File : C:\TC4\DATA\JUL\0710006.RAW Date: 7/10/96 12:03 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 6 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko Instrument 533-23 Analyst _____ Batch 0710/0710

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	338068.00	5.030	1.00	5.030 #1/
Chloride	4.07	966033.50	18.814	1.00	18.814 96% (07-1228-1) AC
Nitrite	4.36	166090.50	4.811	1.00	4.811 96%
Bromide	5.38	184088.00	9.649	1.00	9.649 96%
Nitrate	5.70	661570.00	24.122	1.00	24.122 96% (07-1226-1)
o-Phosphate	7.14	120370.50	12.836	1.00	12.836 102%
Sulfate	9.21	1853355.00	48.659	1.00	48.659 93%

Reviewed and Approved by DW Date 7/12/96

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0710006.TX0

(SHP)

#0710

NO3 (07-1226-1)

α (07-1338-1)

SO4 (07-1340-1)

#0710.2

Br (07-1328-1)

α (07-1330-1)

NO2 (07-1332-1)

NO3 (07-1334-1)

SO4 (07-1336-1)

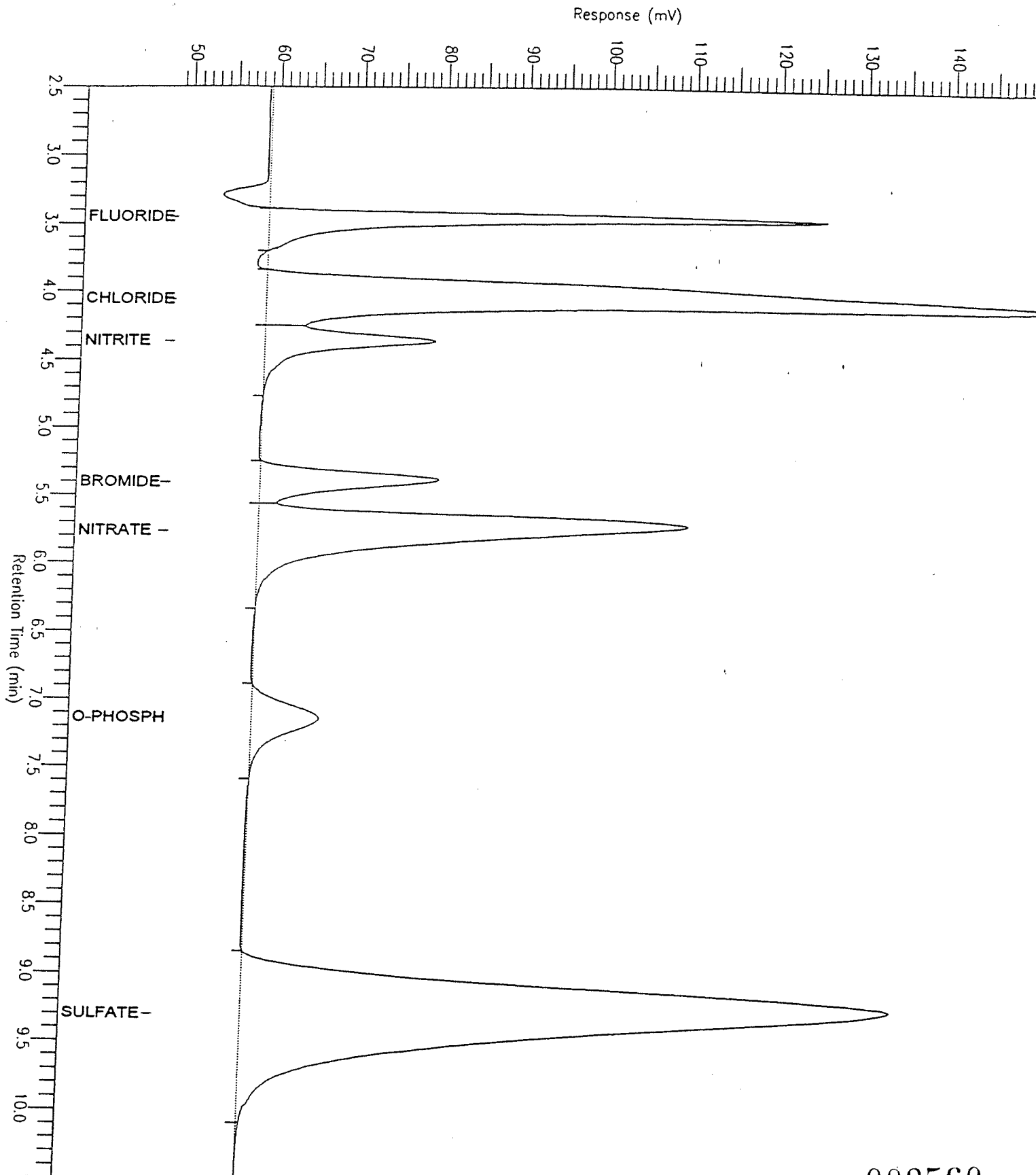
002559

Standard Anions by IC

Sample Name : IGV-LCS
FileName : C:\IC4\DATA\JUL\0710006.raw
Method : 0710
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 6
Date : 7/10/96 12:12 PM
Time of Injection: 7/10/96 12:03 PM
Low Point : 48.52 mV
Plot Scale: 105.5 mV
Page 1 of 1
High Point : 154.03 mV



002560

Software Version: 4.0<1C29>

Date: 7/10/96 12:22 PM

Sample Name : ICB

Data File : C:\TC4\DATA\JUL\0710007.RAW Date: 7/10/96 12:13 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 7 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.06	0.00	0.000	-----	0.000 (09-698-1) AF
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.77	0.00	0.000	-----	0.000 (09-651-1)
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.30	0.00	0.000	-----	0.000

=====

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

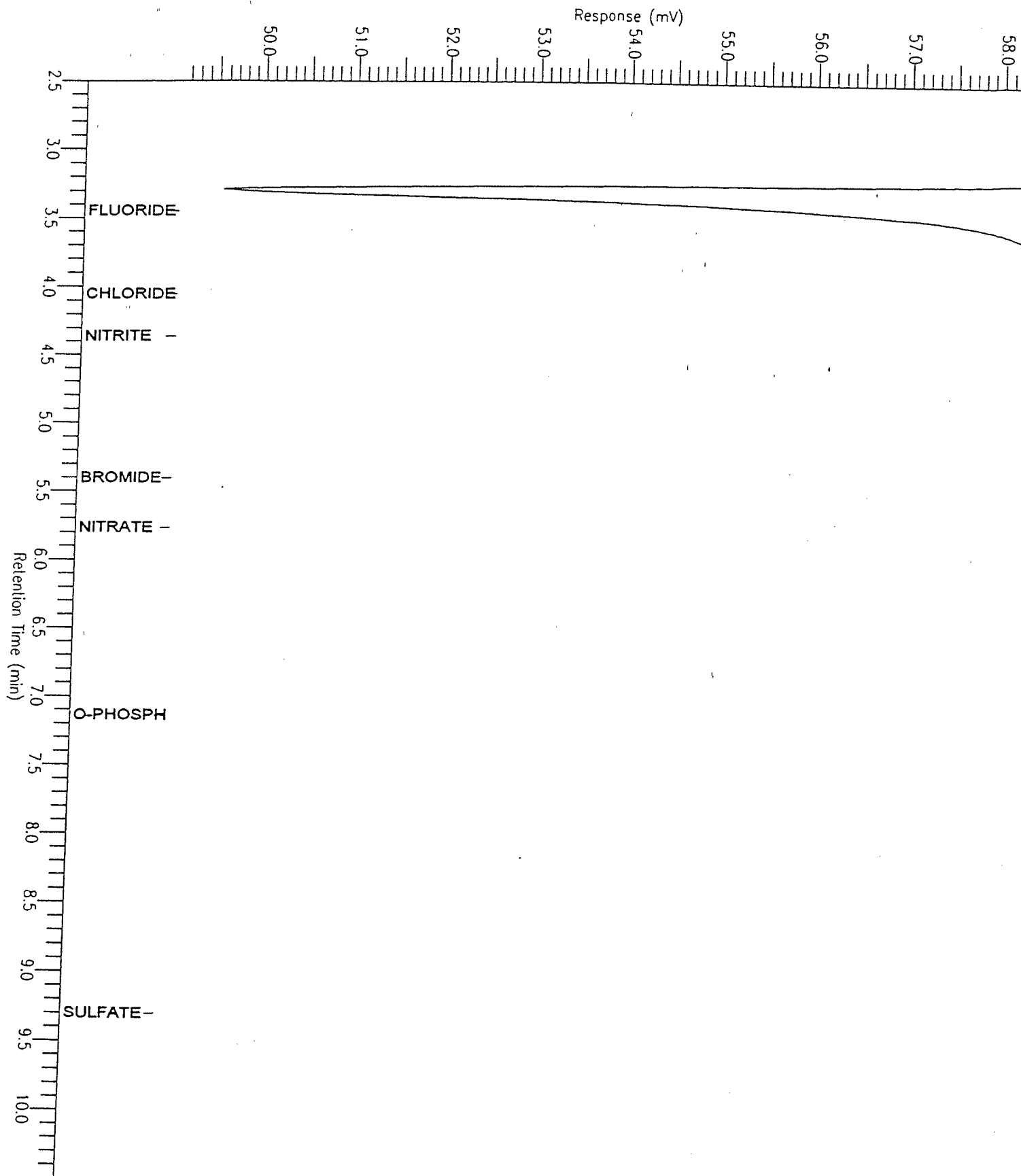
Report stored in ASCII file: C:\TC4\DATA\JUL\0710007.TX0

<u>0710</u>	<u>BHP</u> <u>0710.2</u>
NO ₃ (09-651-1)	Br (09-720-1)
Cl (09-725-1)	Cl (09-721-1)
SO ₄ (09-726-1)	NO ₂ (09-722-1)
	NO ₃ (09-723-1)
	SO ₄ (09-724-1)

Standard Anions by IC

Sample Name : ICB
FileName : C:\TC4\DATA\JUL\0710007.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0
End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 7
Date : 7/10/96 12:22 PM
Time of Injection: 7/10/96 12:13 PM
Low Point : 49.10 mV
Plot Scale: 9.7 mV
Page 1 of 1
High Point : 58.76 mV



002562

Software Version: 4.0<1C29>

Date: 7/10/96 12:33 PM

Sample Name : GE9602016

Data File : C:\TC4\DATA\JUL\0710008.RAW Date: 7/10/96 12:24 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 8 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.51	423167.00	6.249	1.00	6.249
Chloride	4.13	6527719.00	124.770	1.00	124.770
Nitrite	4.42	1319379.50	37.701	1.00	37.701
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.66	1062958.50	38.428	1.00	38.428
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	8.99	4444861.00	115.377	1.00	115.377

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0710008.TX0

002563

Standard Anions by IC

Sample Name : GE9602016

FileName : C:\TC4\DATA\JUL\0710008.raw

Method : 0710

Start Time : 2.50 min

Scale Factor: 1.0

End Time : 10.50 min

Plot Offset: 42 mV

Sample #: 8

Date : 7/10/96 12:33 PM

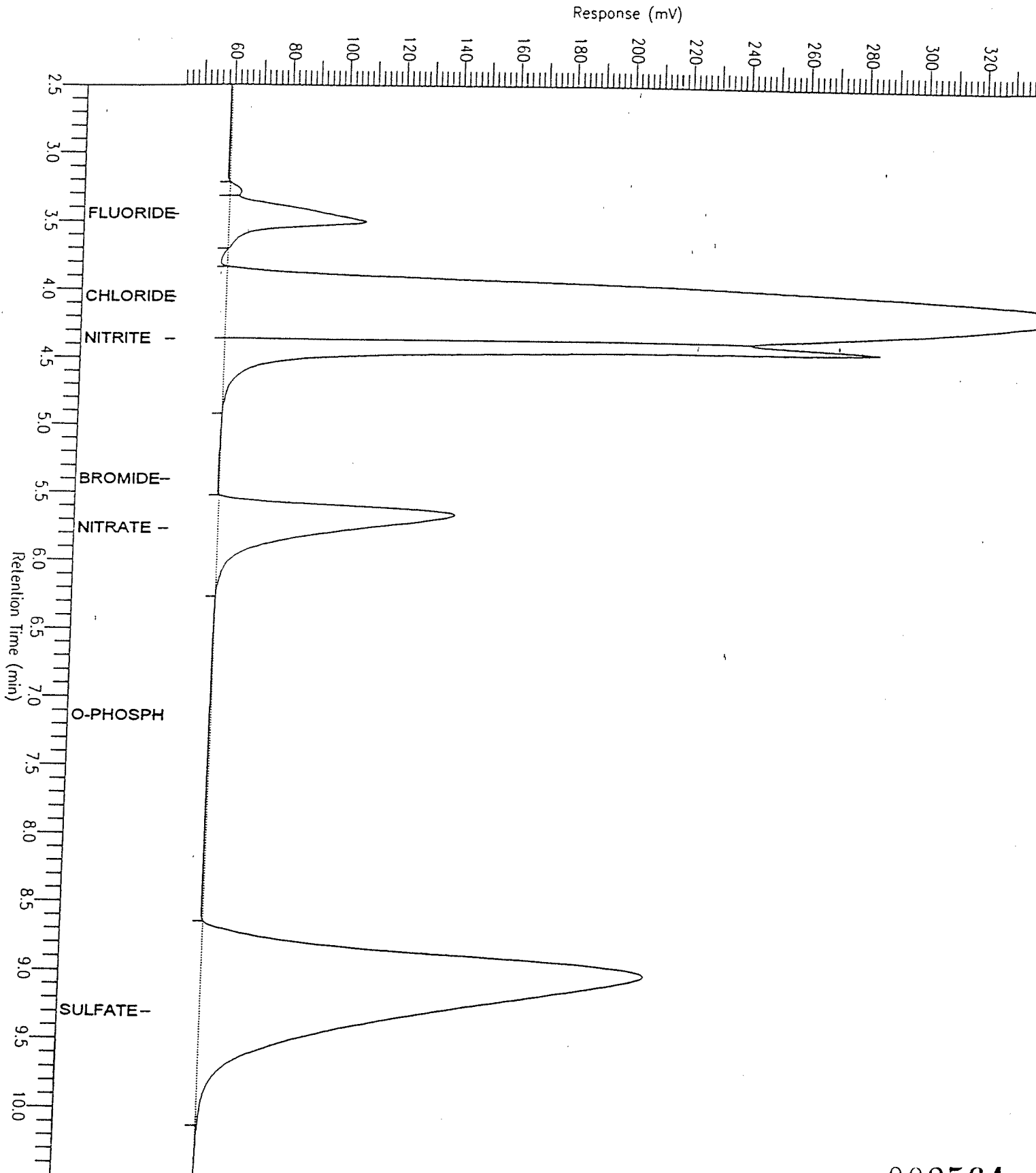
Time of Injection: 7/10/96 12:24 PM

Low Point : 42.47 mV

Plot Scale: 307.6 mV

Page 1 of 1

High Point : 350.07 mV



002564

Software Version: 4.0<1C29>

Date: 7/10/96 12:43 PM

Sample Name : GE9602016

Data File : C:\TC4\DATA\JUL\0710009.RAW Date: 7/10/96 12:34 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 9 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 5.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.47	58688.50	1.028	5.00	5.142
Chloride	4.16	1352188.00	26.171	5.00	130.854
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.78	183674.00	7.088	5.00	35.442
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.37	761943.00	20.561	5.00	102.804

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710009.TX0

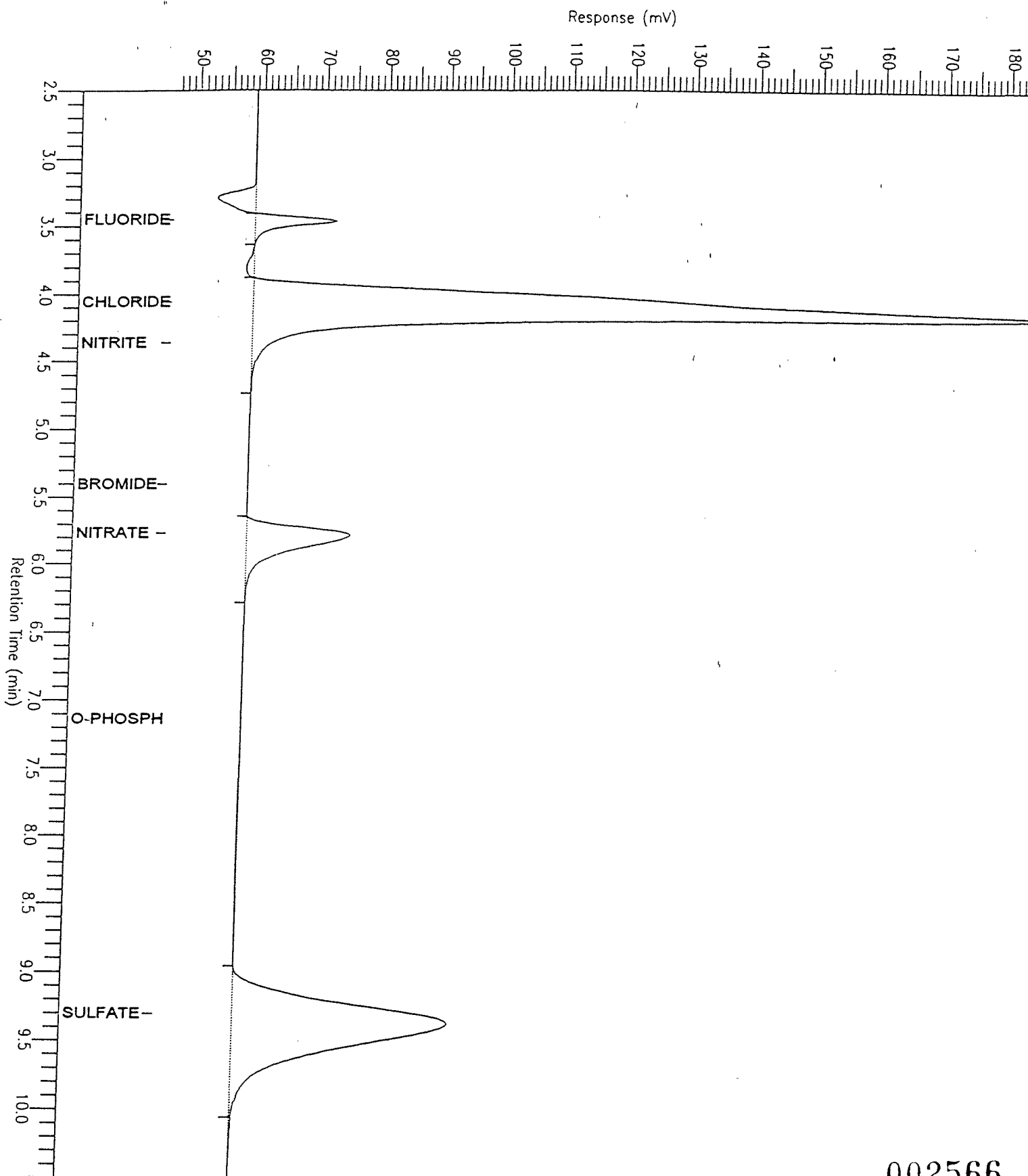
002565

Standard Anions by IC

Sample Name : GE9602016
FileName : C:\IC4\DATA\JUL\0710009.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 46 mV

Sample #: 9
Date : 7/10/96 12:44 PM
Time of Injection: 7/10/96 12:34 PM
Low Point : 46.04 mV
Plot Scale: 142.8 mV
High Point : 188.82 mV



002566

Software Version: 4.0<1C29>

Date: 7/10/96 12:54 PM

Sample Name : 9607179*1

Data File : C:\TC4\DATA\JUL\0710010.RAW Date: 7/10/96 12:45 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 10 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 5.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.06	292413.50	5.981	5.00	29.905
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.76	238143.50	9.030	5.00	45.149
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.42	417133.50	11.684	5.00	58.419

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710010.TX0

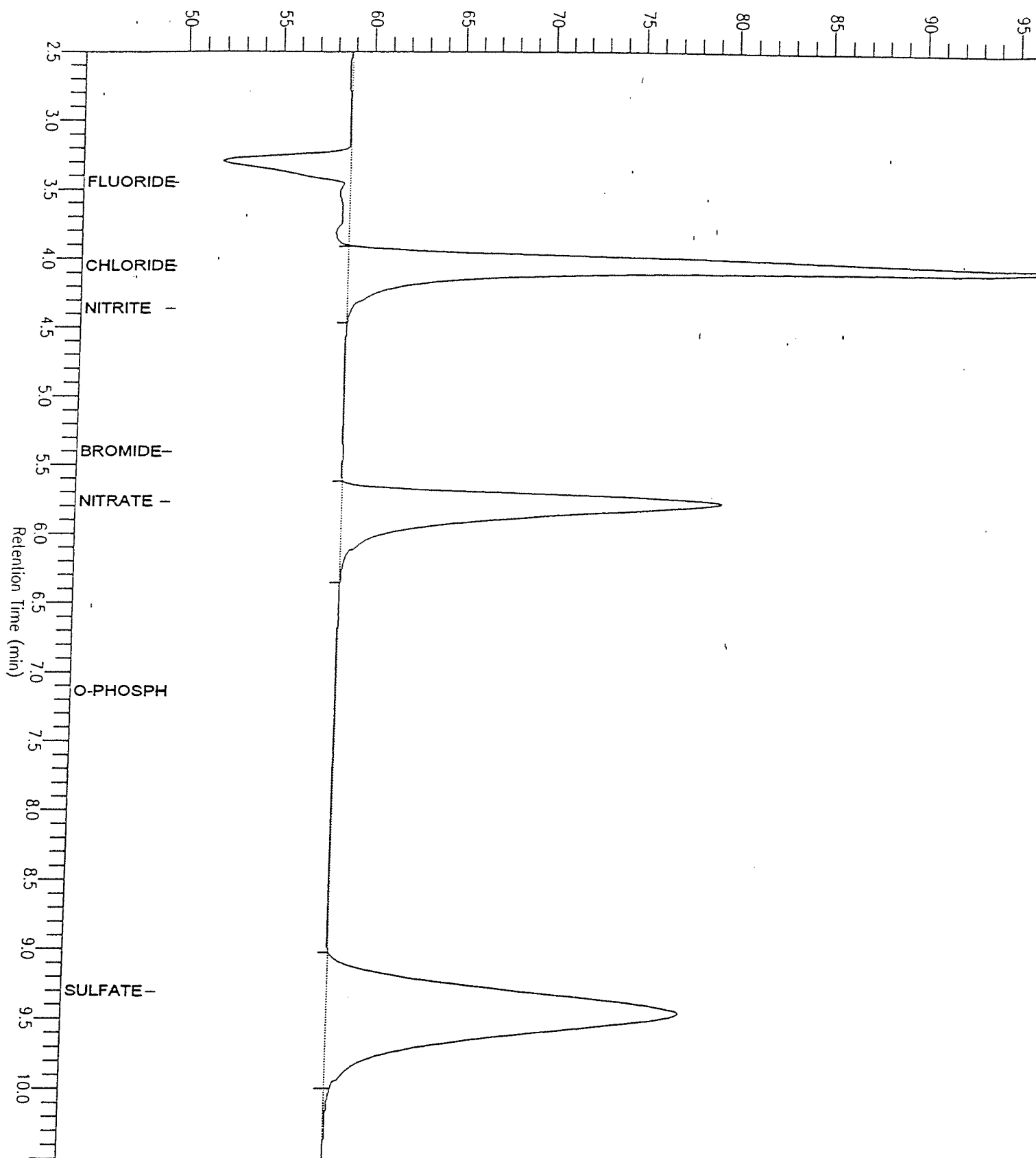
Standard Anions by IC

Sample Name : 9607179*1
FileName : C:\TC4\DATA\JUL\0710010.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 10
Date : 7/10/96 12:54 PM
Time of Injection: 7/10/96 12:45 PM
Low Point : 49.56 mV
Plot Scale: 48.7 mV
Page 1 of 1
High Point : 98.25 mV

Response (mV)



002568

Software Version: 4.0<1C29>

Date: 7/10/96 01:04 PM

Sample Name : 9607164*1

Data File : C:\TC4\DATA\JUL\0710011.RAW Date: 7/10/96 12:55 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 11 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.41	62938.00	1.089	1.00	1.089
Chloride	4.04	9693974.50	185.091	1.00	185.091
Nitrite	4.39	1422476.00	40.641	1.00	40.641
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.67	720979.50	26.239	1.00	26.239
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.30	0.00	0.000	-----	0.000

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710011.TX0

002569

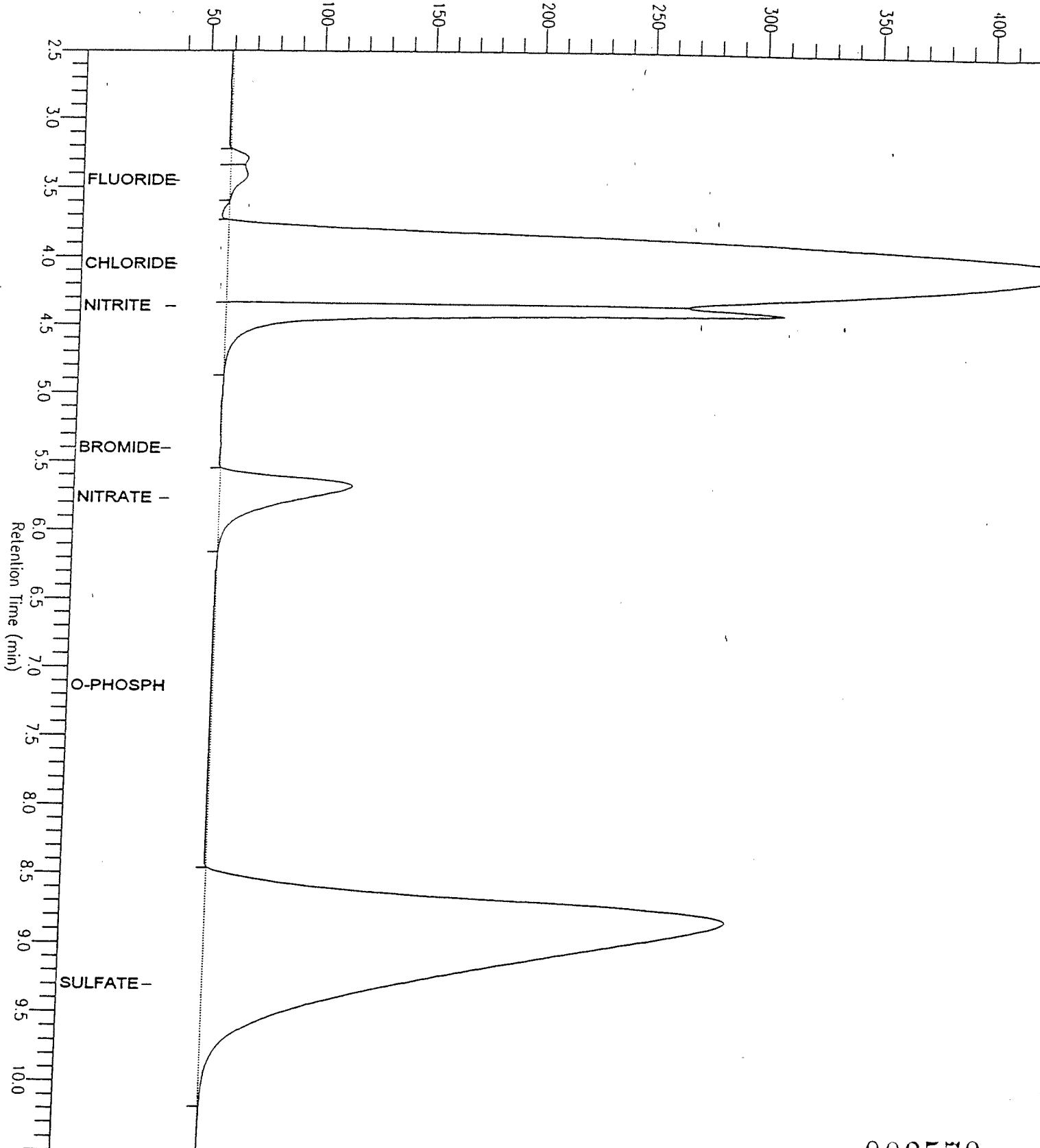
Standard Anions by IC

Sample Name : 9607164*1
FileName : C:\TC4\DATA\JUL\0710011.raw
Method : 0740
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 38 mV

Sample #: 11
Date : 7/10/96 01:05 PM
Time of Injection: 7/10/96 12:55 PM
Low Point : 37.51 mV
Plot Scale: 401.8 mV
Page 1 of 1
High Point : 439.29 mV

Response (mV)



002570

Software Version: 4.0<1C29>

Date: 7/10/96 01:15 PM

Sample Name : 9607164*1

Data File : C:\TC4\DATA\JUL\0710012.RAW Date: 7/10/96 01:06 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 12 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
---------------	-------------------	---------	-------

=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.10	946962.00	18.451	10.00	184.508
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.81	64135.50	2.828	10.00	28.277
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.37	667455.50	18.128	10.00	181.282

=====

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710012.TX0

002571

Standard Anions by IC

Sample Name : 9607164*1

FileName : C:\TC4\DATA\JUL\0710012.raw

Method : 0710

Start Time : 2.50 min

Scale Factor: 1.0

End Time : 10.50 min

Plot Offset: 46 mV

Sample #: 12

Date : 7/10/96 01:15 PM

Time of Injection: 7/10/96 01:06 PM

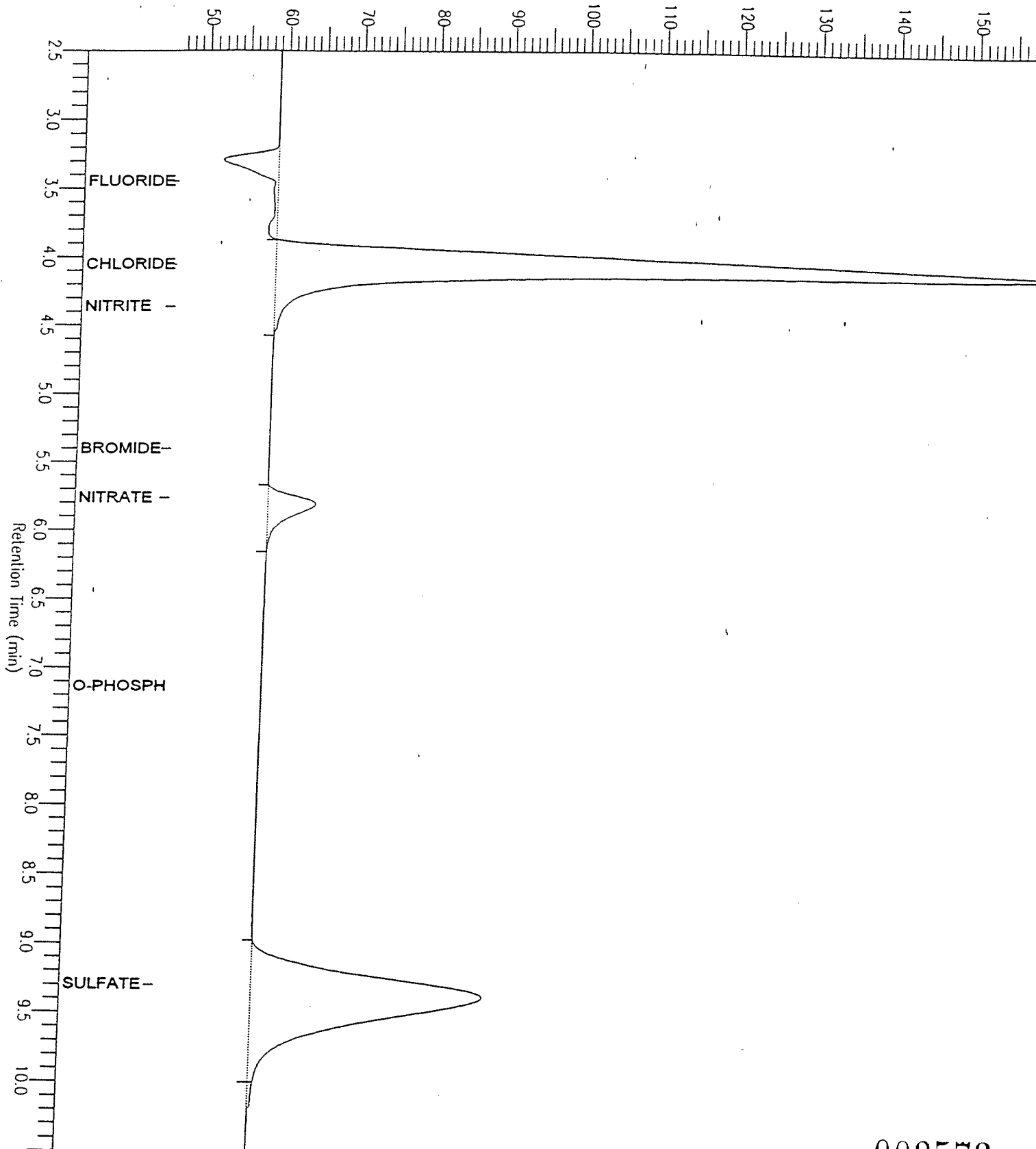
Low Point : 46.31 mV

Plot Scale: 117.1 mV

Page 1 of 1

High Point : 163.38 mV

Response (mV)



002572

Software Version: 4.0<1C29>

Date: 7/10/96 01:25 PM

Sample Name : 9607164*1

Data File : C:\TC4\DATA\JUL\0710013.RAW Date: 7/10/96 01:16 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 13 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
---------------	-------------------	---------	-------

=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000		0.000
Chloride	4.05	336801.00	6.827	25.00	170.665
Nitrite	4.37	0.00	0.000		0.000
Bromide	5.41	0.00	0.000		0.000
Nitrate	5.83	22727.00	1.352	25.00	33.796
o-Phosphate	7.14	0.00	0.000		0.000
Sulfate	9.45	238996.00	7.098	25.00	177.441

=====

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710013.TX0

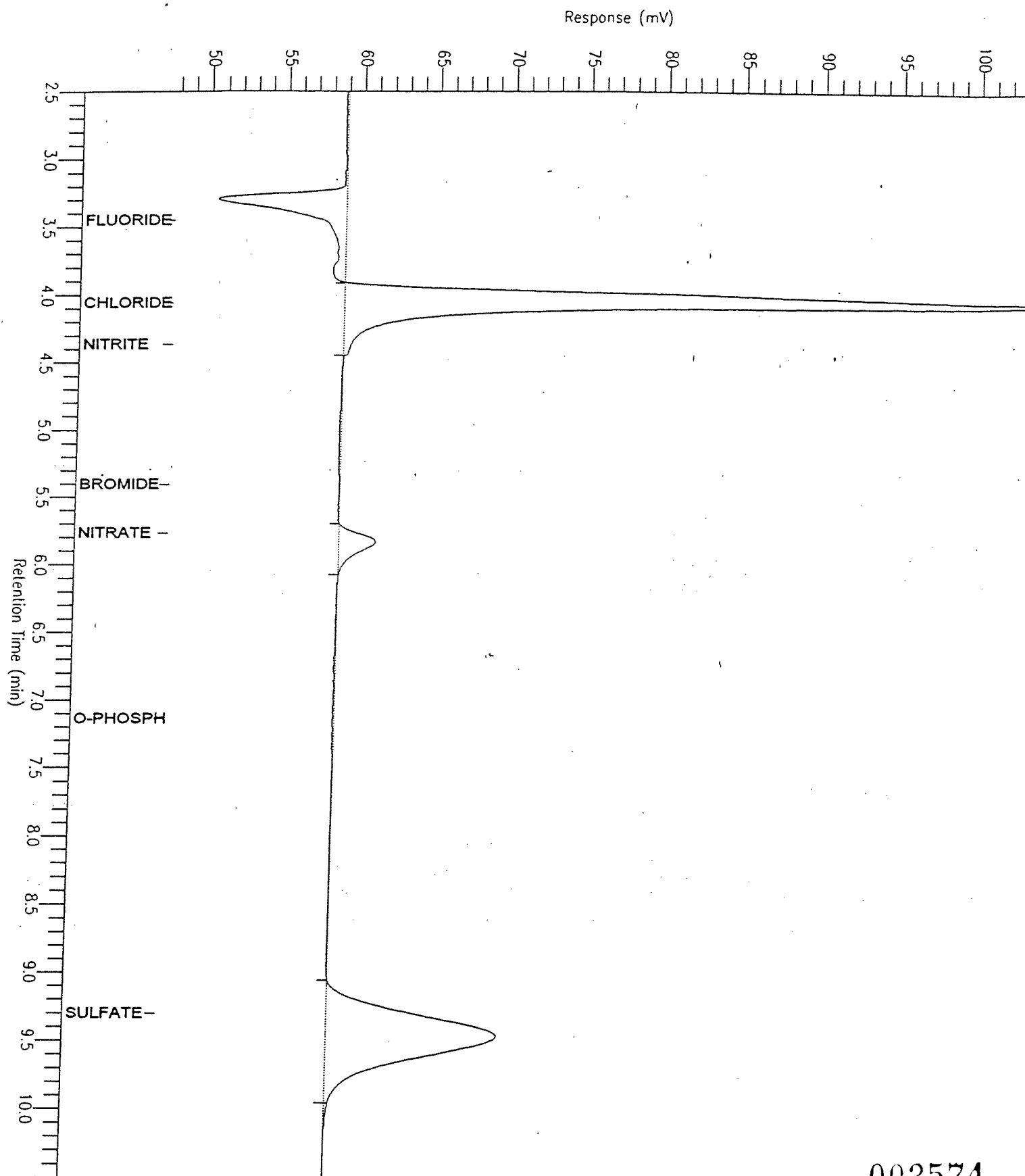
002573

Standard Anions by IC

Sample Name : 9607164*1
FileName : C:\IC4\DATA\JUL\0710013.raw
Method : 0710
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 10.50 min
Plot Offset: 48 mV

Sample #: 13
Date : 7/10/96 01:26 PM
Time of Injection: 7/10/96 01:16 PM
Low Point : 47.72 mV
Plot Scale: 57.7 mV
Page 1 of 1
High Point : 105.41 mV



002574

Software Version: 4.0<1C29>

Date: 7/10/96 01:36 PM

Sample Name : 9607164*2

Data File : C:\TC4\DATA\JUL\0710014.RAW Date: 7/10/96 01:27 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 14 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.43	44792.50	0.829	1.00	0.829
Chloride	4.04	1.01e+07	193.062	1.00	193.062
Nitrite	4.40	1462435.00	41.781	1.00	41.781
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.71	417575.00	15.425	1.00	15.425
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	8.99	4506127.50	116.953	1.00	116.953

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710014.TX0

Standard Anions by IC

Sample Name : 9607164*2

FileName : C:\TC4\DATA\JUL\0710014.raw

Method : 0710

Start Time : 2.50 min

Scale Factor: 1.0

End Time : 10.50 min

Plot Offset: 37 mV

Sample #: 14

Date : 7/10/96 01:36 PM

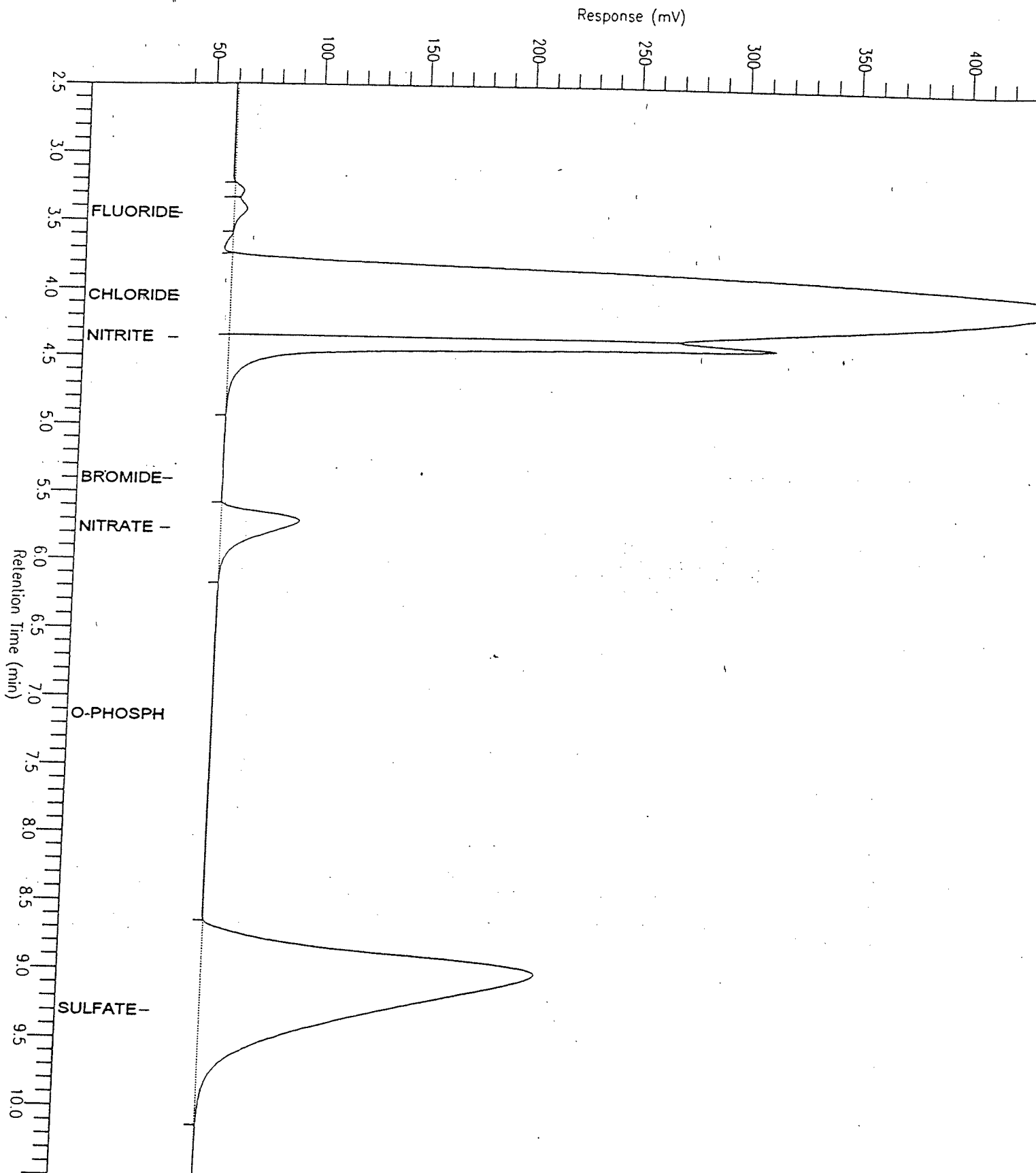
Time of Injection: 7/10/96 01:27 PM

Low Point : 36.50 mV

Plot Scale: 413.3 mV

Page 1 of 1

High Point : 449.82 mV



002576

Software Version: 4.0<1C29>

Date: 7/10/96 01:46 PM

Sample Name : 9607164*2

Data File : C:\TC4\DATA\JUL\0710015.RAW Date: 7/10/96 01:37 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 15 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.10	975945.00	19.003	10.00	190.030
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.81	35983.50	1.824	10.00	18.243
c-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.43	376400.00	10.635	10.00	106.350

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0710015.TX0

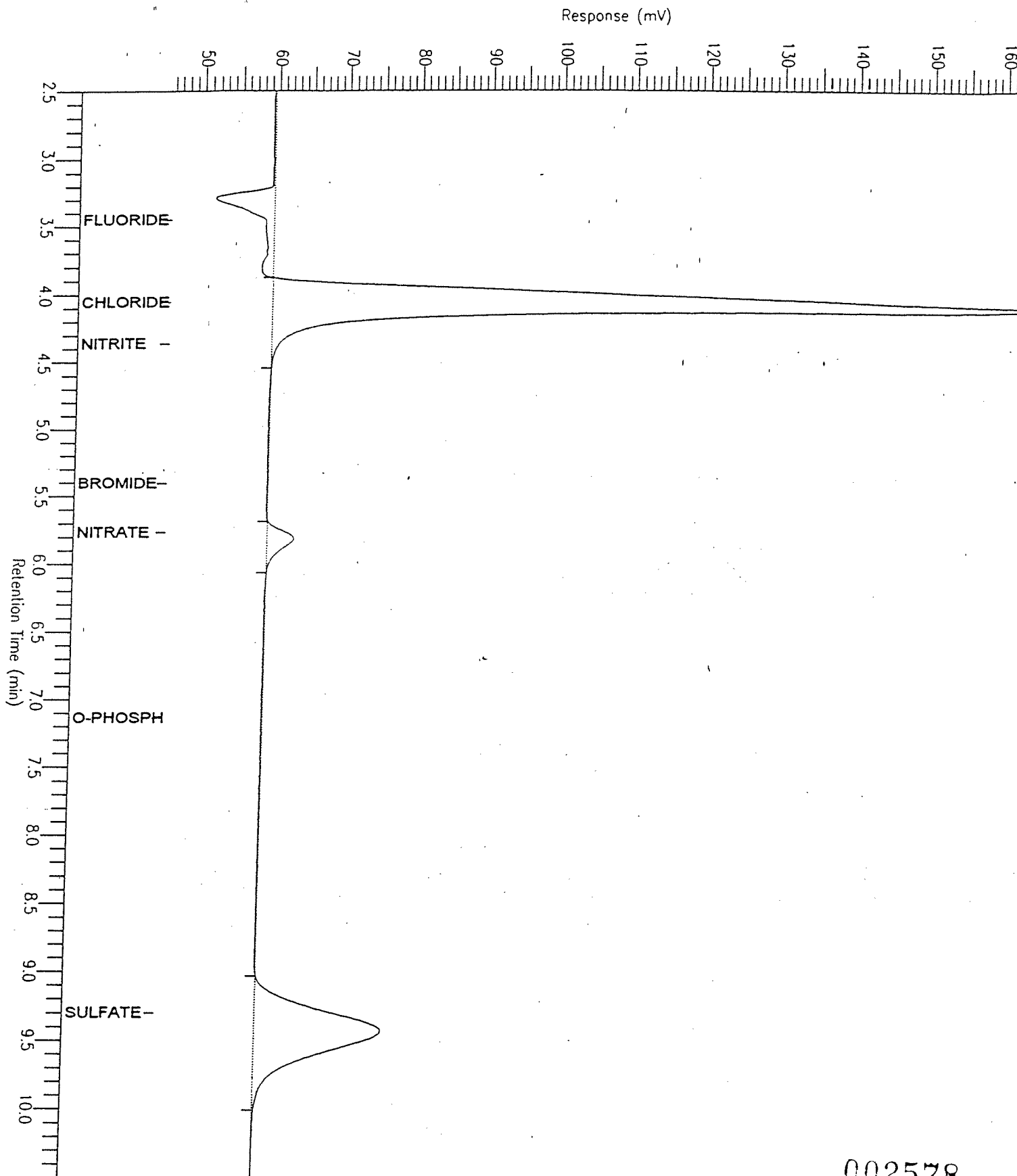
002577

Standard Anions by IC

Sample Name : 9607164*2
FileName : C:\JC4\DATA\JUL\0710015.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 46 mV

Sample #: 15
Date : 7/10/96 01:47 PM
Time of Injection: 7/10/96 01:37 PM
Low Point : 45.65 mV
Plot Scale: 122.2 mV
High Point : 167.60 mV



002578

Software Version: 4.0<1C29>

Date: 7/10/96 01:57 PM

Sample Name : 9607164*2

Data File : C:\TC4\DATA\JUL\0710016.RAW Date: 7/10/96 01:48 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 16 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.06	355913.50	7.191	25.00	179.768
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.83	15276.50	1.086	25.00	27.158
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.48	146064.00	4.706	25.00	117.641

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710016.TX0

002579

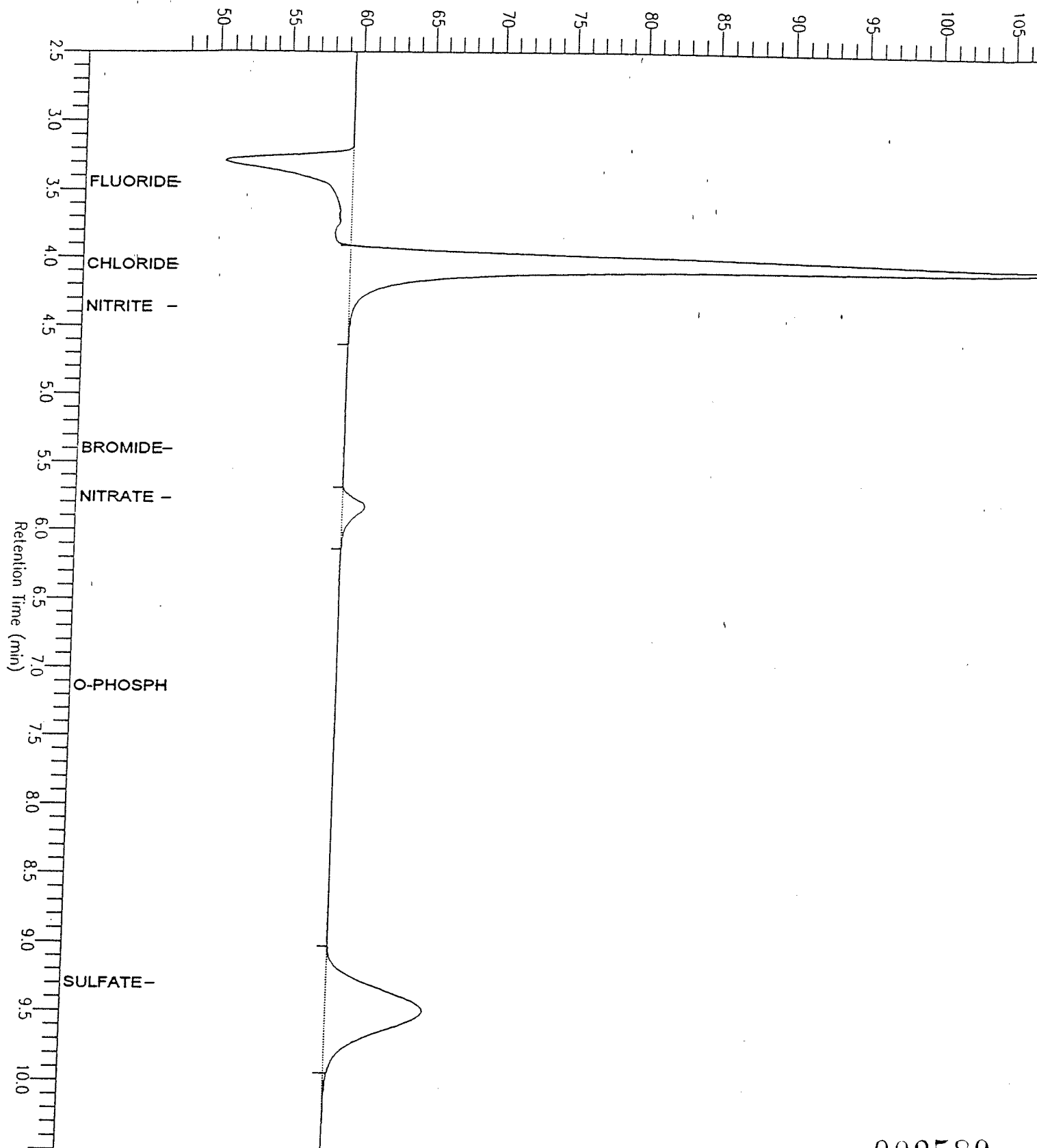
Standard Anions by IC

Sample Name : 9607164*2
FileName : C:\ATC4\DATA\JUL\0710016.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 48 mV

Sample #: 16
Date : 7/10/96 01:57 PM
Time of Injection: 7/10/96 01:48 PM
Low Point : 47.52 mV
Plot Scale: 62.0 mV
Page 1 of 1
High Point : 109.50 mV

Response (mV)



002580

Software Version: 4.0<1C29>

Date: 7/10/96 02:07 PM

Sample Name : 9607164*3

Data File : C:\TC4\DATA\JUL\0710017.RAW Date: 7/10/96 01:58 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 17 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.41	64499.50	1.112	1.00	1.112
Chloride	4.04	9780195.00	186.733	1.00	186.733
Nitrite	4.39	1329393.50	37.987	1.00	37.987
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.65	719232.50	26.177	1.00	26.177
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.30	0.00	0.000	-----	0.000

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710017.TX0

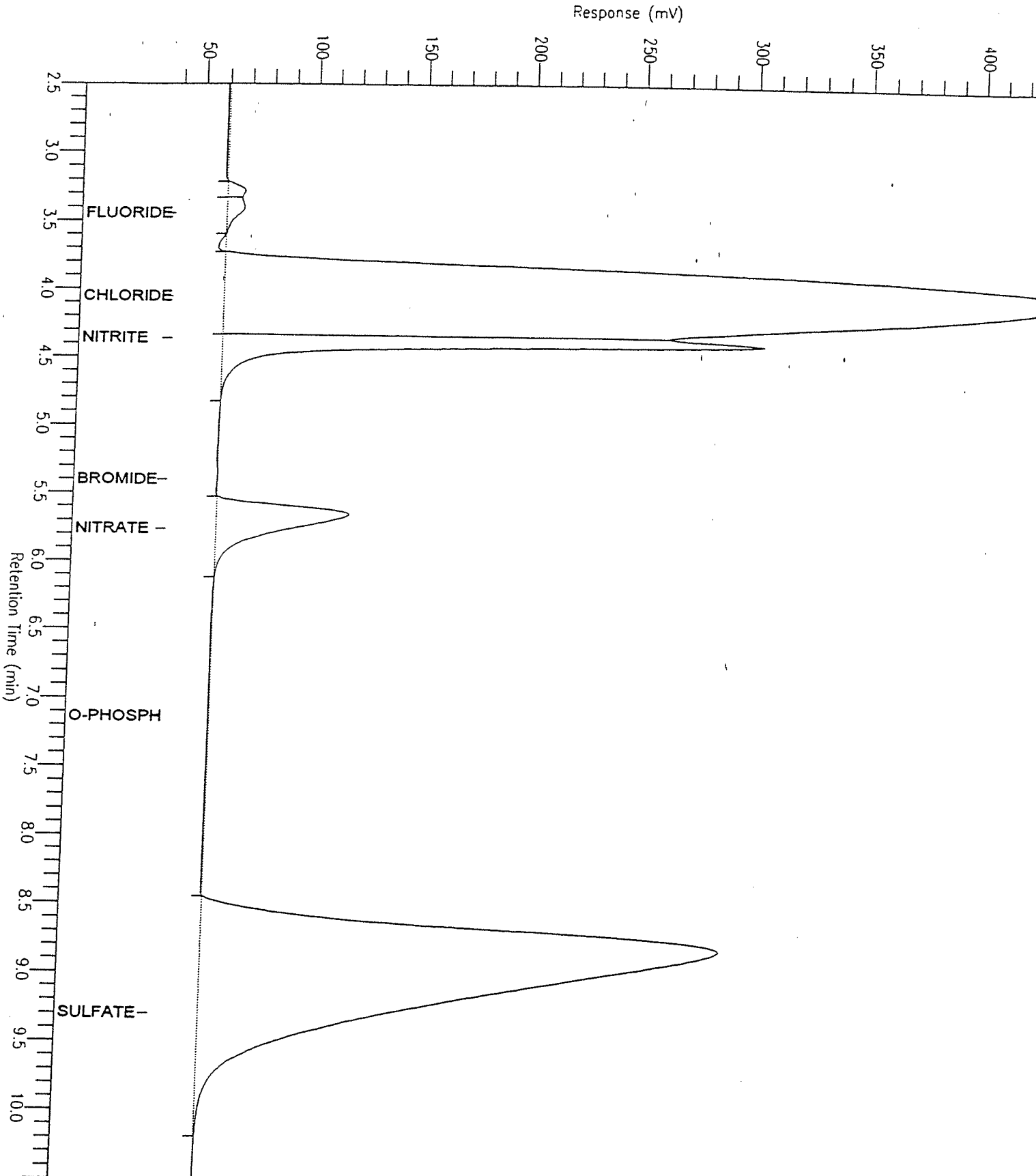
002581

Standard Anions by IC

Sample Name : 9607164+3
FileName : C:\IC4\DATA\JUL\0710017.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 38 mV

Sample #: 17
Date : 7/10/96 02:08 PM
Time of Injection: 7/10/96 01:58 PM
Low Point : 37.59 mV
Plot Scale: 404.1 mV
Page 1 of 1
High Point : 441.71 mV



002582

Software Version: 4.0<1C29>
 Date: 7/10/96 02:18 PM
 Sample Name : CCV
 Data File : C:\TC4\DATA\JUL\0710018.RAW Date: 7/10/96 02:09 PM
 Sequence File: C:\TC4\0710.SEQ Cycle: 18 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	333738.00	4.968	1.00	4.968
Chloride	4.06	965573.50	18.805	1.00	18.805
Nitrite	4.35	162073.50	4.696	1.00	4.696
Bromide	5.34	182776.00	9.580	1.00	9.580
Nitrate	5.66	660210.50	24.073	1.00	24.073 (0.7-12.23-)
o-Phosphate	7.15	121912.00	12.998	1.00	12.998
Sulfate	9.21	1839127.50	48.292	1.00	48.292

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710018.TX0

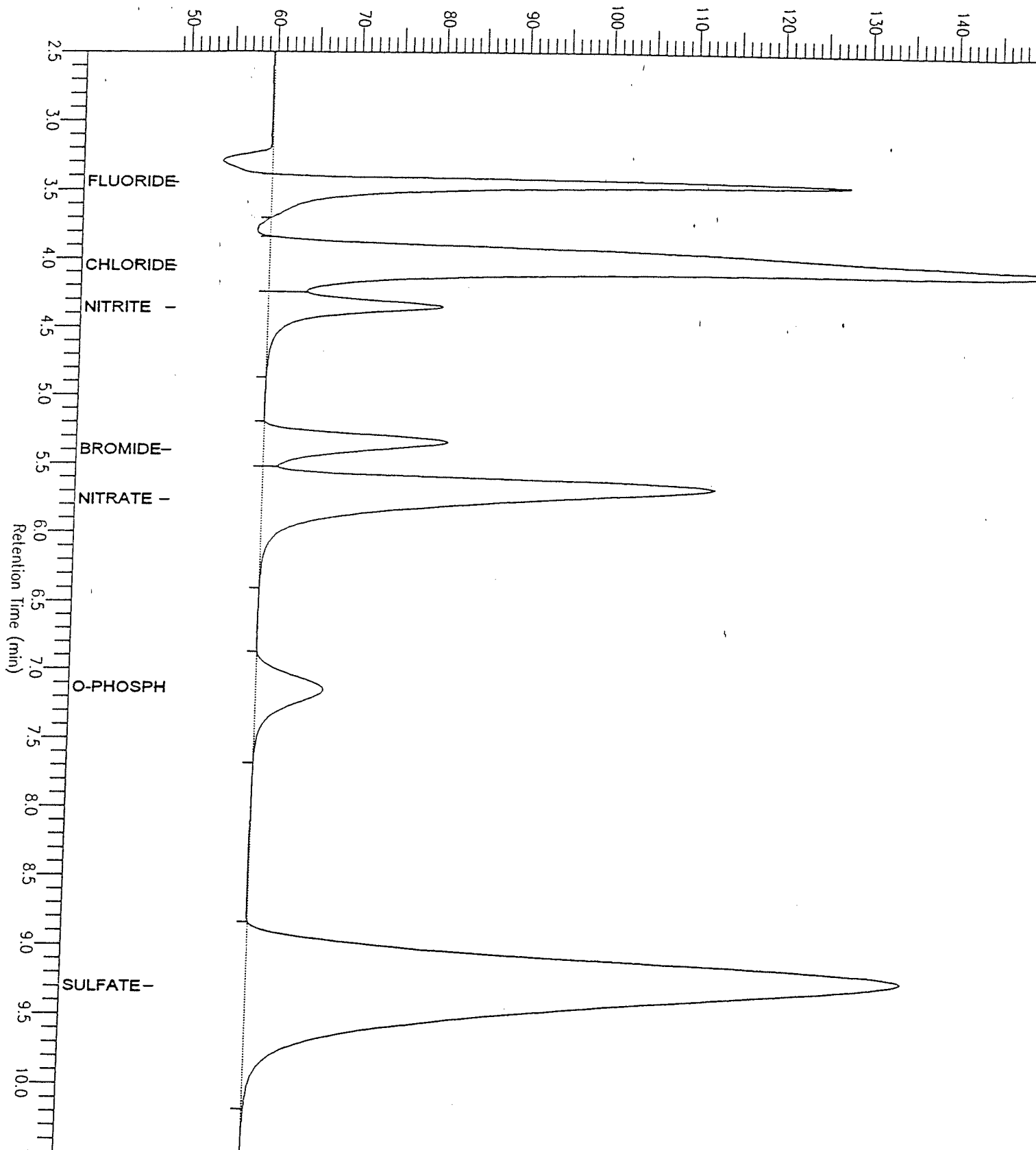
Standard Anions by IC

Sample Name : CCV
FileName : C:\TC4\DATA\JUL\0710018.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 18
Date : 7/10/96 02:18 PM
Time of Injection: 7/10/96 02:09 PM
Low Point : 48.86 mV
Plot Scale: 105.7 mV
Page 1 of 1
High Point : 154.53 mV

Response (mV)



002584

Software Version: 4.0<1C29>

Date: 7/10/96 02:28 PM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0710019.RAW Date: 7/10/96 02:19 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 19 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
---------------	-------------------	---------	-------

=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.06	0.00	0.000	-----	0.000
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.77	0.00	0.000	-----	0.000
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.30	0.00	0.000	-----	0.000

=====

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

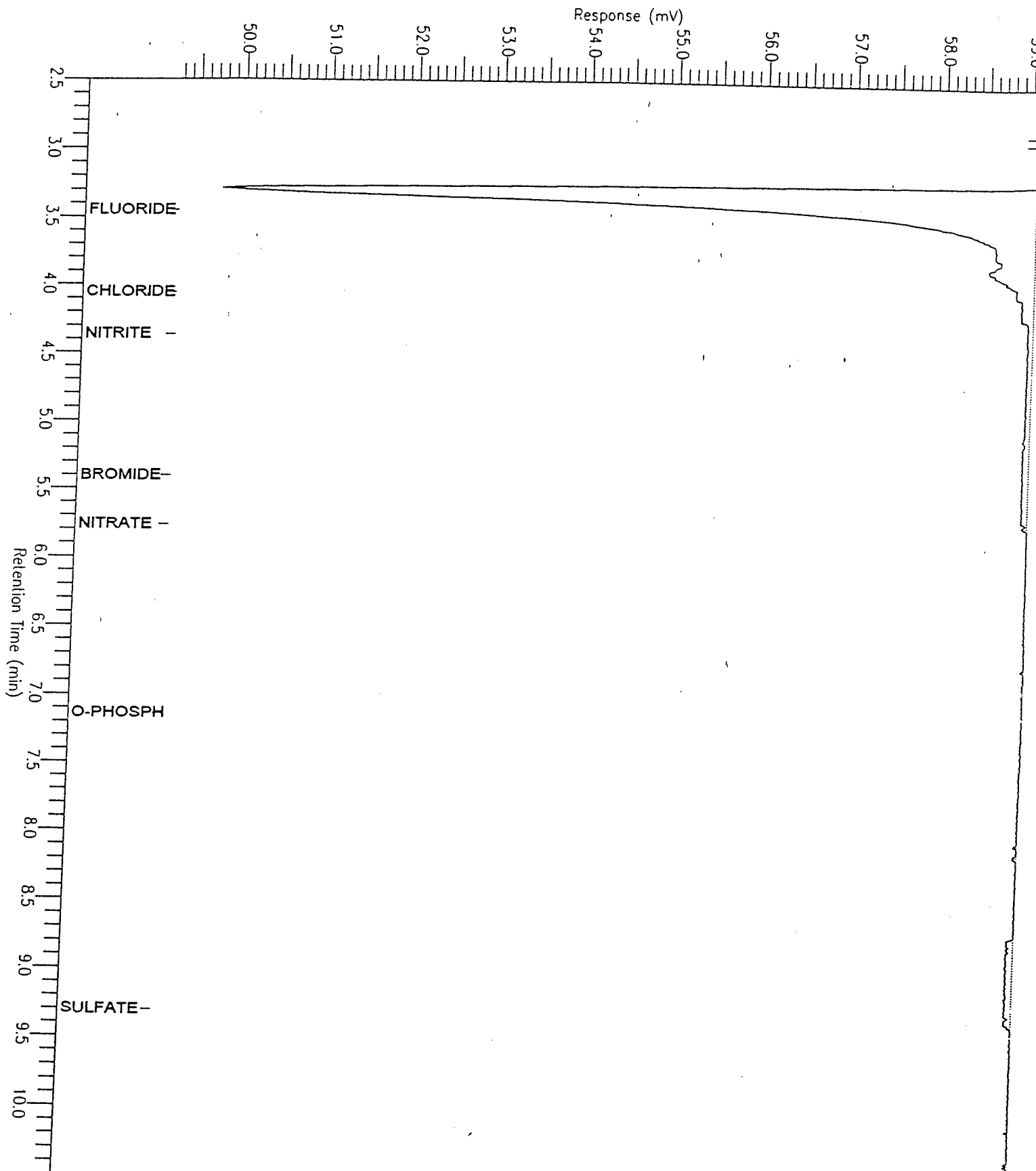
Report stored in ASCII file: C:\TC4\DATA\JUL\0710019.TX0

Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0710019.raw
Method : 0710
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 19
Date : 7/10/96 02:29 PM
Time of Injection: 7/10/96 02:19 PM
Low Point : 49.28 mV
Plot Scale: 10.2 mV
Page 1 of 1
High Point : 59.47 mV



002586

Software Version: 4.0<1C29>

Date: 7/10/96 02:39 PM

Sample Name : 9607164*3

Data File : C:\TC4\DATA\JUL\0710020.RAW Date: 7/10/96 02:30 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 20 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

Version Kyoko

Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000		0.000
Chloride	4.09	936677.50	18.259	10.00	182.587
Nitrite	4.37	0.00	0.000		0.000
Bromide	5.41	0.00	0.000		0.000
Nitrate	5.79	62005.50	2.752	10.00	27.518
o-Phosphate	7.14	0.00	0.000		0.000
Sulfate	9.37	655445.00	17.819	10.00	178.190

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0710020.TX0

002587

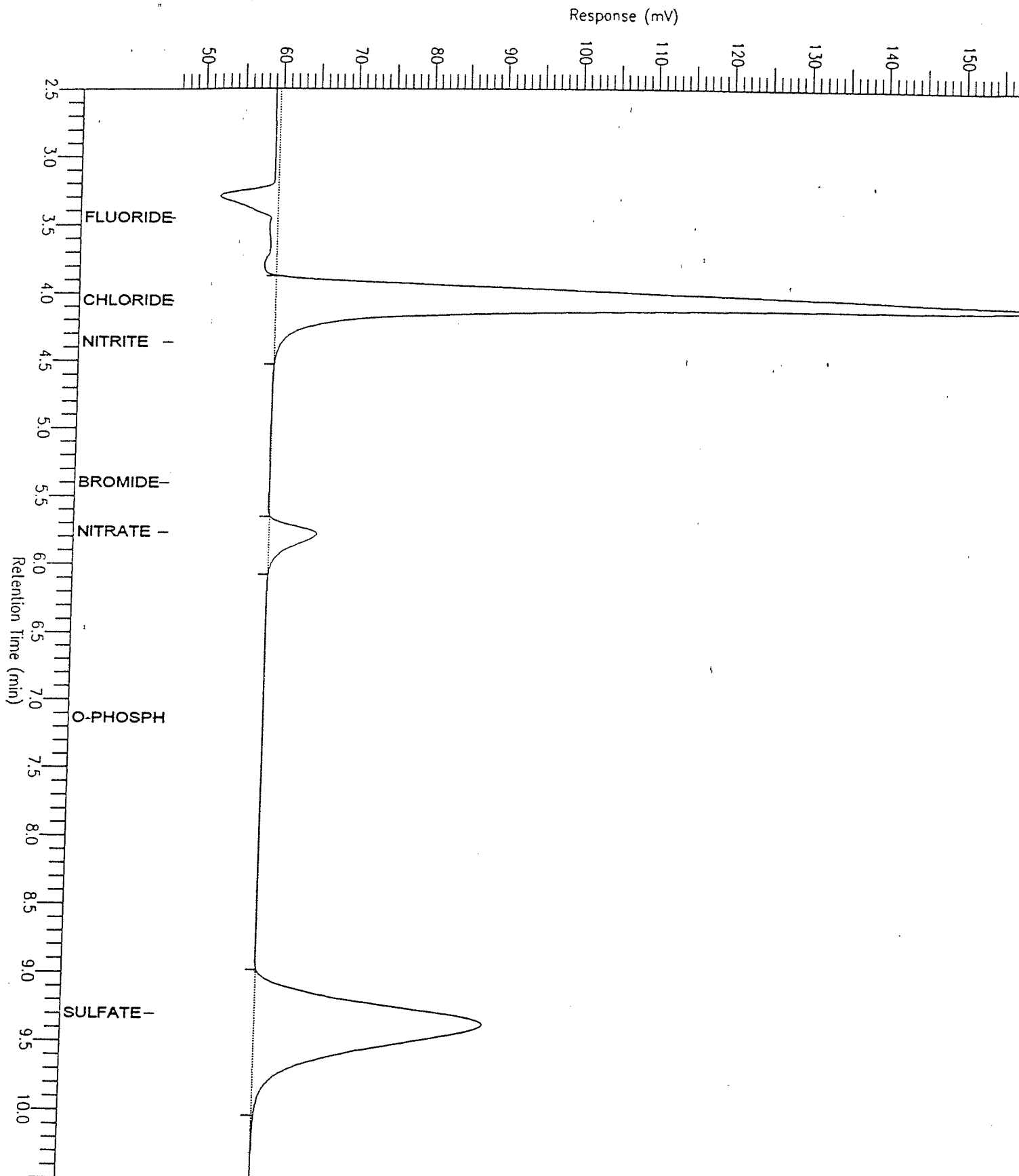
Standard Anions by IC

Sample Name : 9607164*3
FileName : C:\JC4\DATA\JUL\0710020.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 46 mV

Sample #: 20
Date : 7/10/96 02:39 PM
Time of Injection: 7/10/96 02:30 PM
Low Point : 46.43 mV
Plot Scale: 117.2 mV
High Point : 163.59 mV

Page 1 of 1



002588

Software Version: 4.0<1C29>

Date: 7/10/96 02:49 PM

Sample Name : 9607164*3

Data File : C:\TC4\DATA\JUL\0710021.RAW Date: 7/10/96 02:40 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 21 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
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=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.05	347309.00	7.027	25.00	175.670
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.81	25099.00	1.436	25.00	35.910
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.45	251818.00	7.428	25.00	185.693

=====

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Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

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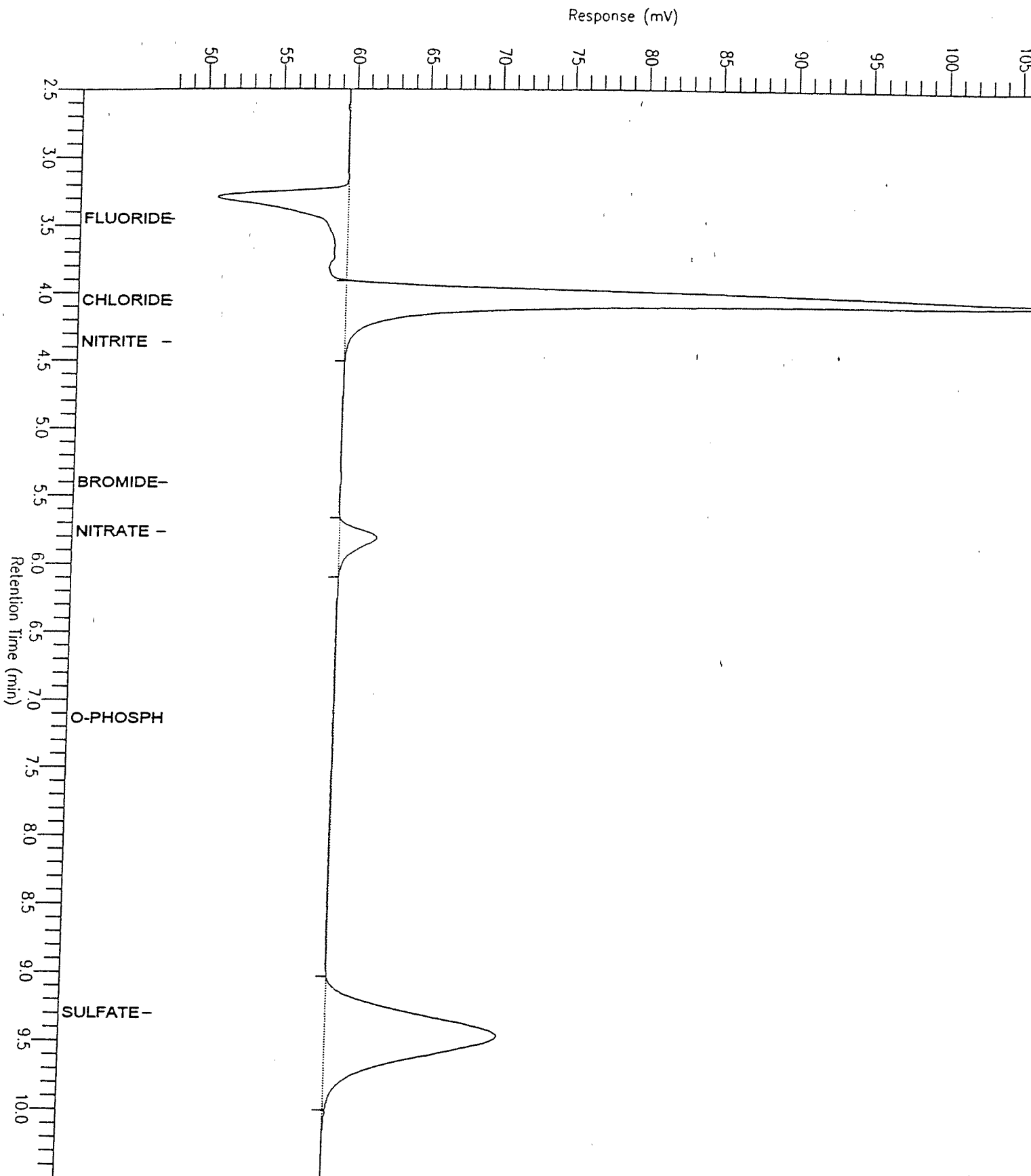
Report stored in ASCII file: C:\TC4\DATA\JUL\0710021.TX0

Standard Anions by IC

Sample Name : 9607164*3
FileName : C:\JC4\DATA\JUL\0710021.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 48 mV

Sample #: 21
Date : 7/10/96 02:49 PM
Time of Injection: 7/10/96 02:40 PM
Low Point : 47.87 mV
Plot Scale: 60.4 mV
Page 1 of 1
High Point : 108.23 mV



002590

Software Version: 4.0<1C29>

Date: 7/10/96 03:11 PM

Sample Name : 9607164*4

Data File : C:\TC4\DATA\JUL\0710022.RAW Date: 7/10/96 03:02 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 22 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000

Dilution Factor : 1.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
---------------	-------------------	---------	-------

=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	147476.50	2.300	1.00	2.300
Chloride	4.08	5452297.00	104.282	1.00	104.282
Nitrite	4.32	1335770.50	38.169	1.00	38.169
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.79	65770.50	2.886	1.00	2.886
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.15	2469065.50	64.510	1.00	64.510

=====

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710022.TX0

002591

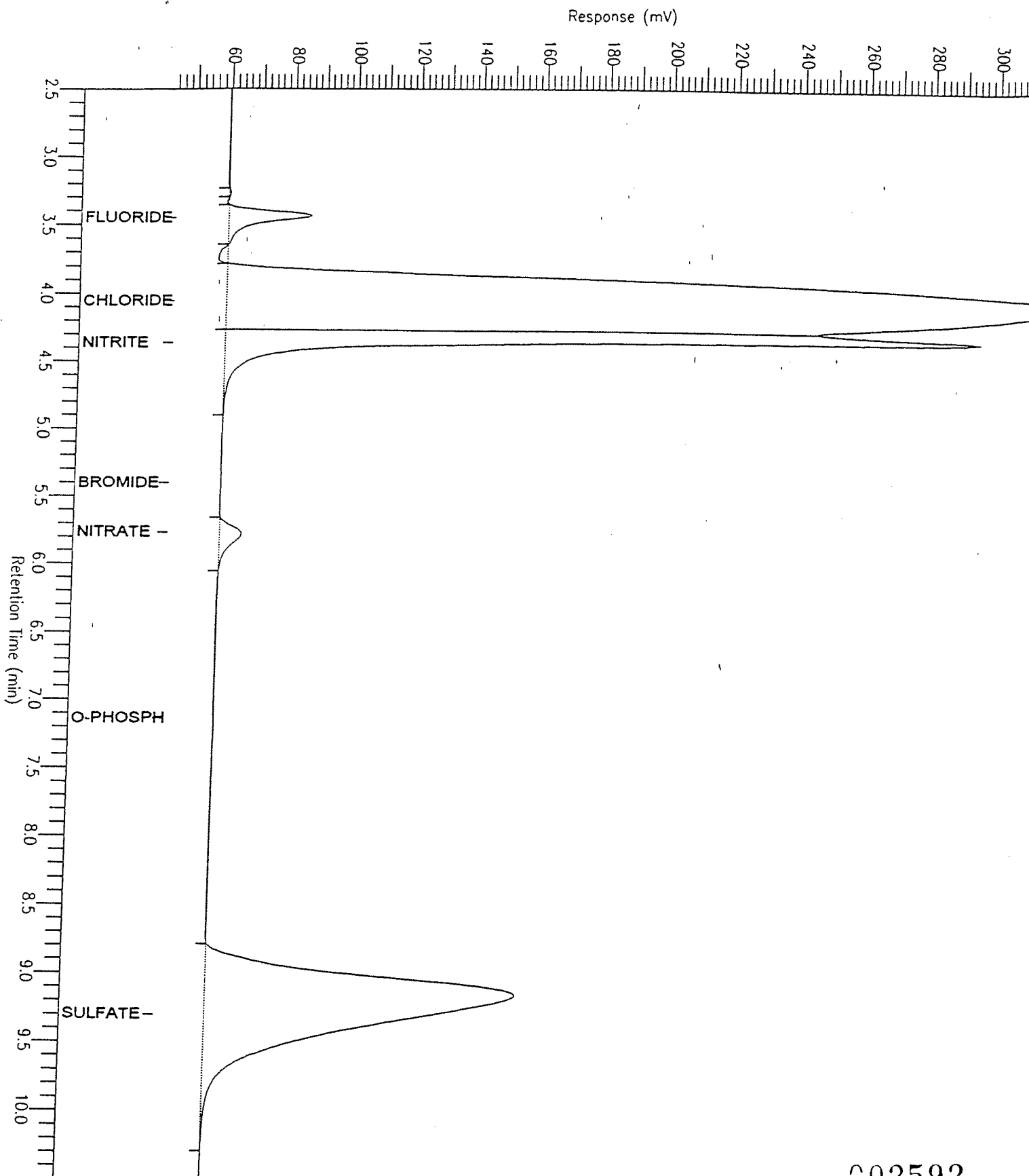
Standard Anions by IC

Sample Name : 9607164*4
FileName : C:\TC4\DATA\JUL\0710022.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 44 mV

Sample #: 22
Date : 7/10/96 03:11 PM
Time of Injection: 7/10/96 03:02 PM
Low Point : 43.79 mV
Plot Scale: 276.1 mV
High Point : 321.90 mV

Page 1 of 1



002592

Software Version: 4.0<1C29>
 Date: 7/10/96 03:22 PM
 Sample Name : 9607164*4
 Data File : C:\TC4\DATA\JUL\0710023.RAW Date: 7/10/96 03:13 PM
 Sequence File: C:\TC4\0710.SEQ Cycle: 23 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	2056.50	0.217	10.00	2.174
Chloride	4.07	562299.00	11.123	10.00	111.226
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.84	6014.00	0.756	10.00	7.562
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.45	212287.50	6.410	10.00	64.100

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

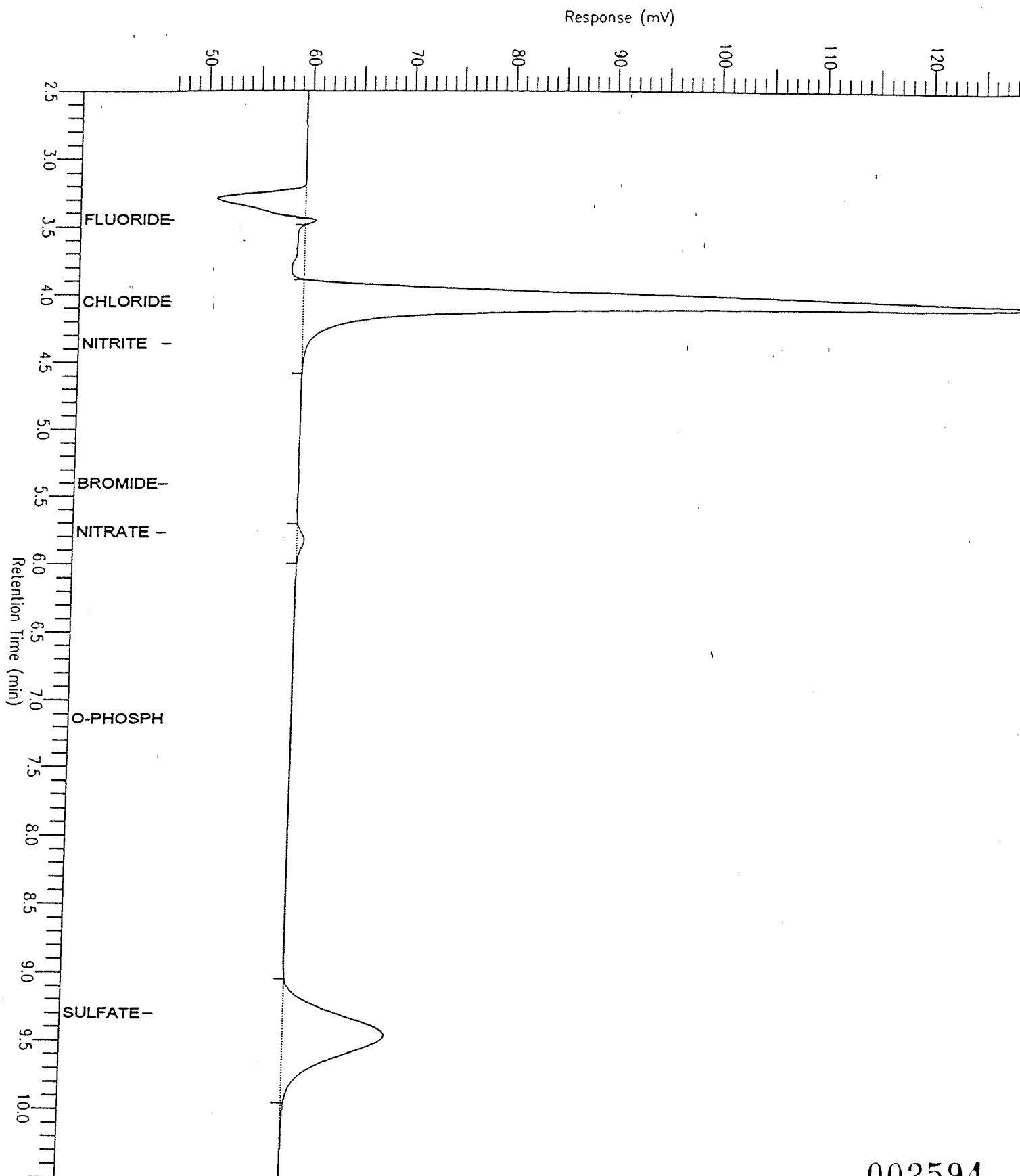
Report stored in ASCII file: C:\TC4\DATA\JUL\0710023.TX0

Standard Anions by IC

Sample Name : 9607164*4
FileName : C:\TC4\DATA\JUL\0710023.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 47 mV

Sample #: 23
Date : 7/10/96 03:22 PM
Time of Injection: 7/10/96 03:13 PM
Low Point : 46.78 mV
Plot Scale: 86.2 mV
High Point : 133.01 mV



002594

Software Version: 4.0<1C29>

Date: 7/10/96 03:32 PM

Sample Name : 9607164*4

Data File : C:\TC4\DATA\JUL\0710024.RAW Date: 7/10/96 03:23 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 24 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.04	205284.50	4.321	25.00	108.027
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.77	0.00	0.000	-----	0.000
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.50	82392.00	3.066	25.00	76.648

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710024.TX0

Standard Anions by IC

Sample Name : 9607164*4

FileName : C:\TC4\DATA\JUL\0710024.raw

Method : 0710

Start Time : 2.50 min

Scale Factor: 1.0

End Time : 10.50 min

Plot Offset: 48 mV

Sample #: 24

Date : 7/10/96 03:32 PM

Time of Injection: 7/10/96 03:23 PM

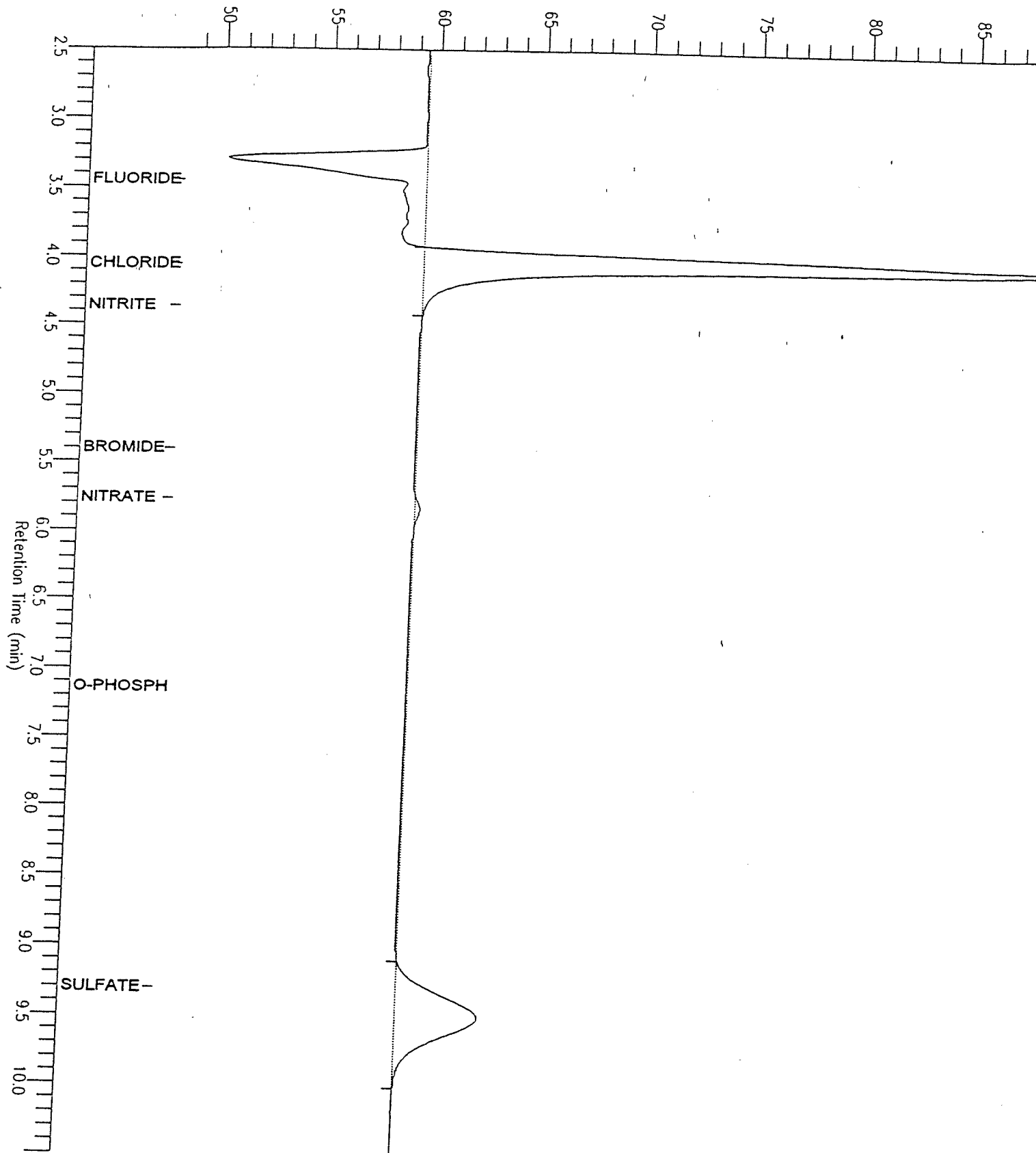
Low Point : 48.22 mV

Plot Scale: 41.7 mV

Page 1 of 1

High Point : 89.69 mV

Response (mV)



002596

Software Version: 4.0<1C29>

Date: 7/10/96 03:43 PM

Sample Name : 9607164*5

Data File : C:\TC4\DATA\JUL\0710025.RAW Date: 7/10/96 03:34 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 25 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.43	36800.00	0.715	1.00	0.715
Chloride	4.04	7182019.50	137.235	1.00	137.235
Nitrite	4.32	1493674.00	42.672	1.00	42.672
Bromide	5.40	333.00	0.102	1.00	0.102
Nitrate	5.79	31242.00	1.655	1.00	1.655
o-Phosphate	7.14	0.00	0.000	1.00	0.000
Sulfate	9.19	1884807.50	49.468	1.00	49.468

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710025.TX0

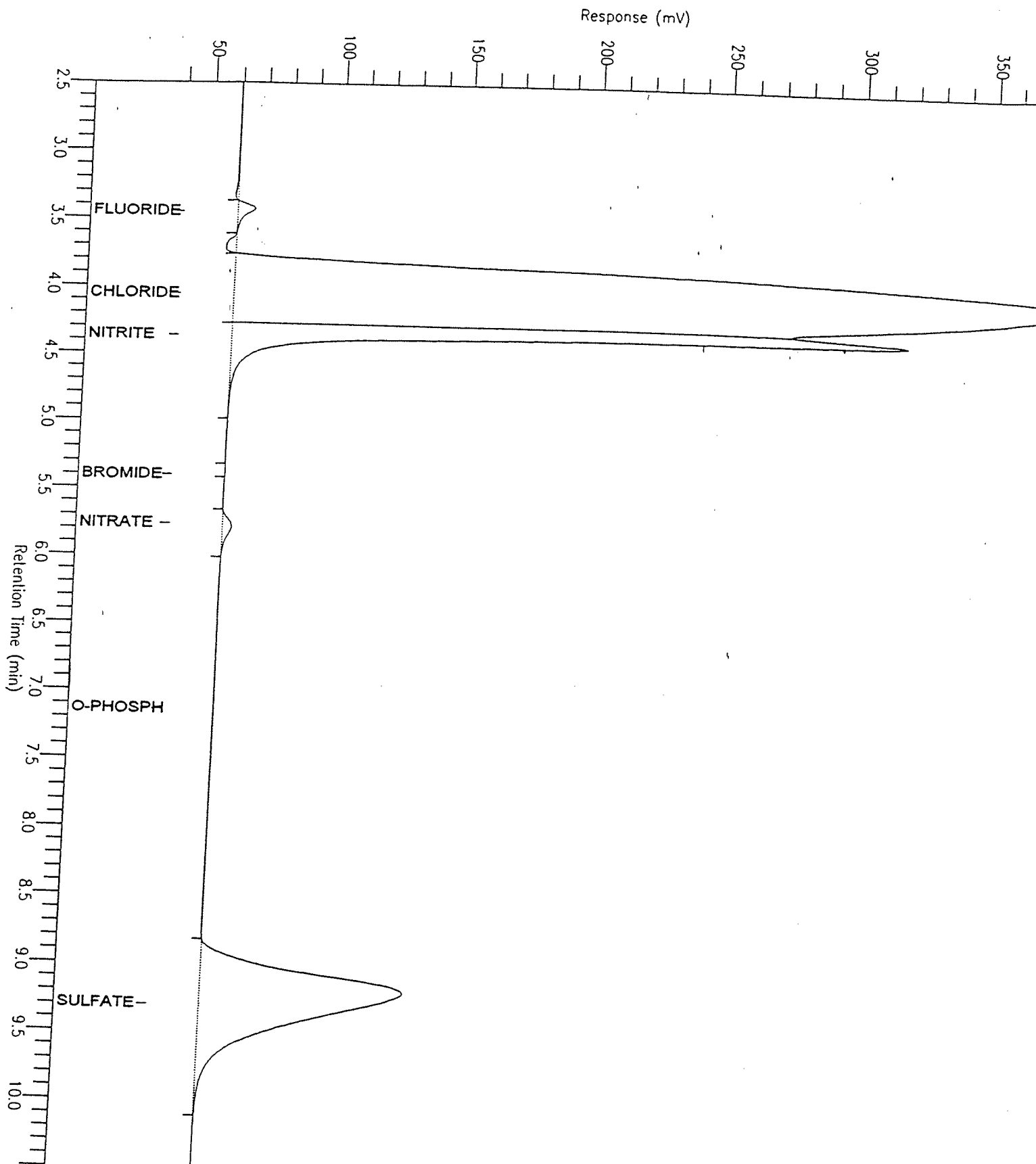
Standard Anions by IC

Sample Name : 9607164*5
FileName : C:\TC4\DATA\JUL\0710025.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 40 mV

Sample #: 25
Date : 7/10/96 03:43 PM
Time of Injection: 7/10/96 03:34 PM
Low Point : 39.91 mV
Plot Scale: 341.2 mV
High Point : 361.10 mV

Page 1 of 1



002598

Software Version: 4.0<1C29>

Date: 7/10/96 03:53 PM

Sample Name : 9607164*5

Data File : C:\TC4\DATA\JUL\0710026.RAW Date: 7/10/96 03:44 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 26 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

Version Kyoko

Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000		0.000
Chloride	4.08	723803.00	14.199	10.00	141.994
Nitrite	4.37	0.00	0.000		0.000
Bromide	5.41	0.00	0.000		0.000
Nitrate	5.84	2618.00	0.635	10.00	6.351
o-Phosphate	7.14	0.00	0.000		0.000
Sulfate	9.46	164885.50	5.190	10.00	51.897

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

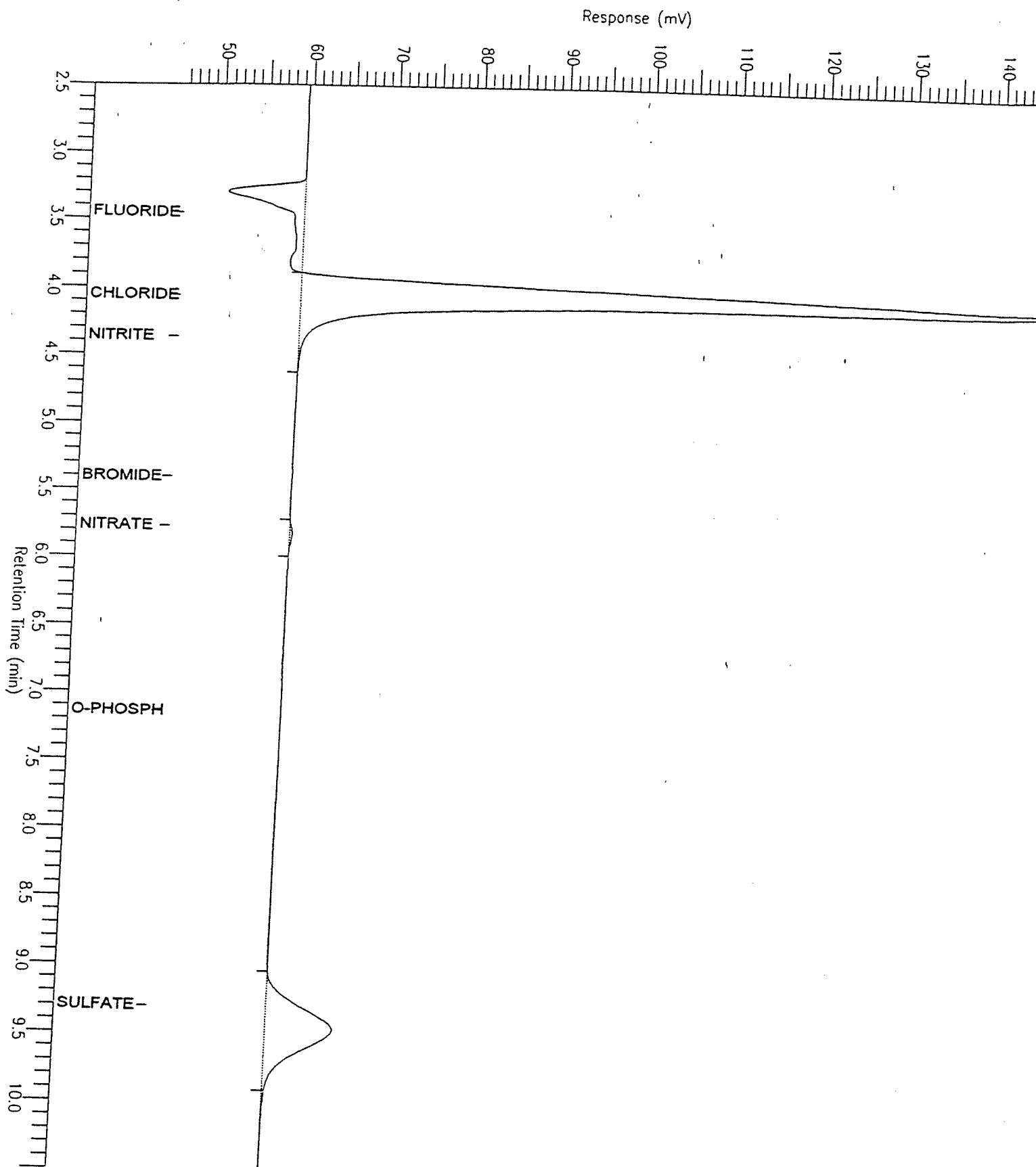
Report stored in ASCII file: C:\TC4\DATA\JUL\0710026.TX0

Standard Anions by IC

Sample Name : 9607164*5
FileName : C:\TC4\DATA\JUL\0710026.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 46 mV

Sample #: 26
Date : 7/10/96 03:54 PM
Time of Injection: 7/10/96 03:44 PM
Low Point : 45.85 mV
Plot Scale: 102.9 mV
Page 1 of 1
High Point : 148.75 mV



002600

Software Version: 4.0<1C29>

Date: 7/10/96 04:04 PM

Sample Name : 9607164*5

Data File : C:\TC4\DATA\JUL\0710027.RAW Date: 7/10/96 03:55 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 27 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.04	261851.00	5.399	25.00	134.968
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.80	1523.00	0.596	25.00	14.903
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.49	64469.00	2.604	25.00	65.112

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710027.TX0

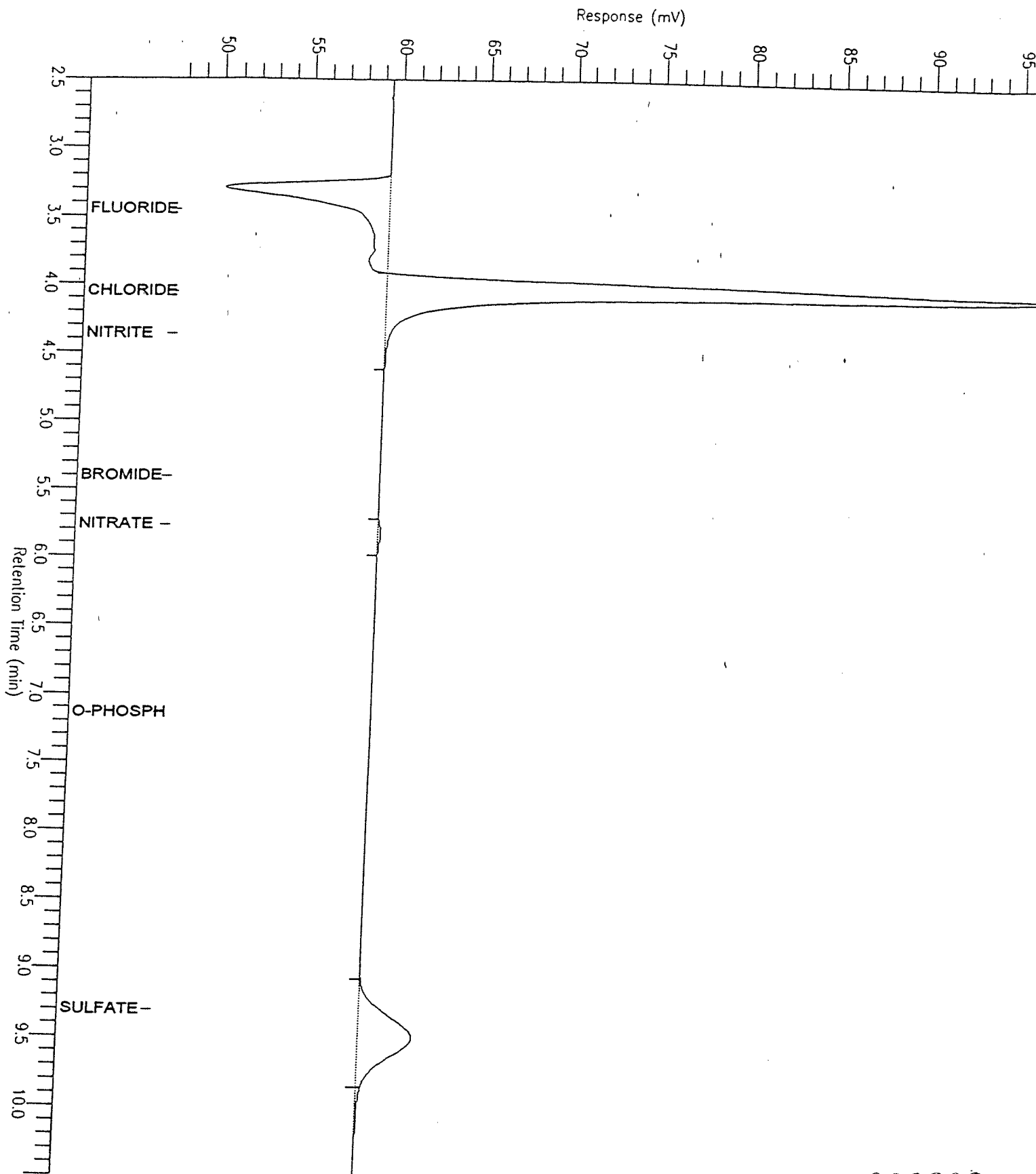
002601

Standard Anions by IC

Sample Name : 9607164*5
FileName : C:\TC4\DATA\JUL\0710027.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 48 mV

Sample #: 27
Date : 7/10/96 04:04 PM
Time of Injection: 7/10/96 03:55 PM
Low Point : 47.78 mV
Plot Scale: 50.0 mV
Page 1 of 1
High Point : 97.78 mV



002602

Software Version: 4.0<1C29>

Date: 7/10/96 04:14 PM

Sample Name : 9607164*6*R1

Data File : C:\TC4\DATA\JUL\0710028.RAW Date: 7/10/96 04:05 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 28 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	126274.00	1.996	1.00	1.996
Chloride	4.16	2232542.50	42.942	1.00	42.942 D.R. See 1:10
Nitrite	4.37	0.00	0.000		0.000
Bromide	5.41	0.00	0.000		0.000
Nitrate	5.76	73726.50	3.170	1.00	3.170
o-Phosphate	7.14	0.00	0.000		0.000
Sulfate	9.10	2783296.50	72.600	1.00	72.600 Spk > 40 : See 1:10

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0710028.TX0

002603

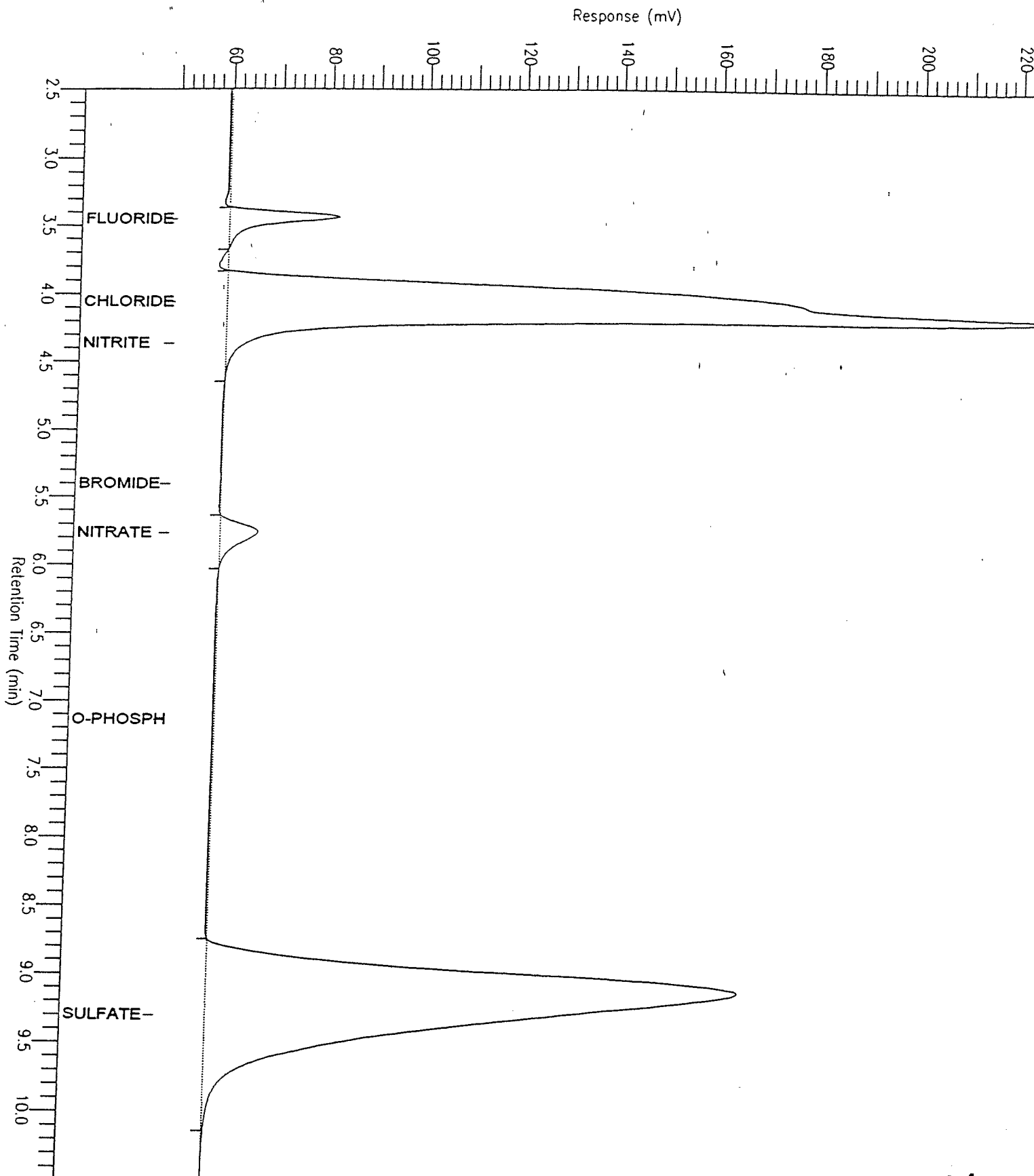
Standard Anions by IC

Sample Name : 9607164-6-R1
FileName : C:\TC4\DATA\JUL\0710028.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 28
Date : 7/10/96 04:15 PM
Time of Injection: 7/10/96 04:05 PM
Low Point : 49.44 mV
Plot Scale: 160.7 mV
High Point : 230.10 mV

Page 1 of 1



002604

Software Version: 4.0<1C29>

Date: 7/10/96 04:25 PM

Sample Name : 9607164*6*S1

Data File : C:\TC4\DATA\JUL\0710029.RAW Date: 7/10/96 04:16 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 29 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	474016.00	6.977	1.00	6.977
Chloride	4.17	1172458.50	22.747	1.00	22.747
Nitrite	4.35	102100.50	2.986	1.00	2.986
Bromide	5.33	150015.00	7.878	1.00	7.878
Nitrate	5.65	622261.00	22.721	1.00	22.721
o-Phosphate	7.10	270670.00	28.633	1.00	28.633
Sulfate	8.96	4519986.50	117.310	1.00	117.310

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0710029.TX0

002605

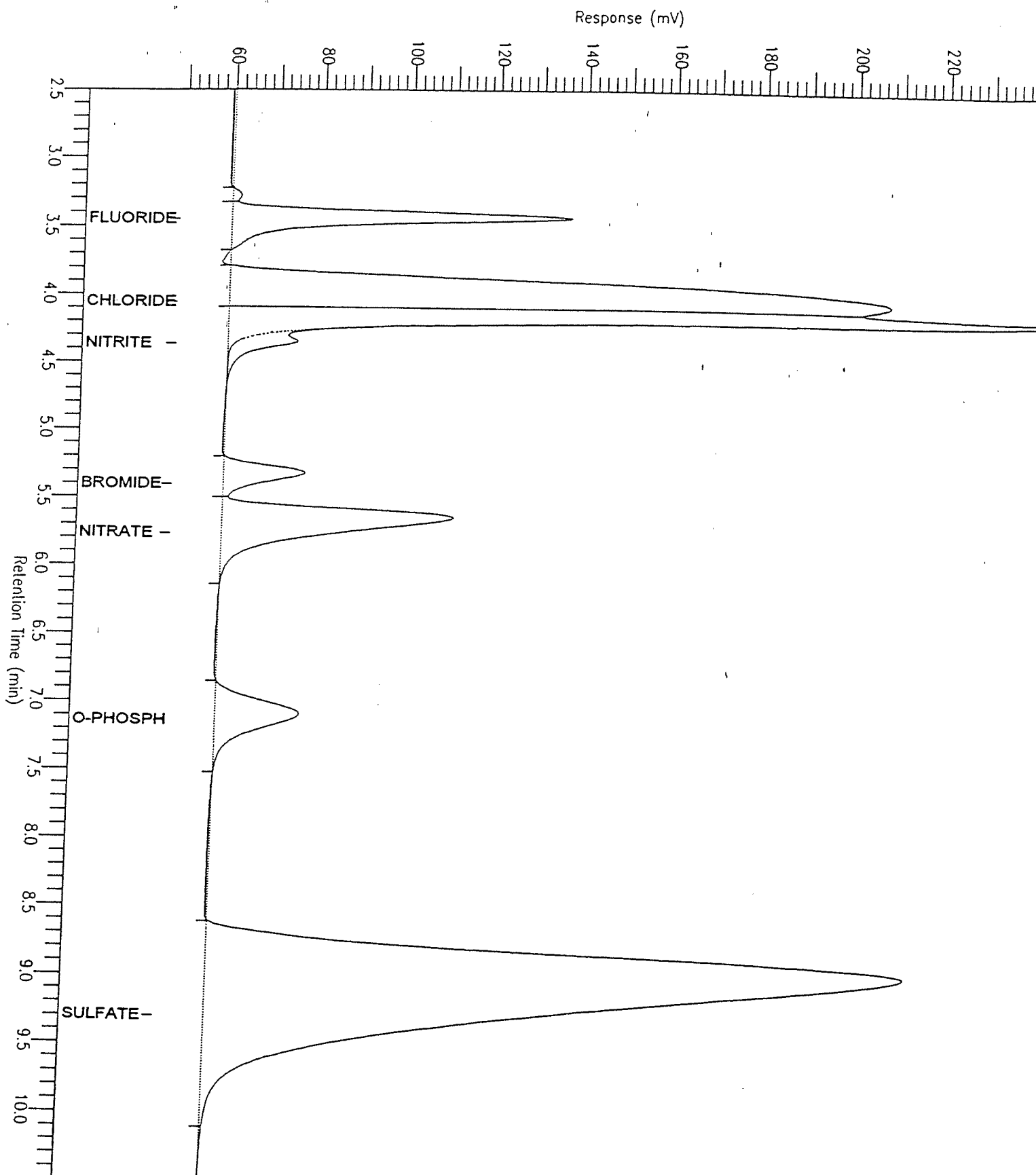
Standard Anions by IC

Sample Name : 9607164*6*S1
FileName : C:\7C4\DATA\JUL\0710029.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 29
Date : 7/10/96 04:25 PM
Time of Injection: 7/10/96 04:16 PM
Low Point : 48.62 mV
Plot Scale: 199.3 mV
High Point : 247.94 mV

Page 1 of 1



002606

Software Version: 4.0<1C29>

Date: 7/10/96 04:35 PM

Sample Name : CCV

Data File : C:\TC4\DATA\JUL\0710030.RAW Date: 7/10/96 04:26 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 30 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23

Analyst _____

Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	330574.00	4.922	1.00	4.922
Chloride	4.06	957934.00	18.660	1.00	18.660
Nitrite	4.34	158781.00	4.602	1.00	4.602
Bromide	5.32	180307.50	9.452	1.00	9.452
Nitrate	5.64	652498.50	23.798	1.00	23.798
o-Phosphate	7.14	116765.00	12.457	1.00	12.457
Sulfate	9.19	1831614.00	48.099	1.00	48.099

=====

=====
Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710030.TX0

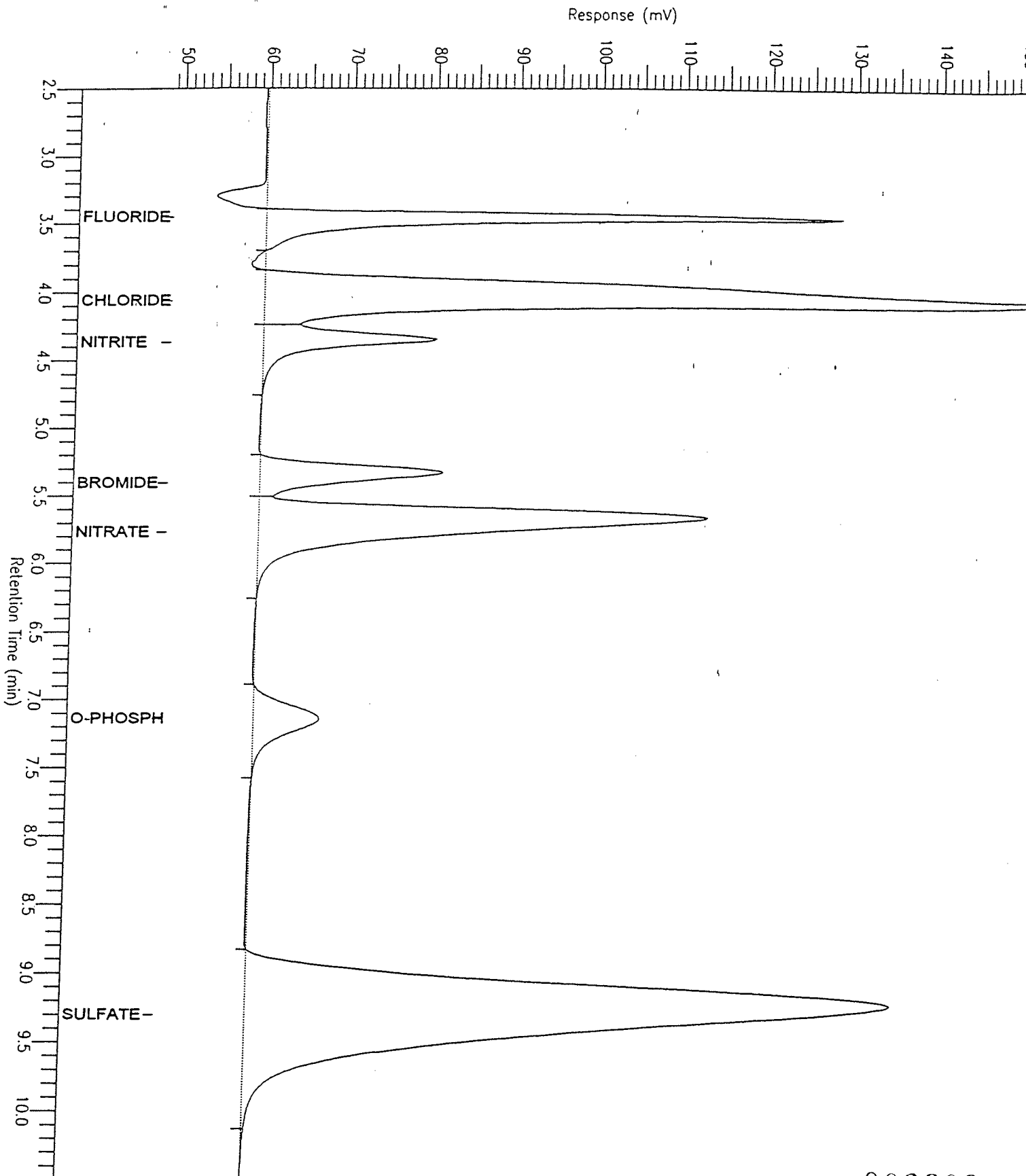
002607

Standard Anions by IC

Sample Name : CCV:
FileName : C:\TC4\DATA\JUL\0710030.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 30
Date : 7/10/96 04:36 PM
Time of Injection: 7/10/96 04:26 PM
Low Point : 48.75 mV
Plot Scale: 106.4 mV
Page 1 of 1
High Point : 155.11 mV



002608

Software Version: 4.0<1C29>

Date: 7/10/96 04:46 PM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0710031.RAW Date: 7/10/96 04:37 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 31 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
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=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.06	0.00	0.000	-----	0.000
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.77	0.00	0.000	-----	0.000
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.30	0.00	0.000	-----	0.000

=====

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

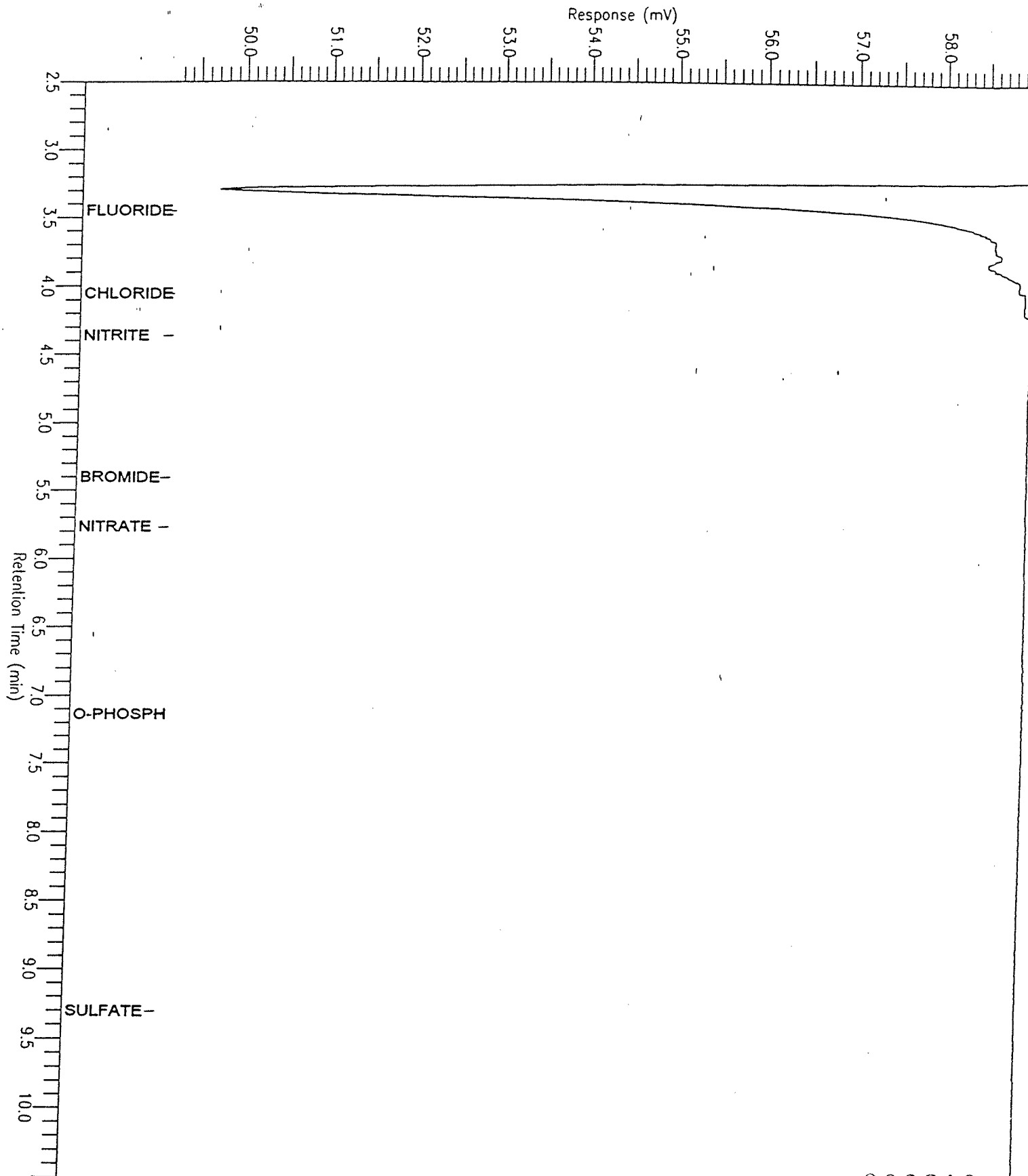
Report stored in ASCII file: C:\TC4\DATA\JUL\0710031.TX0

Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0710031.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 31
Date : 7/10/96 04:46 PM
Time of Injection: 7/10/96 04:37 PM
Low Point : 49.23 mV
Plot Scale: 10.2 mV
High Point : 59.40 mV



002610

Software Version: 4.0<1C29>

Date: 7/10/96 04:56 PM

Sample Name : 9607164*6*S2

Data File : C:\TC4\DATA\JUL\0710032.RAW Date: 7/10/96 04:47 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 32 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	474826.50	6.988	1.00	6.988
Chloride	4.16	1170102.50	22.702	1.00	22.702
Nitrite	4.35	102484.00	2.997	1.00	2.997
Bromide	5.33	150963.00	7.928	1.00	7.928 94% T= 8.00
Nitrate	5.65	625179.50	22.825	1.00	22.825 92% T= 23.2
o-Phosphate	7.09	273094.00	28.888	1.00	28.888 120% T= 24.0
Sulfate	8.96	4520959.50	117.335	1.00	117.335

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0710032.TX0

002611

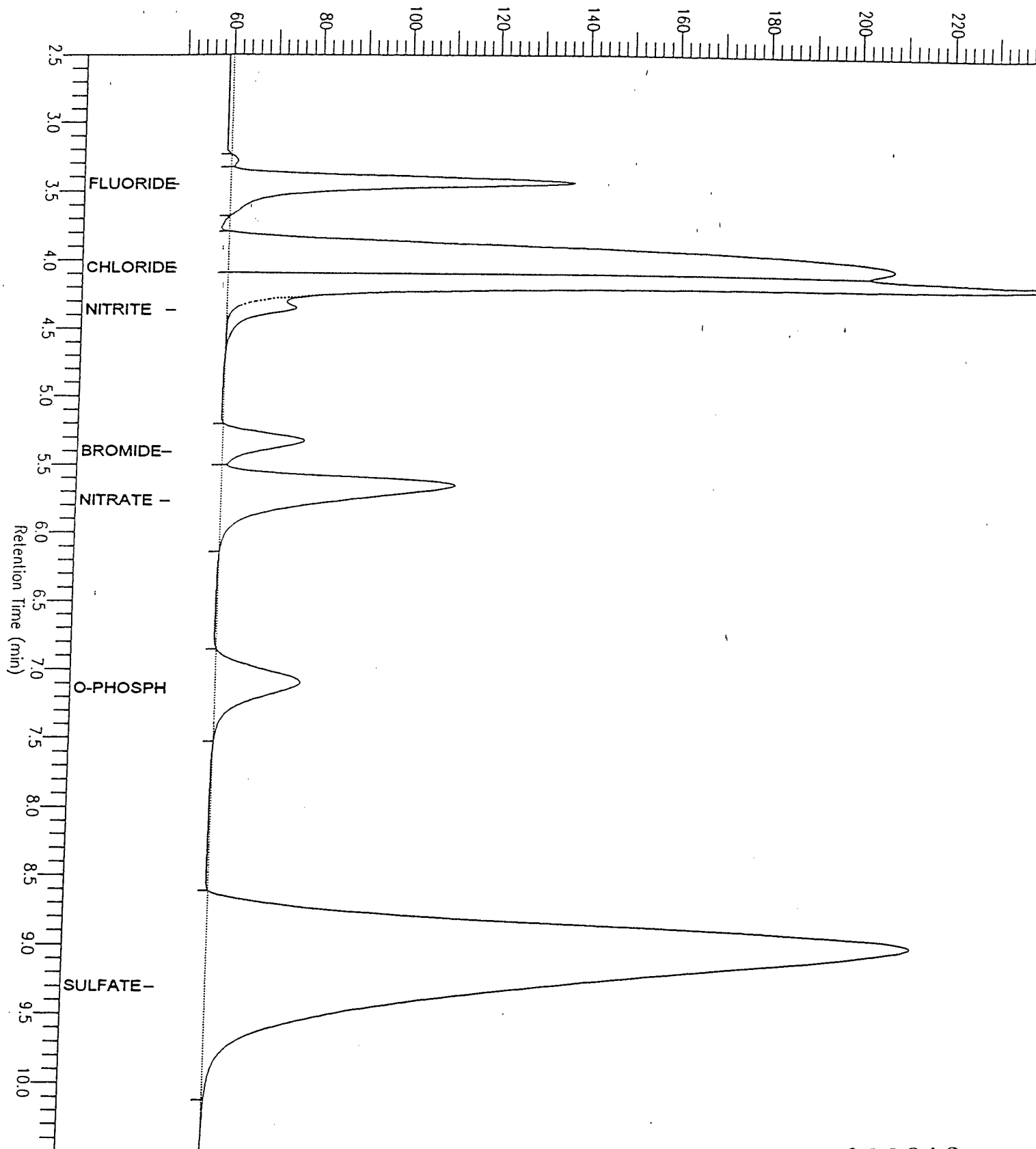
Standard Anions by IC

Sample Name : 9607164*6*S2
FileName : C:\IC4\DATA\JUL\0710032.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 32
Date : 7/10/96 04:57 PM
Time of Injection: 7/10/96 04:47 PM
Low Point : 48.58 mV
Plot Scale: 200.2 mV
Page 1 of 1
High Point : 248.78 mV

Response (mV)



002612

Software Version: 4.0<1C29>

Date: 7/10/96 05:07 PM

Sample Name : 9607164*6*R1

Data File : C:\TC4\DATA\JUL\0710033.RAW Date: 7/10/96 04:58 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 33 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.03	185502.50	3.944	10.00	39.442
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.81	7234.50	0.800	10.00	7.997
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.43	238839.00	7.094	10.00	70.936

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0710033.TX0

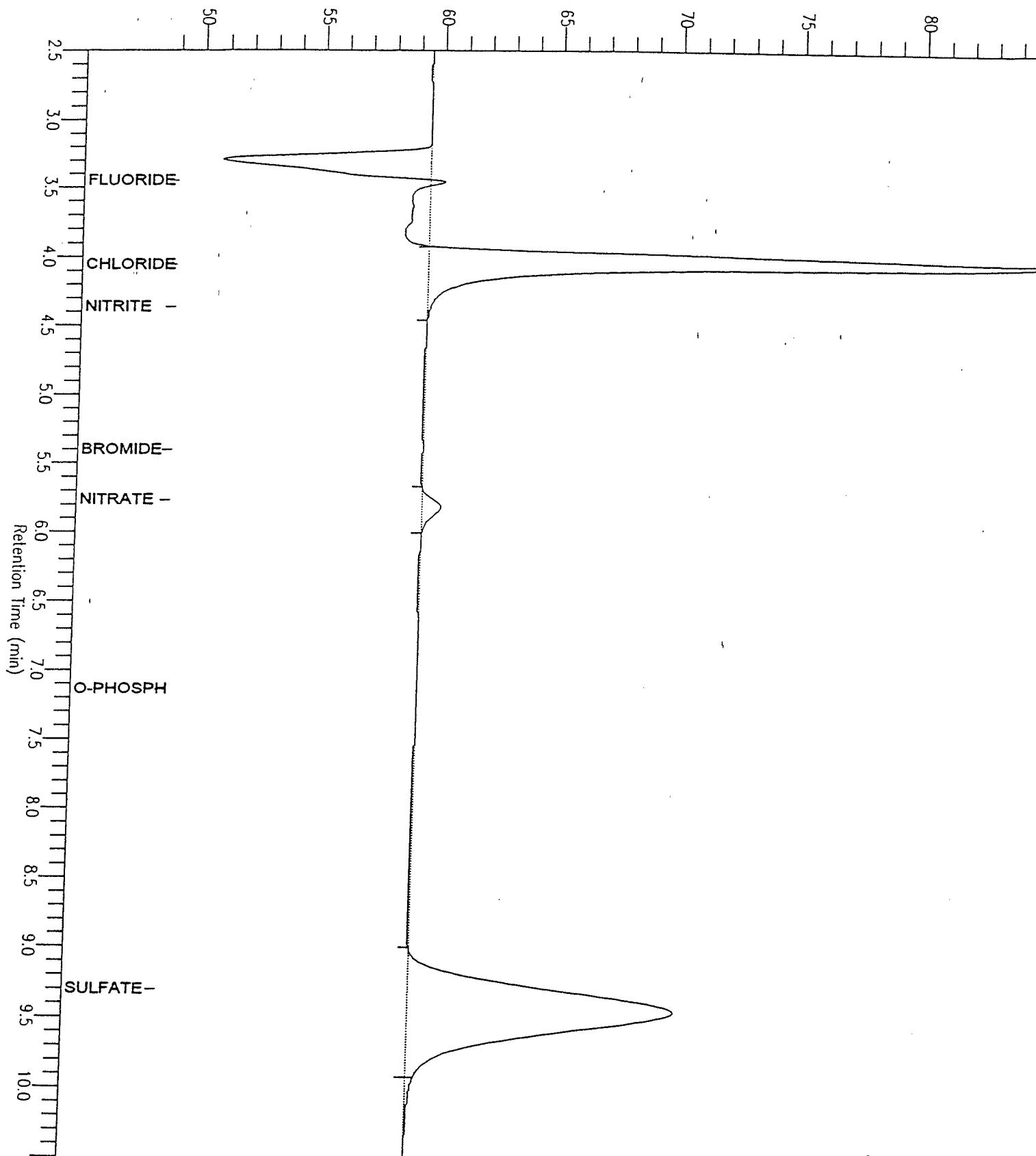
Standard Anions by IC

Sample Name : 9607164*6*R1
FileName : C:\TC4\DATA\JUL\0710033.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 33
Date : 7/10/96 05:07 PM
Time of Injection: 7/10/96 04:58 PM
Low Point : 48.98 mV
Plot Scale: 37.4 mV
Page 1 of 1
High Point : 86.37 mV

Response (mV)



002614

Software Version: 4.0<1C29>

Date: 7/10/96 05:17 PM

Sample Name : 9607164*6*S1

Data File : C:\TC4\DATA\JUL\0710034.RAW Date: 7/10/96 05:08 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 34 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	320922.50	4.784	10.00	47.840 ^{102%}
Chloride	4.05	855546.00	16.709	10.00	167.092 ^{103%}
Nitrite	4.33	74524.50	2.200	10.00	21.995 ^{102%}
Bromide	5.32	155854.00	8.182	10.00	81.817
Nitrate	5.65	547081.00	20.041	10.00	200.410
o-Phosphate	7.11	286284.00	30.274	10.00	302.738
Sulfate	9.19	1817213.00	47.728	10.00	477.283 ^{102%}

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0710034.TX0

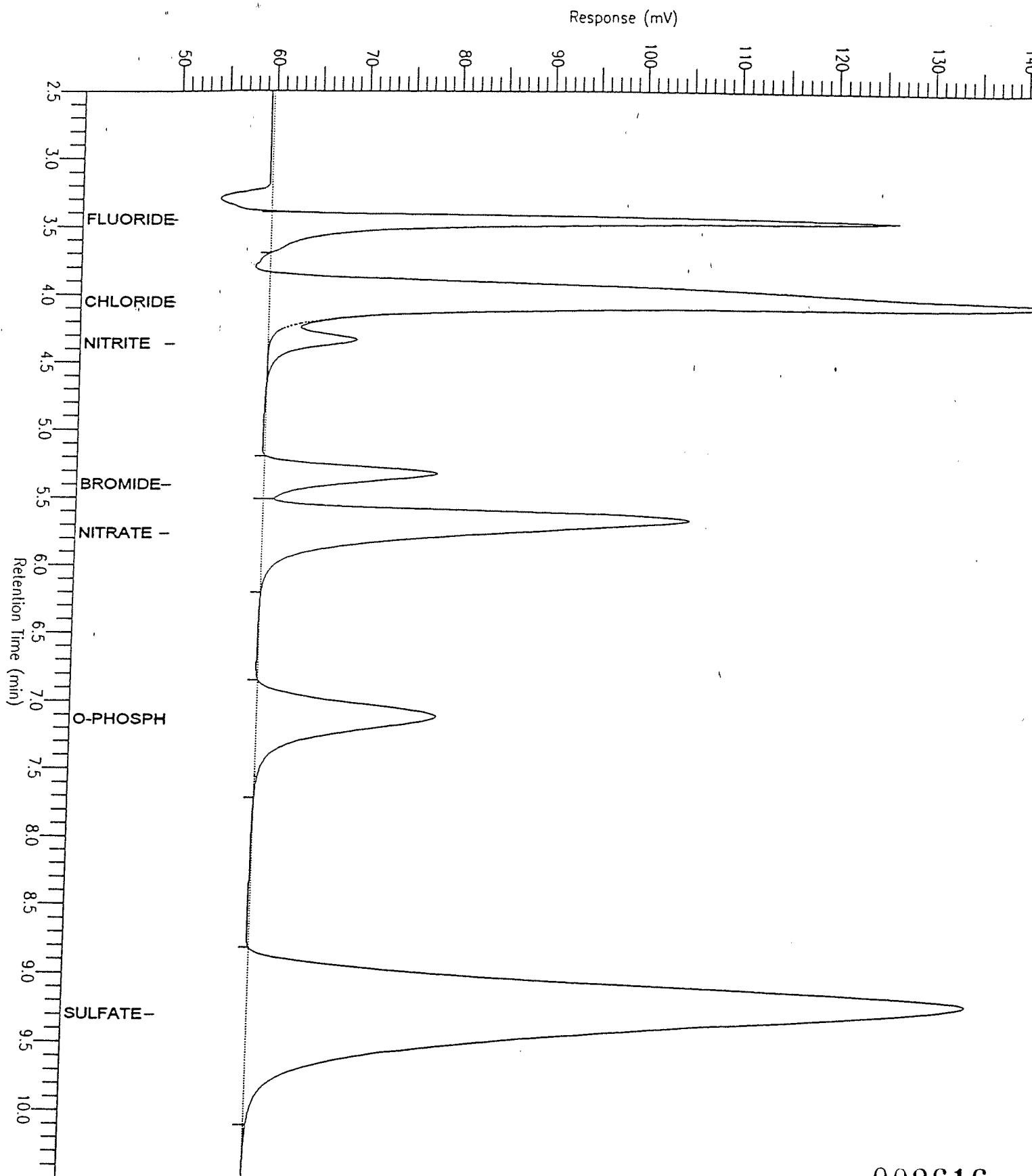
Standard Anions by IC

Sample Name : 9607164-6-S1
FileName : C:\TC4\DATA\JUL\0710034.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 34
Date : 7/10/96 05:18 PM
Time of Injection: 7/10/96 05:08 PM
Low Point : 49.77 mV
Plot Scale: 94.6 mV
High Point : 144.37 mV

Page 1 of 1



002616

Software Version: 4.0<1C29>
 Date: 7/10/96 05:28 PM
 Sample Name : 9607164*6*S2
 Data File : C:\TC4\DATA\JUL\0710035.RAW Date: 7/10/96 05:19 PM
 Sequence File: C:\TC4\0710.SEQ Cycle: 35 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

Version Kyoko		Instrument 533-23		Analyst		Batch	
Component	Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc	
Fluoride		3.45	321307.00	4.790	10.00	47.896	
Chloride		4.05	856095.00	16.720	10.00	167.197	100% T=154
Nitrite		4.33	75172.00	2.218	10.00	22.180	87% T=25-c
Bromide		5.32	155599.50	8.169	10.00	81.685	
Nitrate		5.65	545970.50	20.001	10.00	200.014	
o-Phosphate		7.11	285870.00	30.230	10.00	302.303	
Sulfate		9.19	1813390.00	47.630	10.00	476.298	100% T=471

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0710035.TXT

Standard Anions by IC

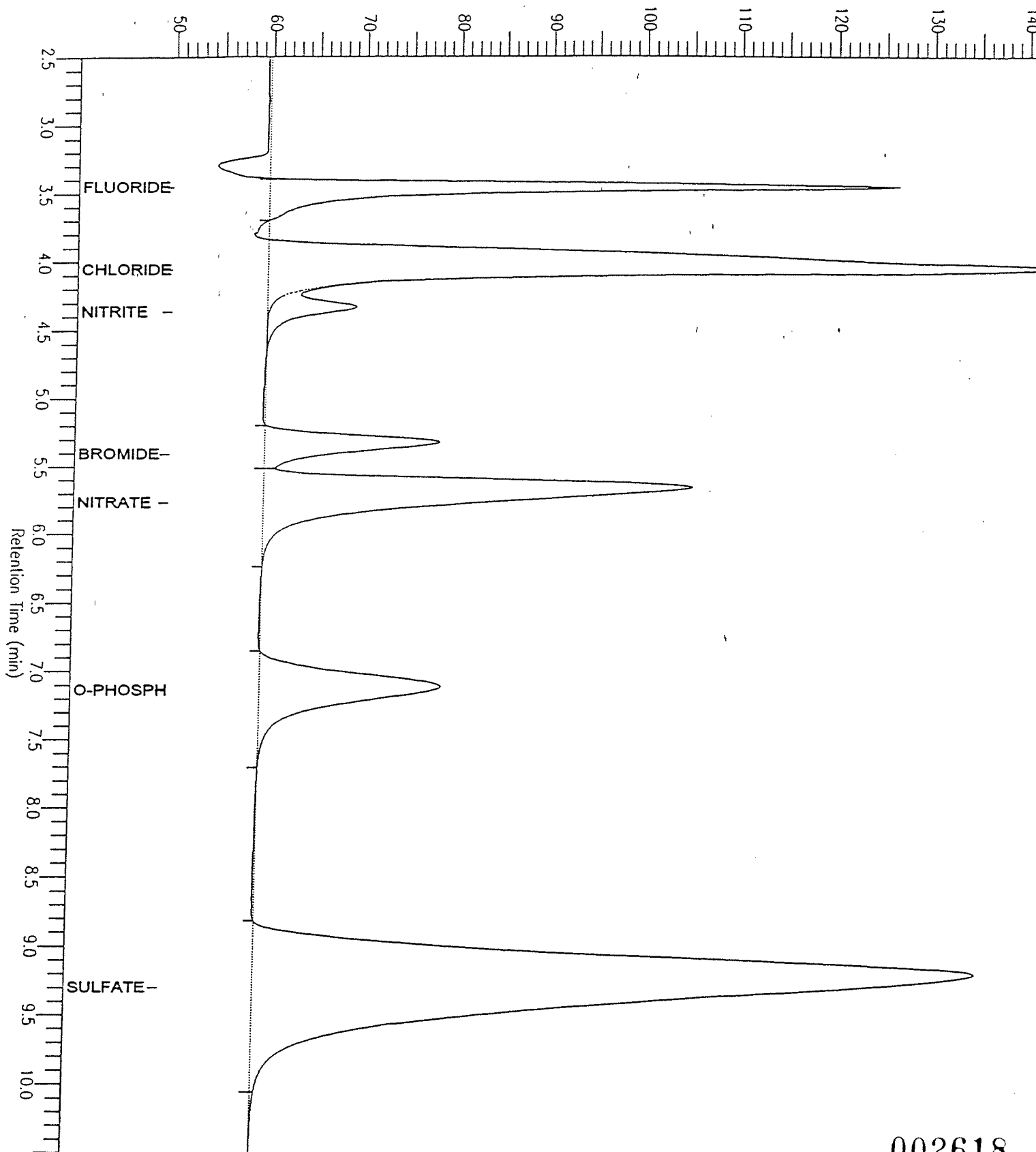
Sample Name : 9607164*6*S2
FileName : C:\TC4\DATA\JUL\0710035.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 35
Date : 7/10/96 05:28 PM
Time of Injection: 7/10/96 05:19 PM
Low Point : 49.77 mV
Plot Scale: 94.5 mV
High Point : 144.25 mV

Page 1 of 1

Response (mV)



002618

Software Version: 4.0<1C29>

Date: 7/10/96 05:39 PM

Sample Name : 9607164*6*R1

Data File : C:\TC4\DATA\JUL\0710036.RAW Date: 7/10/96 05:29 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 36 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.02	69028.50	1.725	25.00	43.131
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.81	2712.00	0.638	25.00	15.962
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.48	92093.50	3.316	25.00	82.892

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0710036.TX0
=====

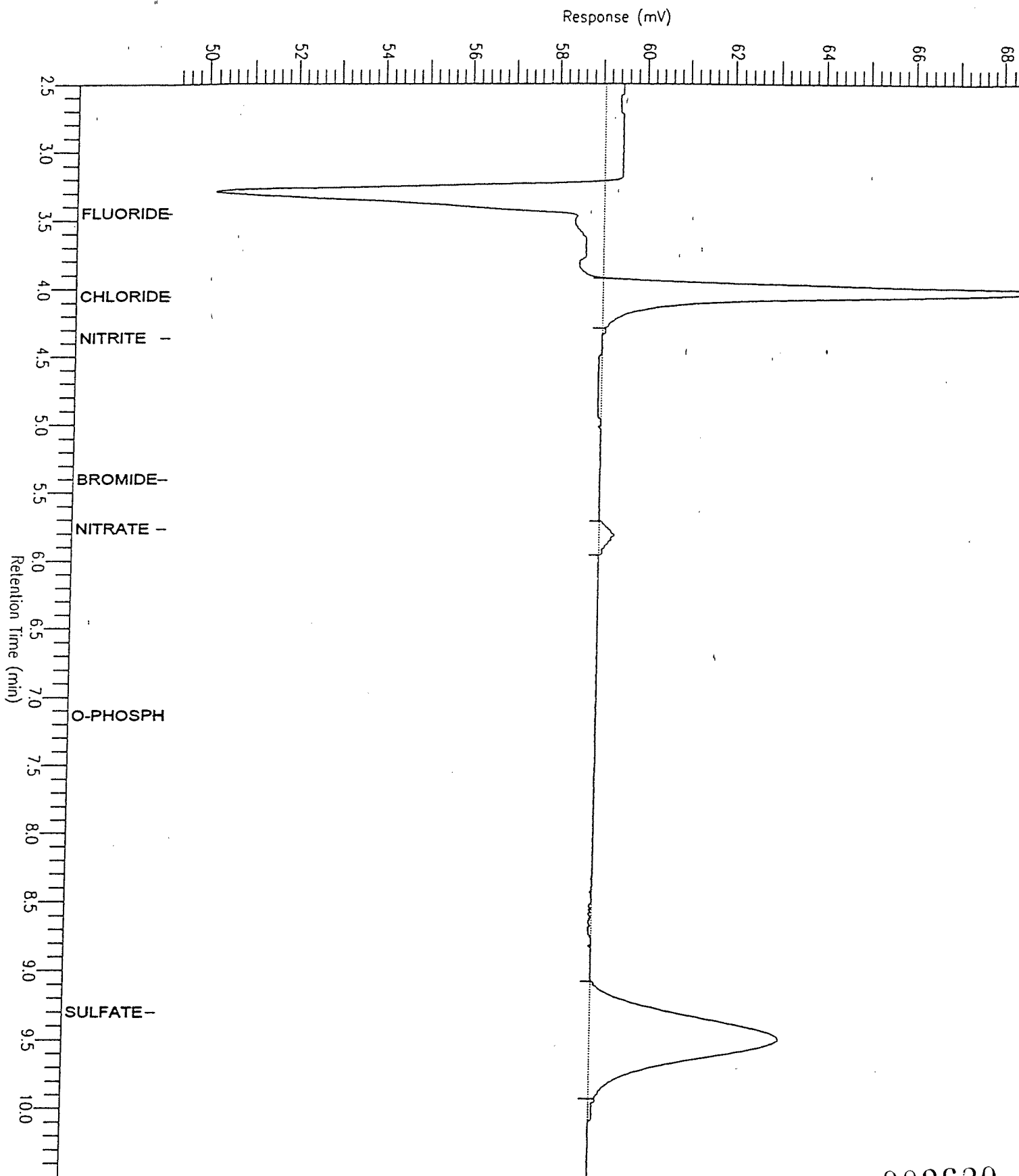
Standard Anions by IC

Sample Name : 9607164*6*R1
FileName : C:\ATC4\DATA\JUL\0710036.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 36
Date : 7/10/96 05:39 PM
Time of Injection: 7/10/96 05:29 PM
Low Point : 49.20 mV
Plot Scale: 20.1 mV
High Point : 69.31 mV

Page 1 of 1



002620

Software Version: 4.0<1C29>

Date: 7/10/96 05:49 PM

Sample Name : 9607164*6*S1

Data File : C:\TC4\DATA\JUL\0710037.RAW Date: 7/10/96 05:40 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 37 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	312956.50	4.670	25.00	116.749
Chloride	4.04	722107.50	14.167	25.00	354.177
Nitrite	4.33	73851.00	2.180	25.00	54.508
Bromide	5.32	155991.50	8.189	25.00	204.722
Nitrate	5.65	541113.00	19.828	25.00	495.706
o-Phosphate	7.11	285104.00	30.150	25.00	753.745
Sulfate	9.21	1633374.00	42.995	25.00	1074.885

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

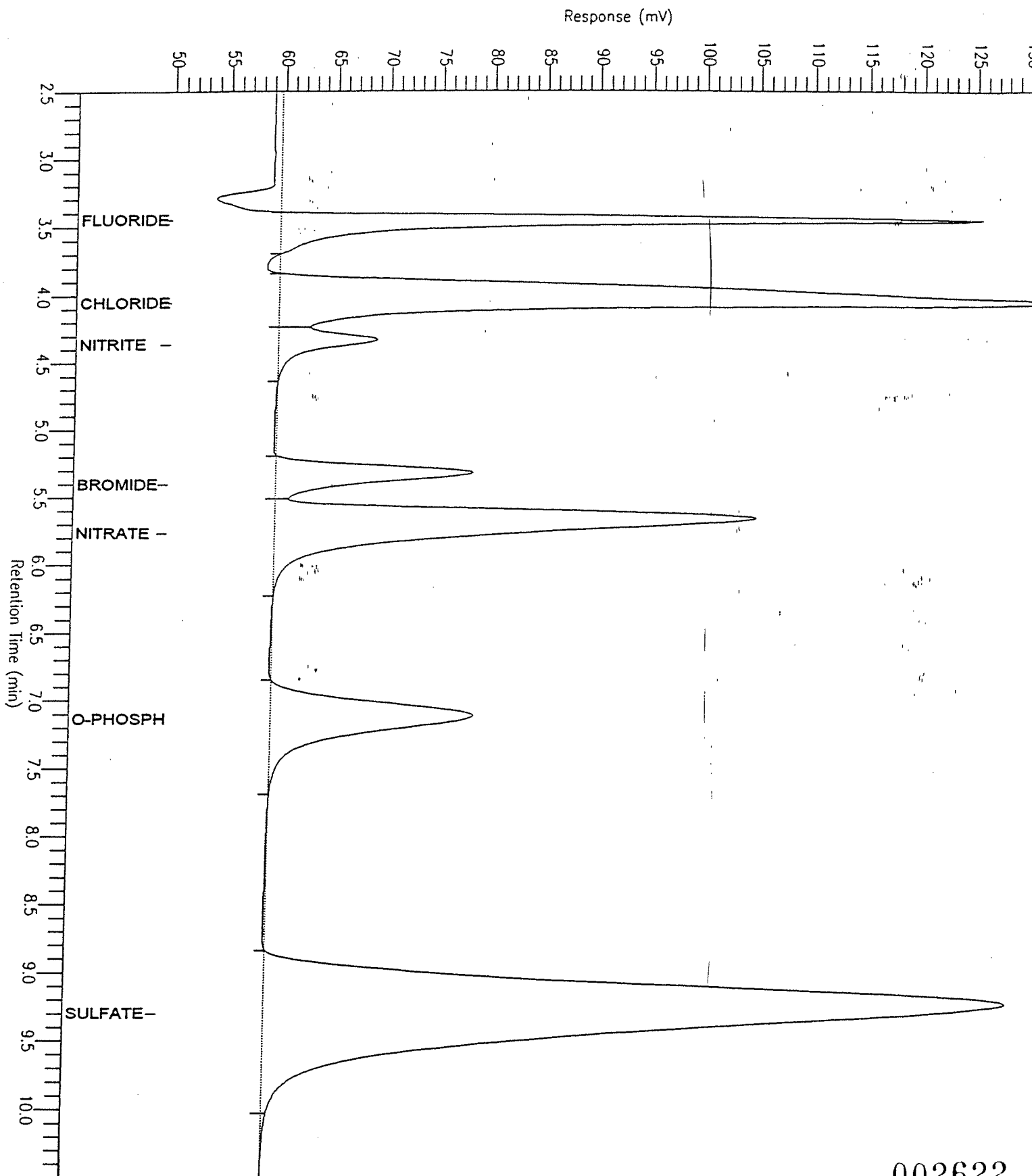
=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0710037.TX0

Standard Anions by IC

Sample Name : 9607164*6*S1
FileName : C:\TC4\DATA\JUL\0710037.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 37
Date : 7/10/96 05:49 PM
Time of Injection: 7/10/96 05:40 PM
Low Point : 49.78 mV
Plot Scale: 83.2 mV
Page 1 of 1
High Point : 133.02 mV



002622

Software Version: 4.0<1C29>

Date: 7/10/96 05:59 PM

Sample Name : 9607164*6*S2

Data File : C:\TC4\DATA\JUL\0710038.RAW Date: 7/10/96 05:50 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 38 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	315548.00	4.707	25.00	117.677
Chloride	4.04	727601.00	14.272	25.00	356.794
Nitrite	4.33	75077.00	2.215	25.00	55.383
Bromide	5.32	157645.00	8.275	25.00	206.870
Nitrate	5.65	545138.00	19.972	25.00	499.292
o-Phosphate	7.12	287763.00	30.429	25.00	760.732
Sulfate	9.21	1637758.00	43.108	25.00	1077.706

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710038.TX0

Standard Anions by IC

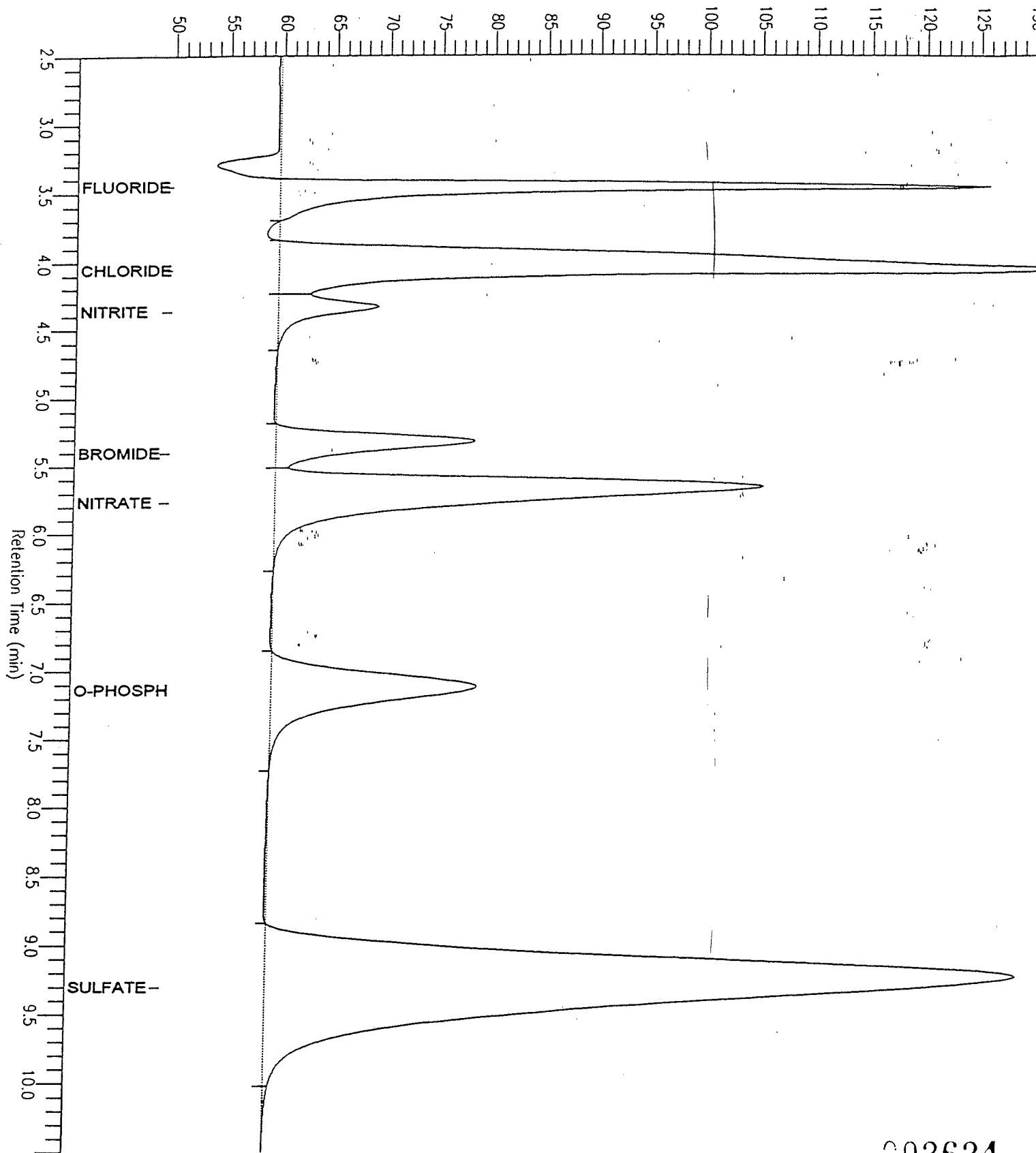
Sample Name : 9607164*6*S2
FileName : C:\TC4\DATA\JUL\0710038.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 38
Date : 7/10/96 06:00 PM
Time of Injection: 7/10/96 05:50 PM
Low Point : 49.81 mV
Plot Scale: 83.4 mV
High Point : 133.23 mV

Page 1 of 1

Response (mV)



002624

Software Version: 4.0<1C29>
 Date: 7/10/96 06:10 PM
 Sample Name : 9607190*1
 Data File : C:\TC4\DATA\JUL\0710039.RAW Date: 7/10/96 06:01 PM
 Sequence File: C:\TC4\0710.SEQ Cycle: 39 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	10295.00	0.335	1.00	0.335
Chloride	4.17	863759.50	16.866	1.00	16.866
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.36	1590.00	0.167	1.00	0.167
Nitrate	5.63	925418.50	33.526	1.00	33.526
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.22	1694223.00	44.562	1.00	44.562

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

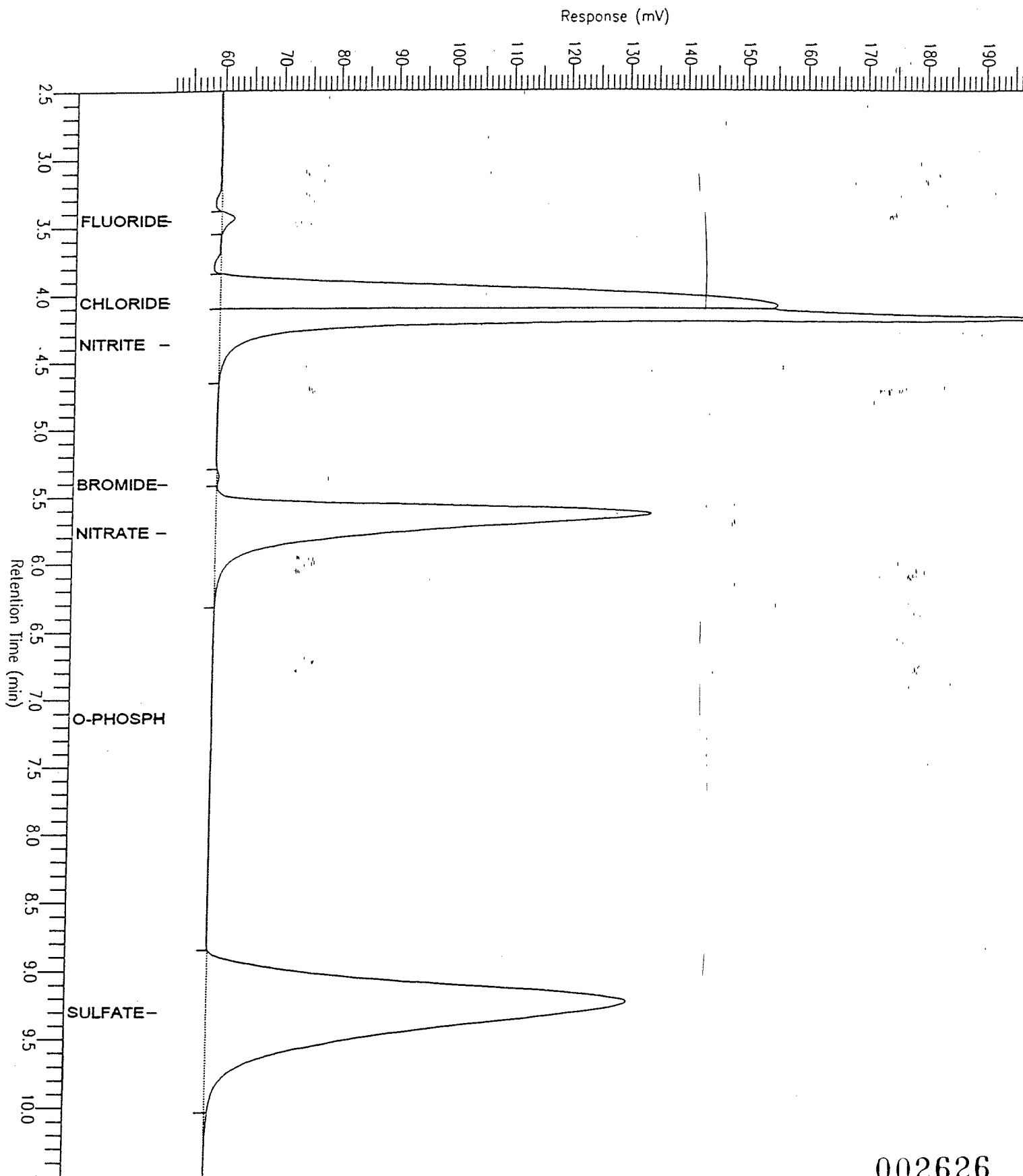
Report stored in ASCII file: C:\TC4\DATA\JUL\0710039.TX0

Standard Anions by IC

Sample Name : 9607190*1
FileName : C:\TC4\DATA\JUL\0710039.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 51 mV

Sample #: 39
Date : 7/10/96 06:10 PM
Time of Injection: 7/10/96 06:01 PM
Low Point : 51.35 mV
Plot Scale: 151.3 mV
High Point : 202.69 mV



002626

Software Version: 4.0<1C29>

Date: 7/10/96 06:20 PM

Sample Name : 9607190*1

Data File : C:\TC4\DATA\JUL\0710040.RAW Date: 7/10/96 06:11 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 40 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.03	148305.00	3.236	10.00	32.356
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.56	1509.00	0.163	10.00	1.629
Nitrate	5.76	81732.50	3.455	10.00	34.549
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.45	154324.50	4.918	10.00	49.178

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710040.TX0

002627

Standard Anions by IC

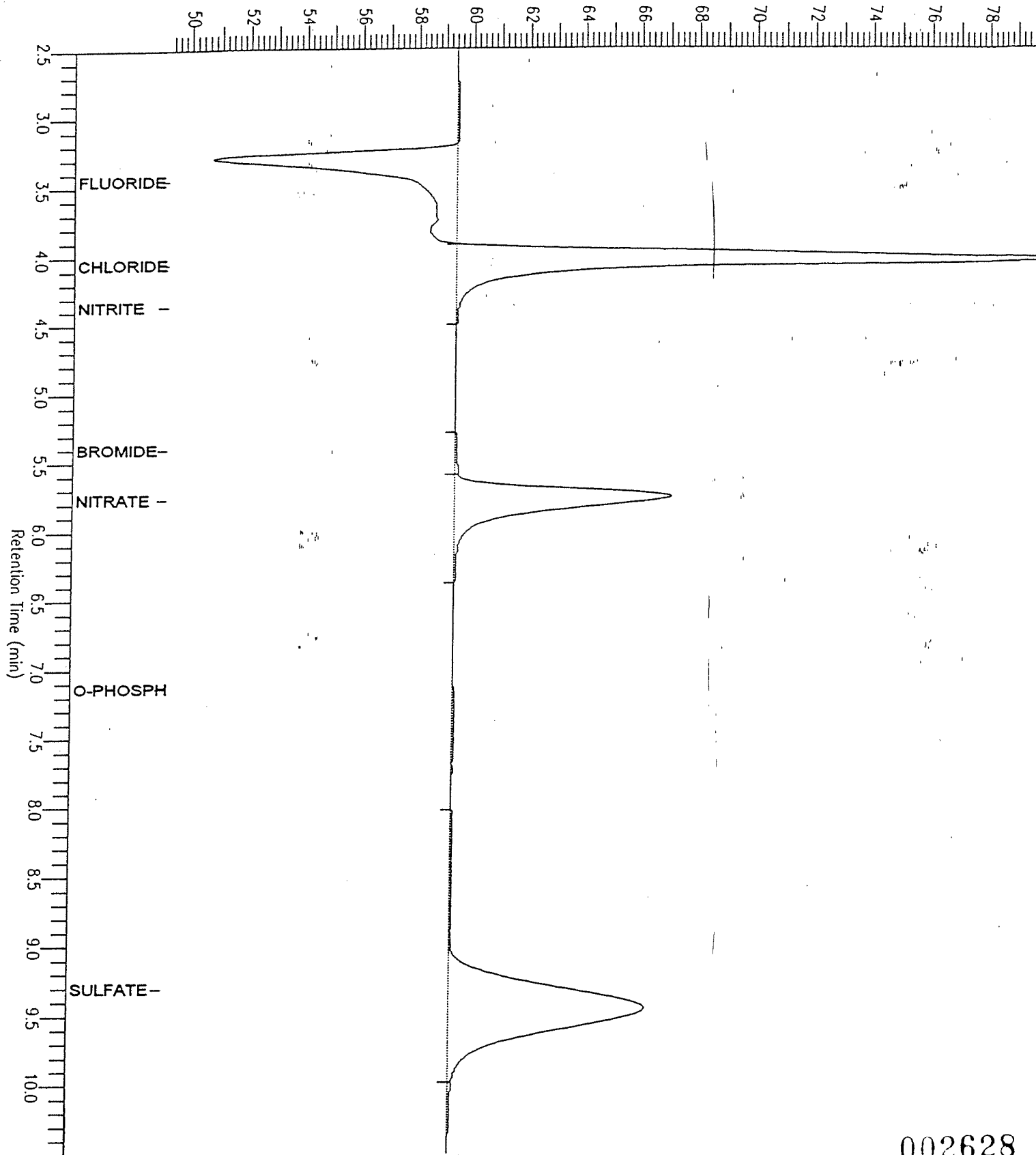
Sample Name : 9607190*1
FileName : C:\TC4\DATA\JUL\0710040.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 40
Date : 7/10/96 06:21 PM
Time of Injection: 7/10/96 06:11 PM
Low Point : 49.21 mV
Plot Scale: 31.6 mV
High Point : 80.76 mV

Page 1 of 1

Response (mV)



002628

Software Version: 4.0<1C29>
 Date: 7/10/96 06:31 PM
 Sample Name: : 9607191*1*R1
 Data File : C:\TC4\DATA\JUL\0710041.RAW Date: 7/10/96 06:22 PM
 Sequence File: C:\TC4\0710.SEQ Cycle: 41 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	10060.50	0.332	1.00	0.332
Chloride	4.14	1173503.50	22.767	1.00	22.767
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.61	1087089.00	39.288	1.00	39.288
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.25	1368747.50	36.183	1.00	36.183

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710041.TX0

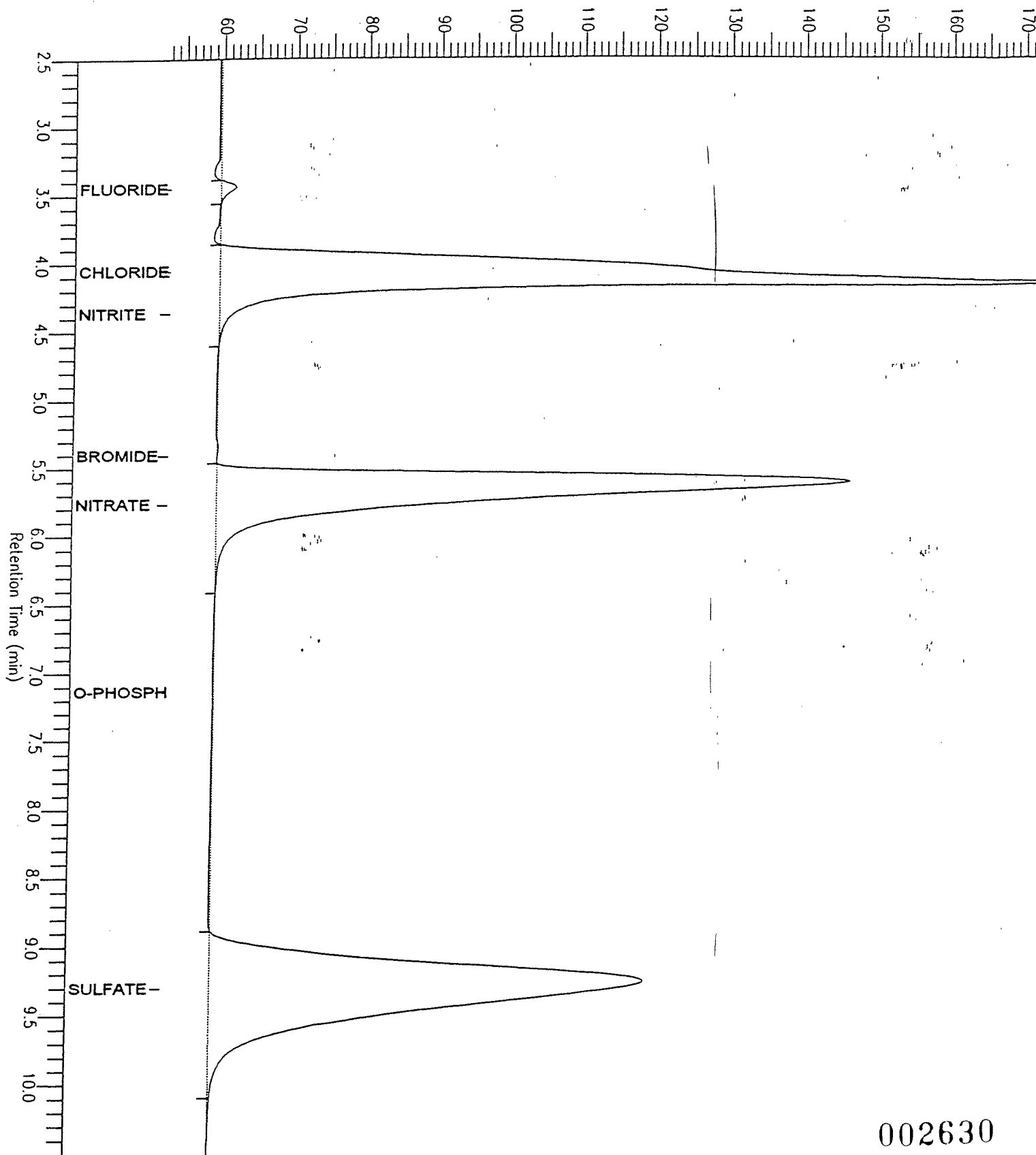
Standard Anions by IC

Sample Name : 9607191*1*R1
FileName : C:\TC4\DATA\JUL\0710041.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 53 mV

Sample #: 41
Date : 7/10/96 06:31 PM
Time of Injection: 7/10/96 06:22 PM
Low Point : 52.91 mV
Plot Scale: 122.9 mV
Page 1 of 1
High Point : 175.85 mV

Response (mV)



002630

Software Version: 4.0<1C29>

Date: 7/10/96 06:41 PM

Sample Name : CCV

Data File : C:\TC4\DATA\JUL\0710042.RAW Date: 7/10/96 06:32 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 42 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	327826.50	4.883	1.00	4.883
Chloride	4.06	952514.50	18.557	1.00	18.557
Nitrite	4.34	159660.00	4.628	1.00	4.628
Bromide	5.32	180074.00	9.440	1.00	9.440
Nitrate	5.64	651260.00	23.754	1.00	23.754
o-Phosphate	7.14	116368.50	12.416	1.00	12.416
Sulfate	9.18	1623226.00	47.883	1.00	47.883

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710042.TX0

002631

Standard Anions by IC

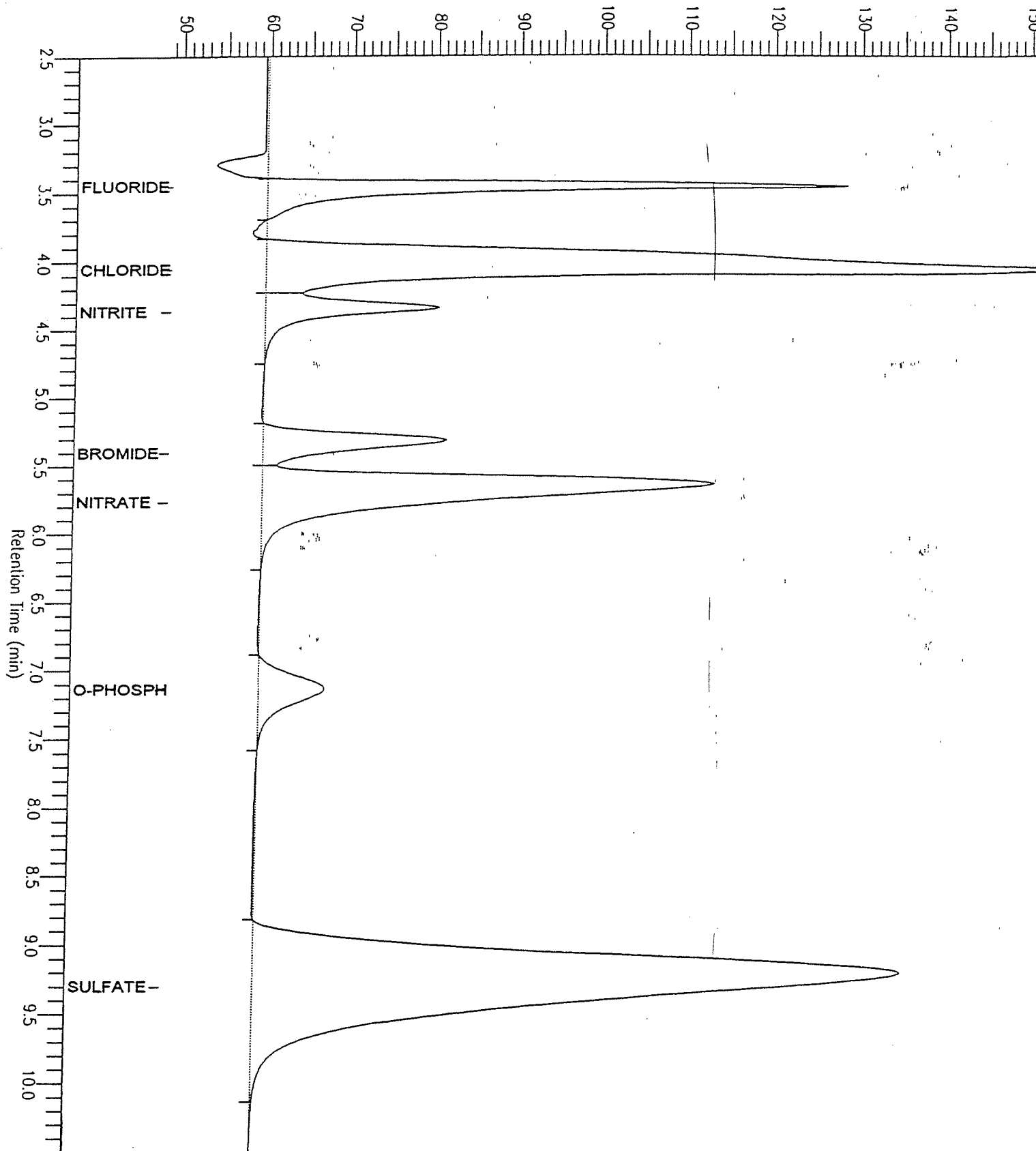
Sample Name : CCV
FileName : C:\IC4\DATA\JUL\0710042.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 42
Date : 7/10/96 06:42 PM
Time of Injection: 7/10/96 06:32 PM
Low Point : 48.71 mV
Plot Scale: 105.9 mV
High Point : 154.59 mV

Page 1 of 1

Response (mV)



Software Version: 4.0<1C29>

Date: 7/10/96 06:52 PM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0710043.RAW Date: 7/10/96 06:43 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 43 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.06	0.00	0.000	-----	0.000
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.77	0.00	0.000	-----	0.000
o-Phosphate	7.14	825.50	0.272	1.00	0.272
Sulfate	9.30	0.00	0.000	-----	0.000

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710043.TX0

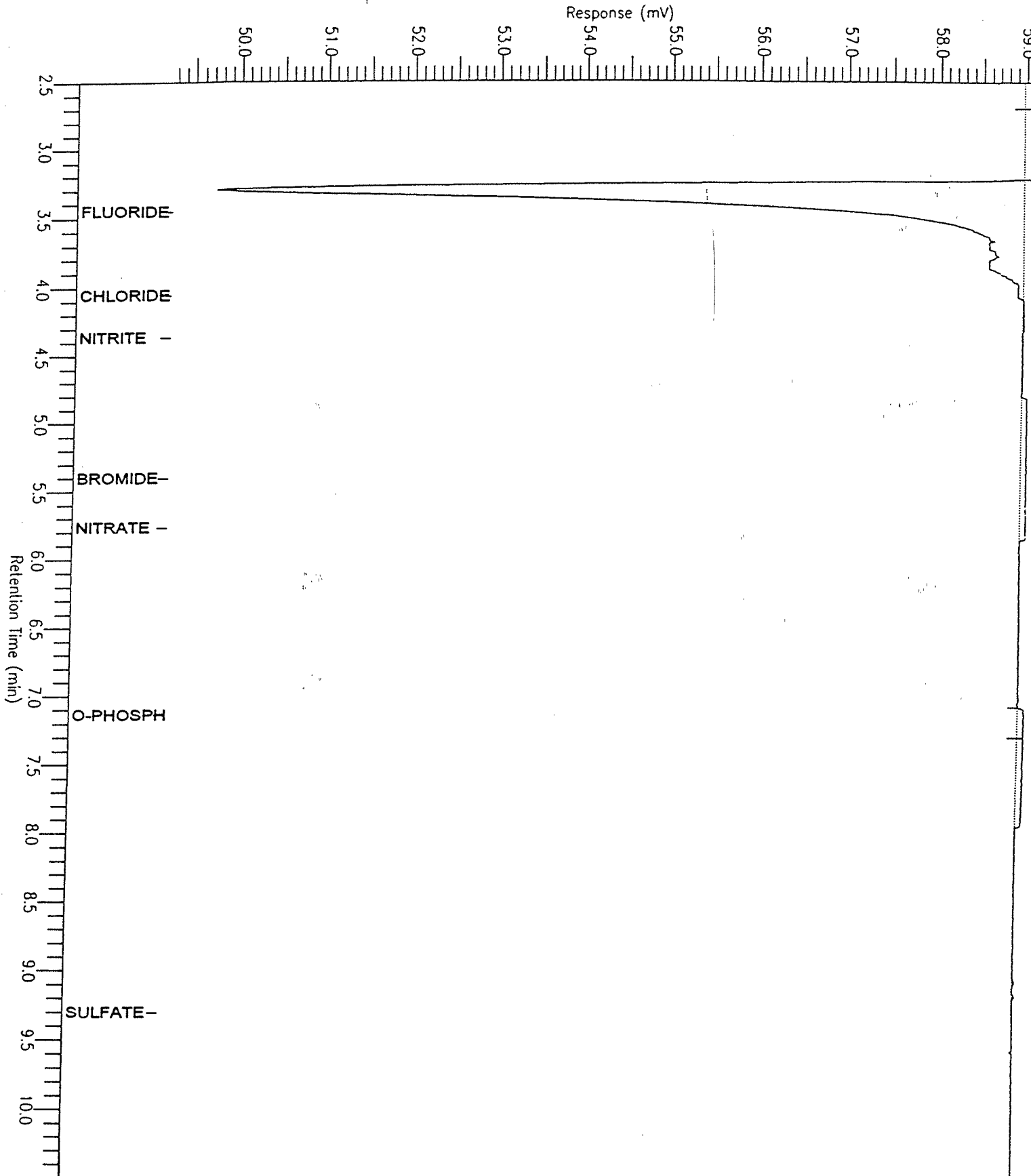
Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0710043.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 43
Date : 7/10/96 06:52 PM
Time of Injection: 7/10/96 06:43 PM
Low Point : 49.24 mV
Plot Scale: 10.2 mV
High Point : 59.46 mV

Page 1 of 1



002634

Software Version: 4.0<1C29>

Date: 7/10/96 07:02 PM

Sample Name : 9607191*1*S1

Data File : C:\TC4\DATA\JUL\0710044.RAW Date: 7/10/96 06:53 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 44 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23

Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	275418.00	4.132	1.00	4.132
Chloride	4.13	1552760.00	29.992	1.00	29.992%
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.31	290792.00	15.192	1.00	15.192
Nitrate	5.57	1554108.50	55.934	1.00	55.934%
o-Phosphate	7.13	233611.50	24.738	1.00	24.738
Sulfate	9.18	1938738.50	50.857	1.00	50.857%

=====
Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

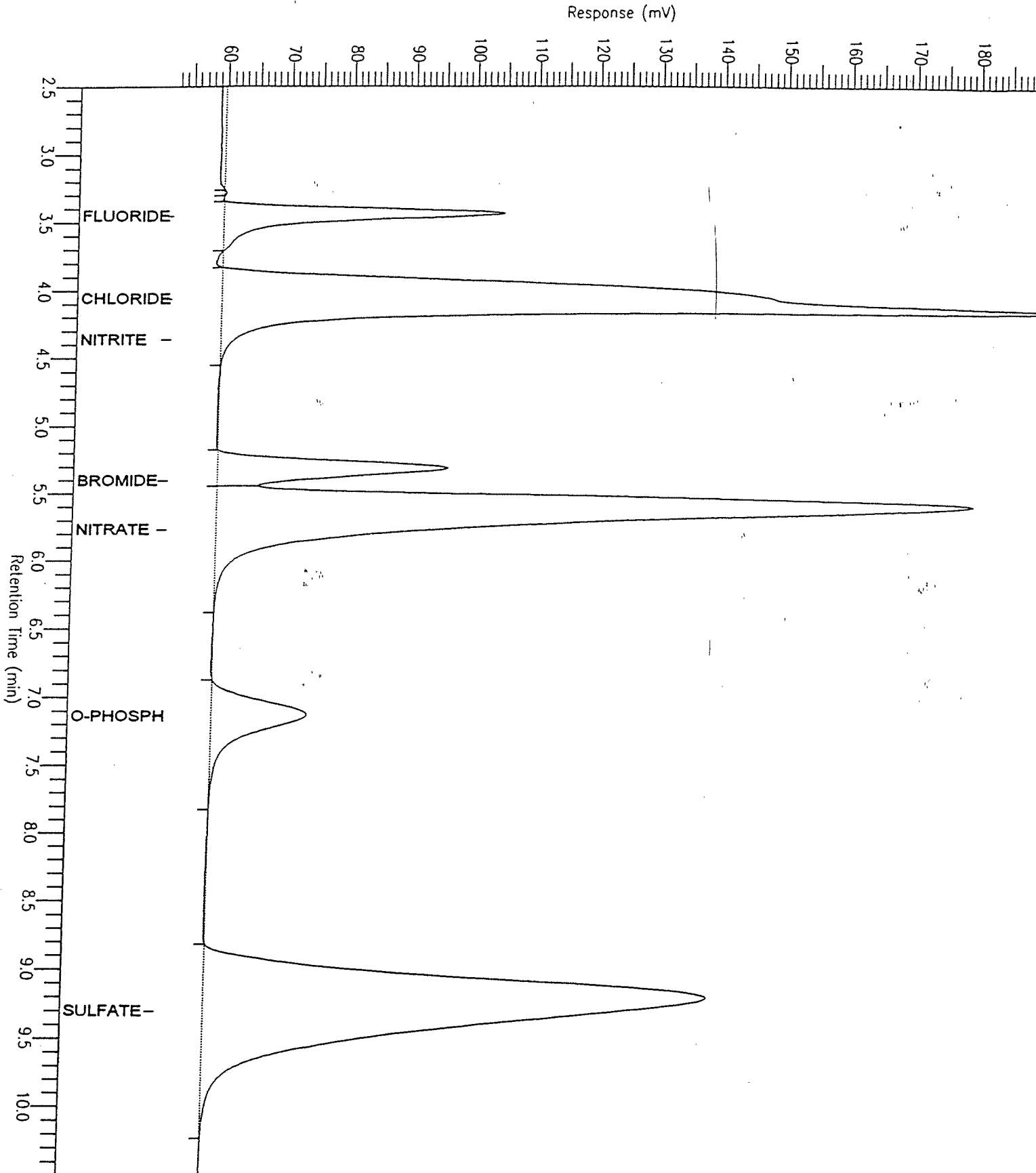
Report stored in ASCII file: C:\TC4\DATA\JUL\0710044.TX0

Standard Anions by IC

Sample Name : 9607191*1*S1
FileName : C:\TC4\DATA\JUL\0710044.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 52 mV

Sample #: 44
Date : 7/10/96 07:03 PM
Time of Injection: 7/10/96 06:53 PM
Low Point : 52.02 mV
Plot Scale: 141.7 mV
Page 1 of 1
High Point : 193.73 mV



002636

Software Version: 4.0<1C29>
 Date: 7/10/96 07:13 PM
 Sample Name : 9607191*1*S2
 Data File : C:\TC4\DATA\JUL\0710045.RAW Date: 7/10/96 07:04 PM
 Sequence File: C:\TC4\0710.SEQ Cycle: 45 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	279370.50	4.189	1.00	4.189
Chloride	4.13	1558080.00	30.093	1.00	30.093 <i>27. T=30.2</i>
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.31	292465.00	15.279	1.00	15.279
Nitrate	5.58	1561143.50	56.184	1.00	56.184 <i>103. T=55.3</i>
o-Phosphate	7.13	238204.00	25.221	1.00	25.221
Sulfate	9.18	1943003.50	50.967	1.00	50.967 <i>94. T=52.2</i>

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710045.TX0

002637

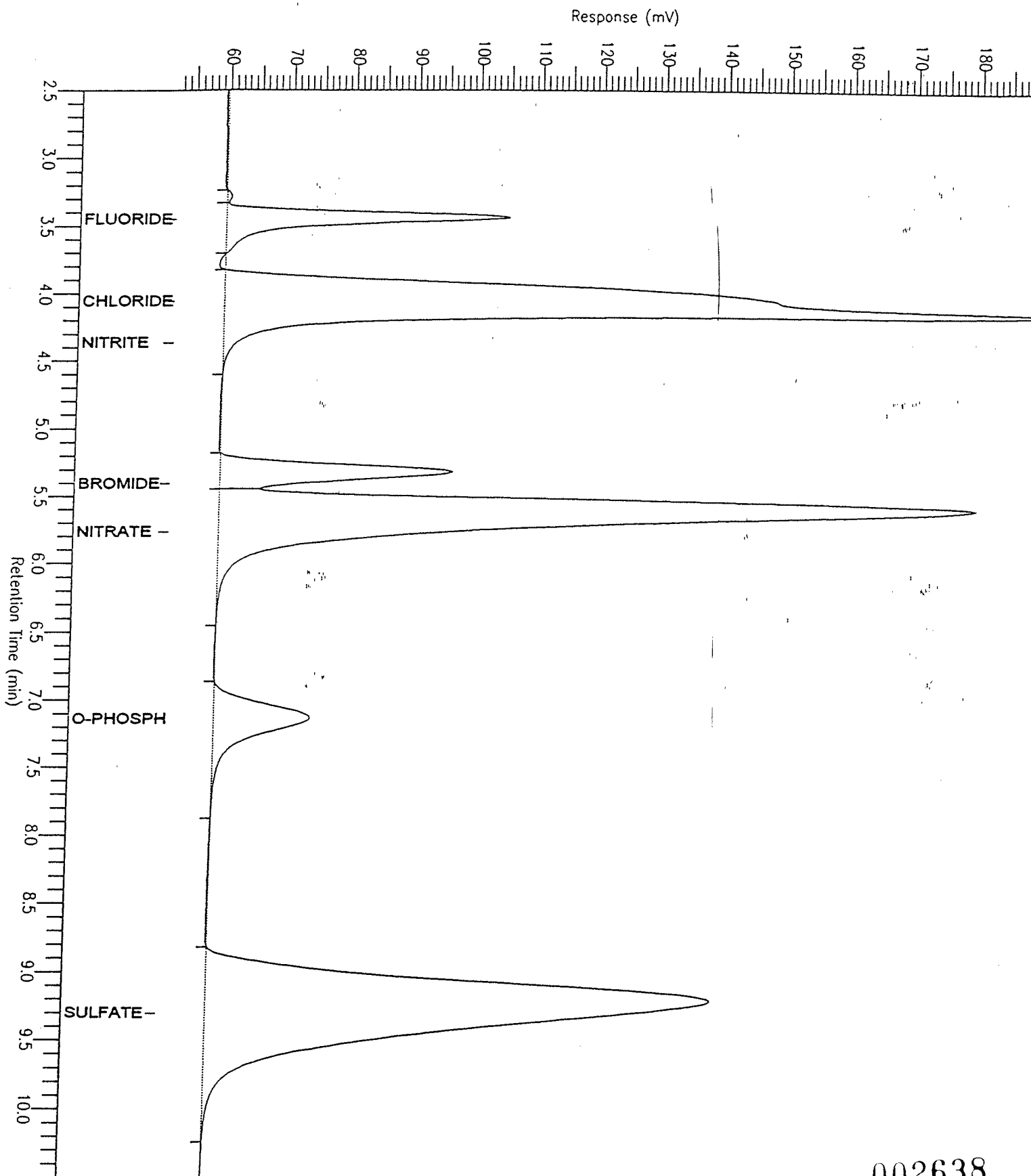
Standard Anions by IC

Sample Name : 9607191*1*S2
FileName : C:\TC4\DATA\JUL\0710045.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 52 mV

Sample #: 45
Date : 7/10/96 07:13 PM
Time of Injection: 7/10/96 07:04 PM
Low Point : 52.02 mV
Plot Scale: 141.7 mV
High Point : 193.74 mV

Page 1 of 1



002638

Software Version: 4.0<1C29>
 Date: 7/10/96 07:23 PM
 Sample Name : 9607191*1*R1
 Data File : C:\TC4\DATA\JUL\0710046.RAW Date: 7/10/96 07:14 PM
 Sequence File: C:\TC4\0710.SEQ Cycle: 46 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.03	101086.00	2.336	10.00	23.360
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.76	95061.50	3.930	10.00	39.300
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.46	124114.00	4.140	10.00	41.400

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

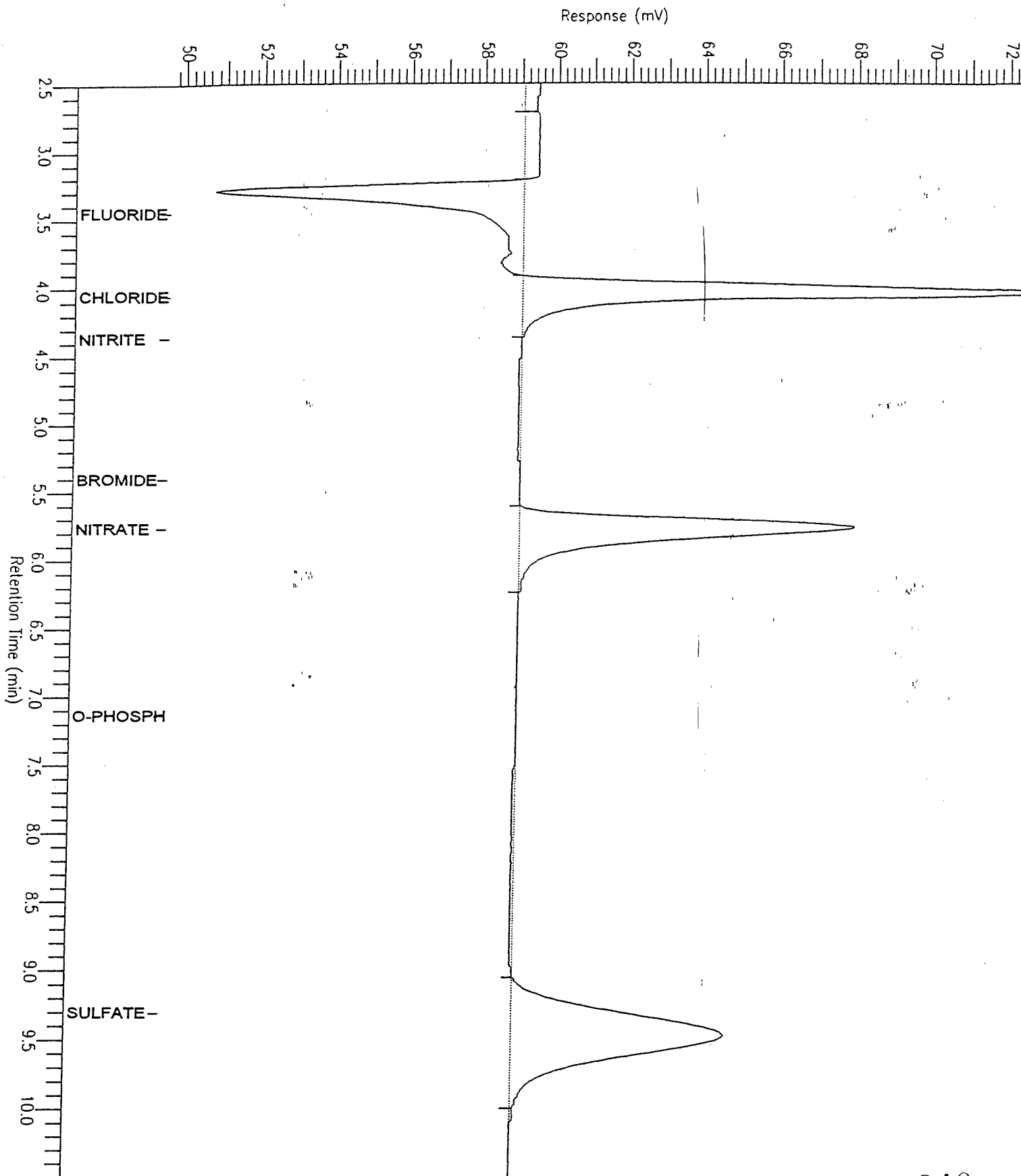
Report stored in ASCII file: C:\TC4\DATA\JUL\0710046.TX0

Standard Anions by IC

Sample Name : 9607191-1-R1
FileName : C:\TC4\DATA\JUL\0710046.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 46
Date : 7/10/96 07:24 PM
Time of Injection: 7/10/96 07:14 PM
Low Point : 49.60 mV
Plot Scale: 23.7 mV
High Point : 73.35 mV



002640

Software Version: 4.0<1C29>

Date: 7/10/96 07:34 PM

Sample Name : 9607191*1*S1

Data File : C:\TC4\DATA\JUL\0710047.RAW Date: 7/10/96 07:25 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 47 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
---------------	-------------------	---------	-------

=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	254131.00	3.827	10.00	38.275
Chloride	4.04	477905.50	9.515	10.00	95.148
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.32	310650.50	16.224	10.00	162.240
Nitrate	5.66	521118.00	19.116	10.00	191.156
o-Phosphate	7.13	250073.50	26.468	10.00	264.681
Sulfate	9.35	661208.50	17.967	10.00	179.673

=====

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710047.TX0

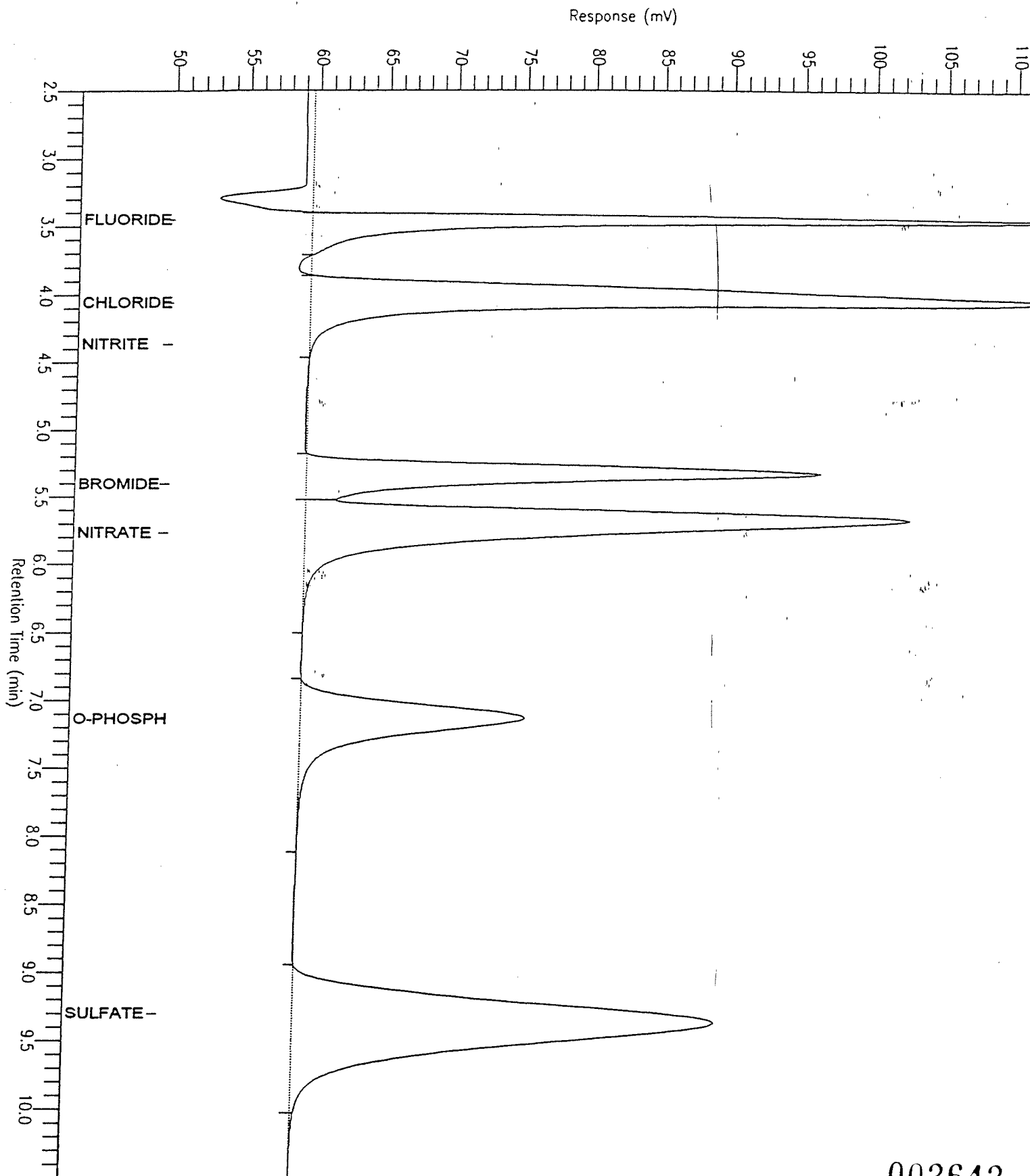
002641

Standard Anions by IC

Sample Name : 9607191*1*S1
FileName : C:\TC4\DATA\JUL\0710047.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 47
Date : 7/10/96 07:34 PM
Time of Injection: 7/10/96 07:25 PM
Low Point : 49.95 mV
Plot Scale: 63.6 mV
Page 1 of 1
High Point : 113.57 mV



002642

Software Version: 4.0<1C29>

Date: 7/10/96 07:44 PM

Sample Name : 9607191*1*S2

Data File : C:\TC4\DATA\JUL\0710048.RAW Date: 7/10/96 07:35 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 48 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	253878.00	3.824	10.00	38.239
Chloride	4.04	478683.50	9.530	10.00	95.296
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.32	312168.50	16.303	10.00	163.029
Nitrate	5.66	520665.50	19.099	10.00	190.994
o-Phosphate	7.13	250343.50	26.496	10.00	264.965
Sulfate	9.35	663030.50	18.014	10.00	180.142

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0710048.TX0

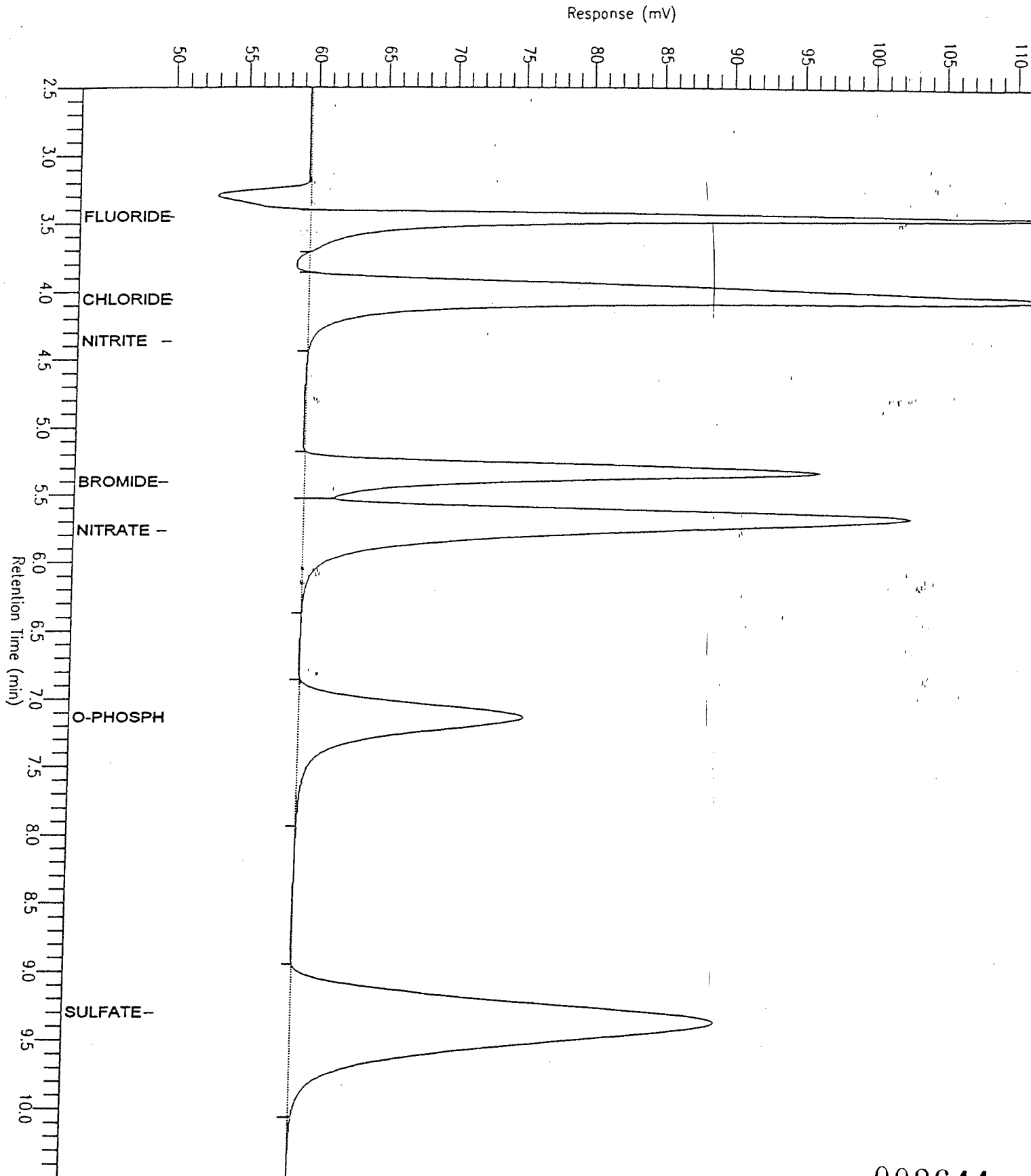
002643

Standard Anions by IC

Sample Name : 9607191*1*S2
FileName : C:\TC4\DATA\JUL\0710048.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 48
Date : 7/10/96 07:45 PM
Time of Injection: 7/10/96 07:35 PM
Low Point : 49.92 mV
Plot Scale: 63.6 mV
High Point : 113.52 mV



002644

Software Version: 4.0<1C29>

Date: 7/10/96 07:55 PM

Sample Name : 9607191*2

Data File : C:\TC4\DATA\JUL\0710049.RAW Date: 7/10/96 07:46 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 49 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.43	29369.50	0.609	1.00	0.609
Chloride	4.17	2127165.00	40.935	1.00	40.935 <i>ex lrv</i>
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.34	2209.00	0.199	1.00	0.199
Nitrate	5.55	2082839.50	74.779	1.00	74.779
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.11	2655401.50	69.307	1.00	69.307

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710049.TX0

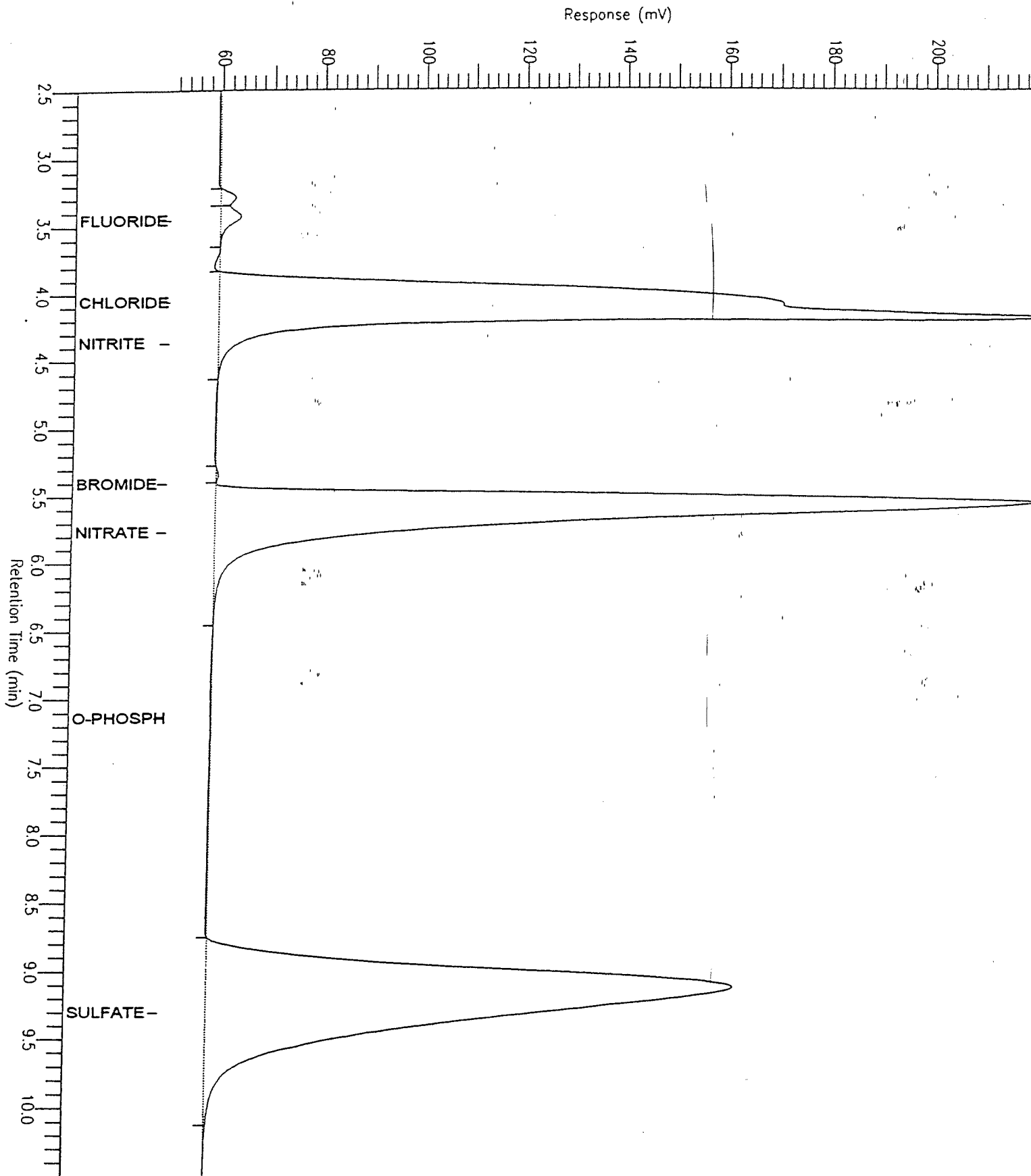
Standard Anions by IC

Sample Name : 9607191-2
FileName : C:\TC4\DATA\JUL\0710049.raw
Method : 0710
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 10.50 min
Plot Offset : 50 mV

Sample #: 49
Date : 7/10/96 07:55 PM
Time of Injection: 7/10/96 07:46 PM
Low Point : 50.47 mV
Plot Scale: 174.3 mV
High Point : 224.76 mV

Page 1 of 1



002646

Software Version: 4.0<1C29>
Date: 7/10/96 08:05 PM
Sample Name : 9607191*2
Data File : C:\TC4\DATA\JUL\0710050.RAW Date: 7/10/96 07:56 PM
Sequence File: C:\TC4\0710.SEQ Cycle: 50 Channel : A
Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.04	177624.50	3.794	10.00	37.941
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.73	172735.00	6.698	10.00	66.985
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.44	227868.50	6.811	10.00	68.112

=====
Reviewed and Approved by Date
=====

Working Elluent: GE9606011
LCS: GE9606018 STD CURVE: GE9606017
Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

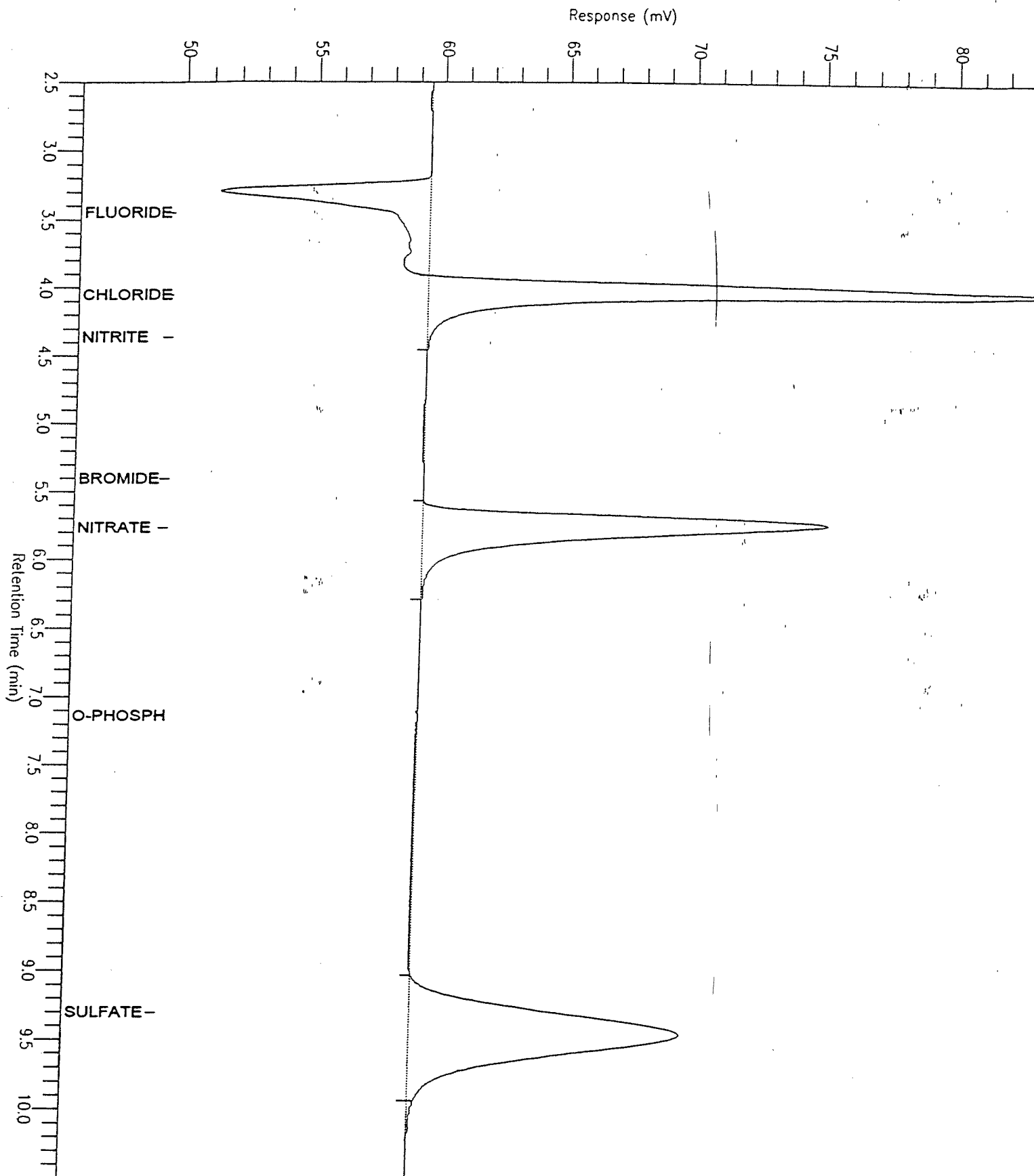
Report stored in ASCII file: C:\TC4\DATA\JUL\0710050.TX0

Standard Anions by IC

Sample Name : 9607191*2
FileName : C:\TC4\DATA\JUL\0710050.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 50
Date : 7/10/96 08:06 PM
Time of Injection: 7/10/96 07:56 PM
Low Point : 49.62 mV
Plot Scale: 34.7 mV
Page 1 of 1
High Point : 84.28 mV



002648

Software Version: 4.0<1C29>

Date: 7/10/96 08:16 PM

Sample Name : 9607191*3

Data File : C:\TC4\DATA\JUL\0710051.RAW Date: 7/10/96 08:07 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 51 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.07	647634.00	12.748	1.00	12.748
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.61	964811.50	34.930	1.00	34.930
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.31	888337.00	23.815	1.00	23.815

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710051.TX0

Standard Anions by IC

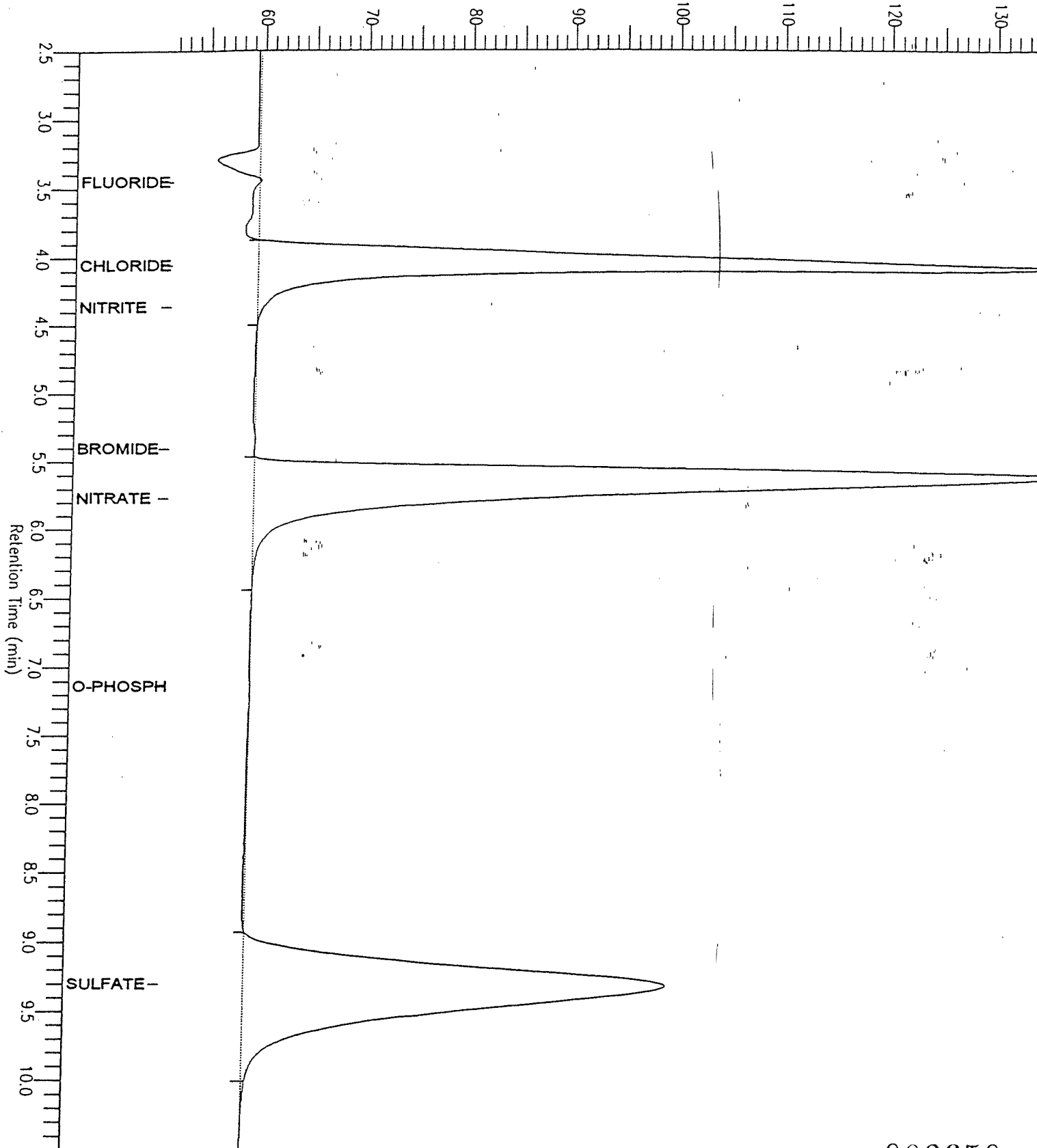
Sample Name : 9607191*3
FileName : C:\TC4\DATA\JUL\0710051.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 52 mV

Sample #: 51
Date : 7/10/96 08:16 PM
Time of Injection: 7/10/96 08:07 PM
Low Point : 51.55 mV
Plot Scale: 85.6 mV
High Point : 137.18 mV

Page 1 of 1

Response (mV)



002650

Software Version: 4.0<1C29>
 Date: 7/10/96 08:26 PM
 Sample Name : 9607191*3
 Data File : C:\TC4\DATA\JUL\0710052.RAW Date: 7/10/96 08:17 PM
 Sequence File: C:\TC4\0710.SEQ Cycle: 52 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.02	55866.50	1.475	10.00	14.745
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.76	85295.00	3.582	10.00	35.819
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.47	82911.50	3.079	10.00	30.793

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710052.TX0

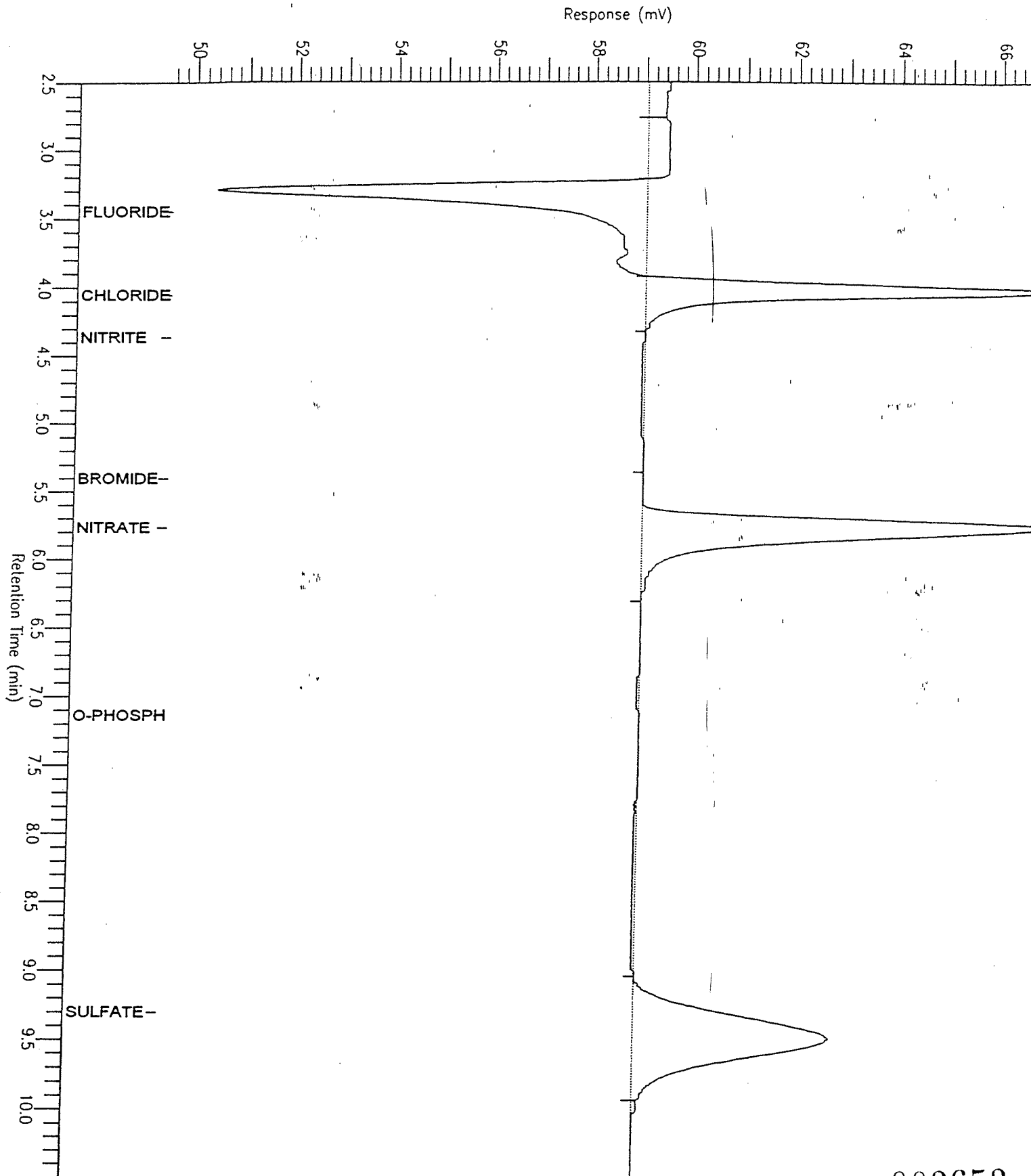
Standard Anions by IC

Sample Name : 9607191*3
FileName : C:\TC4\DATA\JUL\0710052.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 52
Date : 7/10/96 08:27 PM
Time of Injection: 7/10/96 08:17 PM
Low Point : 49.55 mV
Plot Scale: 17.6 mV
High Point : 67.19 mV

Page 1 of 1



002652

Software Version: 4.0<1C29>

Date: 7/10/96 08:37 PM

Sample Name : 9607191*4

Data File : C:\TC4\DATA\JUL\0710053.RAW Date: 7/10/96 08:28 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 53 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.43	24356.00	0.537	1.00	0.537
Chloride	4.14	1509106.00	29.160	1.00	29.160
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.34	1916.00	0.184	1.00	0.184
Nitrate	5.54	2342468.50	84.032	1.00	84.032
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.15	2200429.00	57.594	1.00	57.594

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710053.TX0

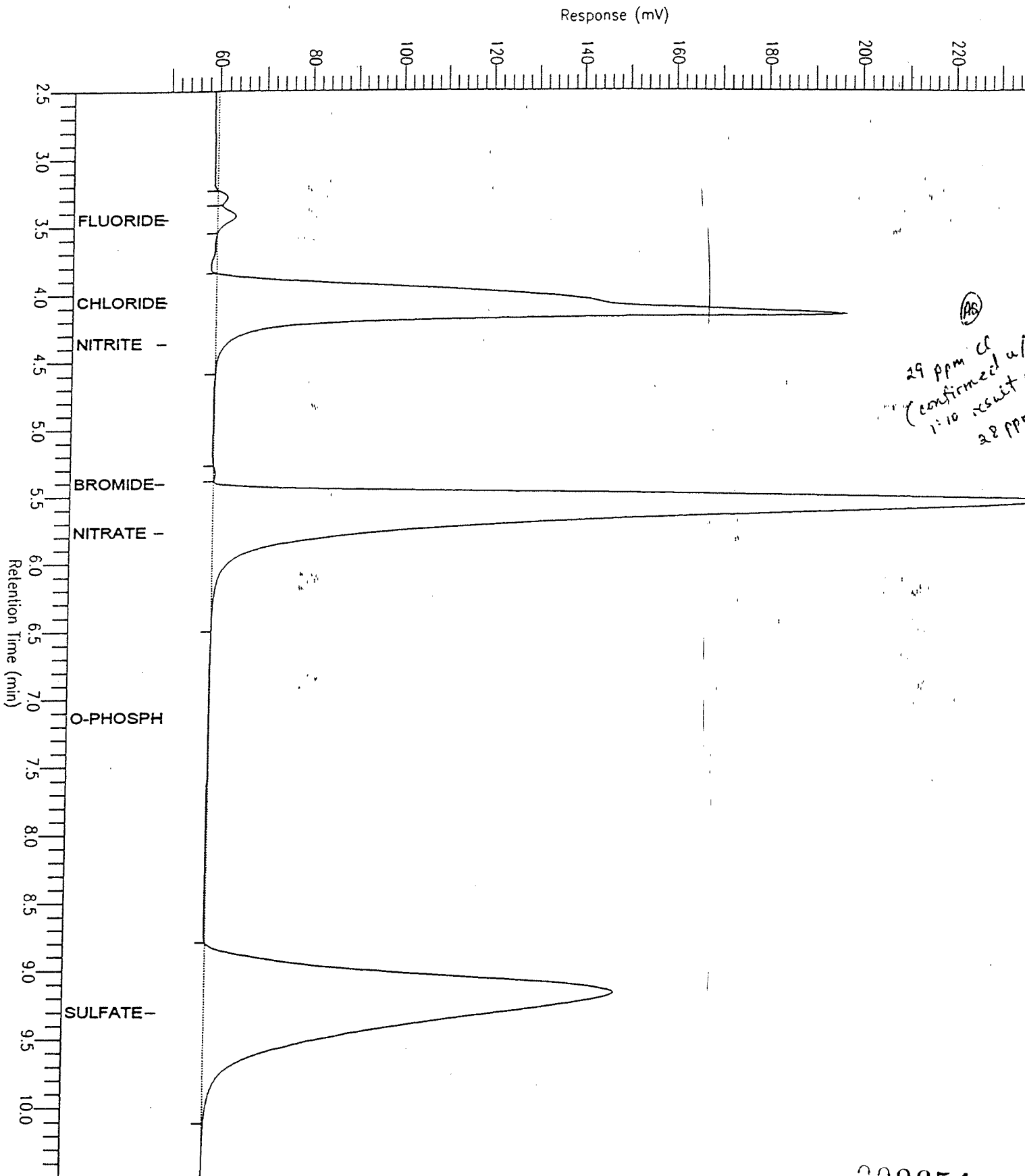
Standard Anions by IC

Sample Name : 9607191-4
 FileName : C:\TC4\DATA\JUL\0710053.raw
 Method : 0710
 Start Time : 2.50 min
 Scale Factor: 1.0

End Time : 10.50 min
 Plot Offset: 49 mV

Sample #: 53
 Date : 7/10/96 08:37 PM
 Time of Injection: 7/10/96 08:28 PM
 Low Point : 49.36 mV
 Plot Scale: 193.3 mV
 High Point : 242.68 mV

Page 1 of 1



002654

Software Version: 4.0<1C29>

Date: 7/10/96 08:47 PM

Sample Name : CCV

Data File : C:\TC4\DATA\JUL\0710054.RAW Date: 7/10/96 08:38 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 54 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	326919.00	4.870	1.00	4.870
Chloride	4.06	952399.00	18.554	1.00	18.554
Nitrite	4.34	156328.00	4.532	1.00	4.532
Bromide	5.32	178513.00	9.359	1.00	9.359
Nitrate	5.64	647034.50	23.604	1.00	23.604
o-Phosphate	7.14	113117.50	12.074	1.00	12.074
Sulfate	9.19	1815952.50	47.696	1.00	47.696

=====
Reviewed and Approved by Date
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710054.TX0

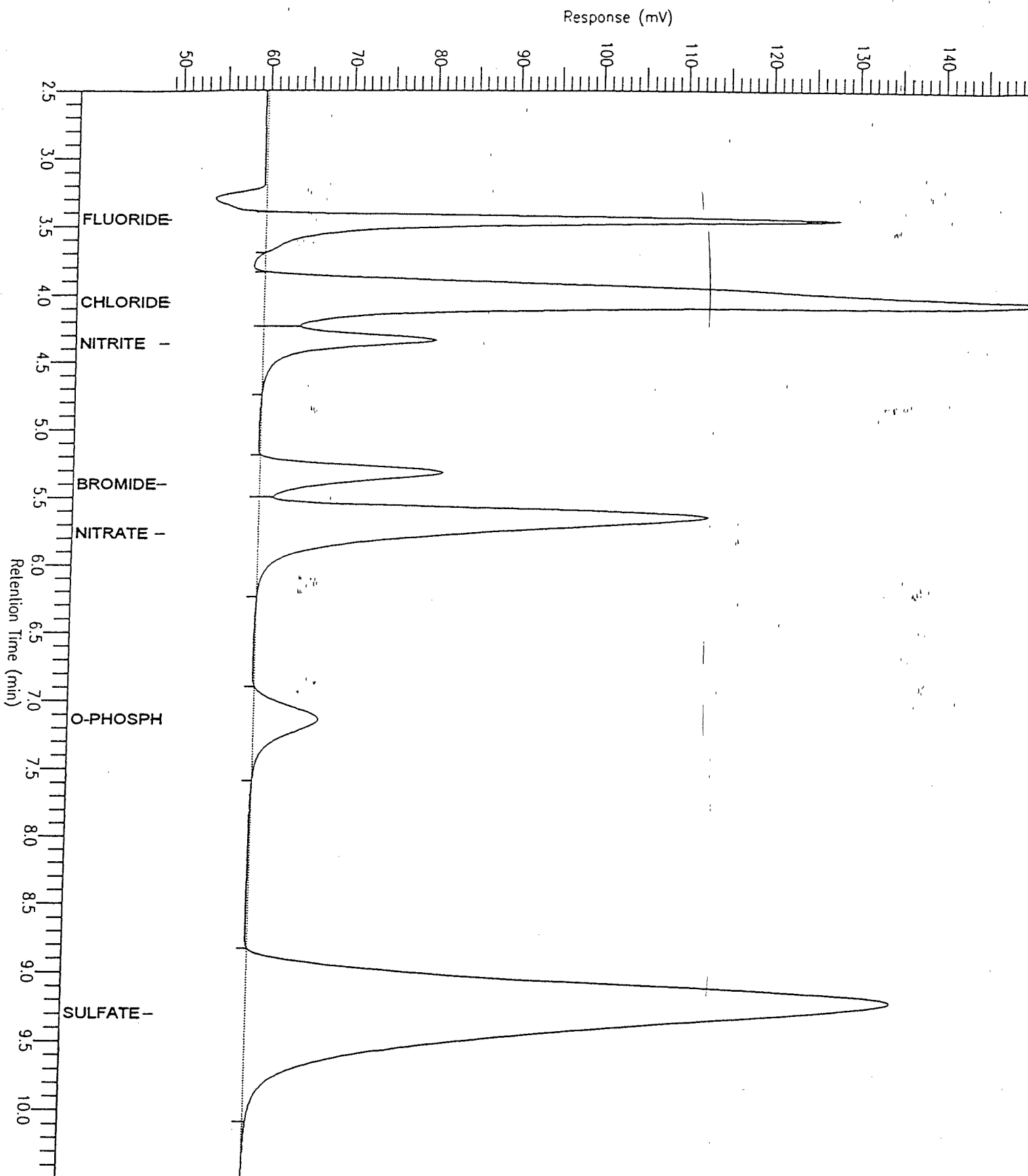
002655

Standard Anions by IC

Sample Name : CCV
FileName : C:\TC4\DATA\JUL\0710054.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 54
Date : 7/10/96 08:48 PM
Time of Injection: 7/10/96 08:38 PM
Low Point : 48.61 mV
Plot Scale: 105.0 mV
Page 1 of 1
High Point : 153.82 mV



Software Version: 4.0<1C29>

Date: 7/10/96 08:58 PM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0710055.RAW Date: 7/10/96 08:49 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 55 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.06	0.00	0.000	-----	0.000
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.77	0.00	0.000	-----	0.000
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.30	0.00	0.000	-----	0.000

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710055.TX0

002657

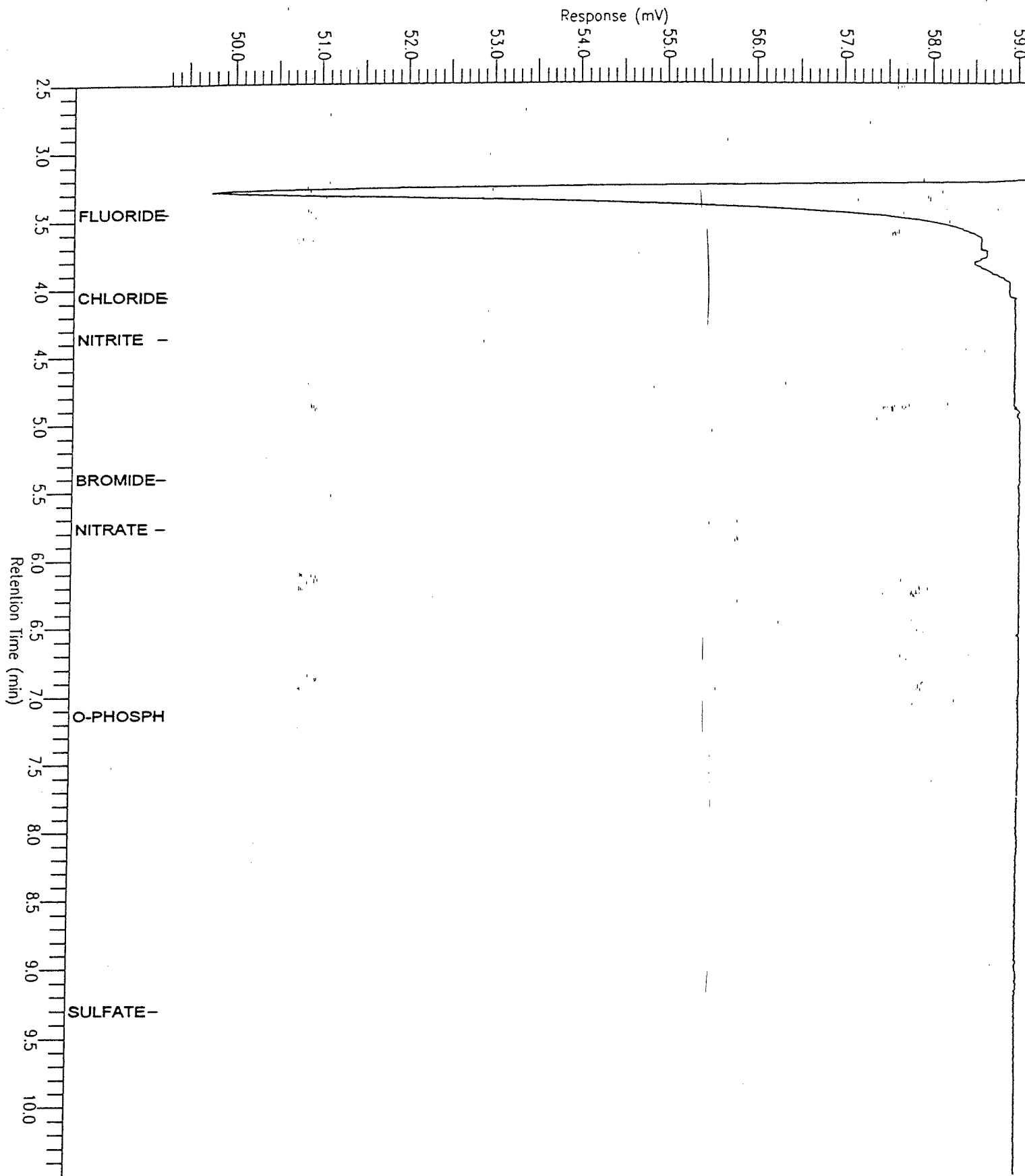
Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0710055.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 55
Date : 7/10/96 08:58 PM
Time of Injection: 7/10/96 08:49 PM
Low Point : 49.26 mV
Plot Scale: 10.2 mV

Page 1 of 1



002658

Software Version: 4.0<1C29>

Date: 7/10/96 09:08 PM

Sample Name : 9607191*4

Data File : C:\TC4\DATA\JUL\0710056.RAW Date: 7/10/96 08:59 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 56 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.03	124236.00	2.777	10.00	27.770
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.72	190761.00	7.341	10.00	73.409
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.45	190913.50	5.860	10.00	58.598

=====
Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

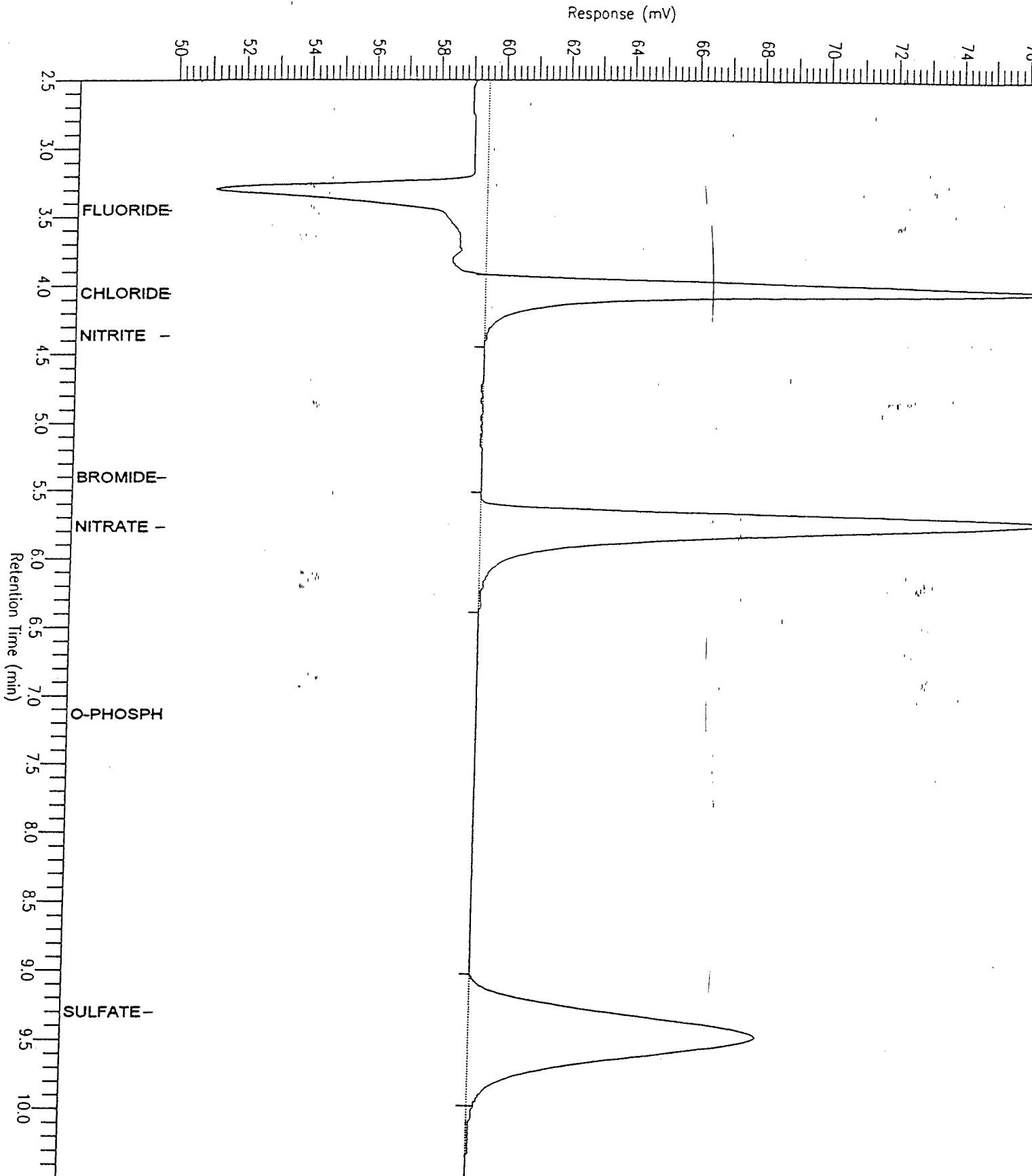
Report stored in ASCII file: C:\TC4\DATA\JUL\0710056.TX0

Standard Anions by IC

Sample Name : 9607191*4
FileName : C:\TC4\DATA\JUL\0710056.raw
Method : 0710
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 56
Date : 7/10/96 09:09 PM
Time of Injection: 7/10/96 08:59 PM
Low Point : 49.64 mV
Plot Scale: 27.3 mV
High Point : 77.17 mV



002660

Software Version: 4.0<1C29>

Date: 7/10/96 09:19 PM

Sample Name : 9606696*5*R1

Data File : C:\TC4\DATA\JUL\0710057.RAW Date: 7/10/96 09:10 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 57 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	9489.50	0.324	1.00	0.324
Chloride	4.22	1126028.00	21.862	1.00	21.862
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.35	28375.50	1.559	1.00	1.559
Nitrate	5.67	476001.50	17.508	1.00	17.508
o-Phosphate	7.17	41931.00	4.592	1.00	4.592
Sulfate	9.24	1427034.00	37.683	1.00	37.683

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0710057.TX0

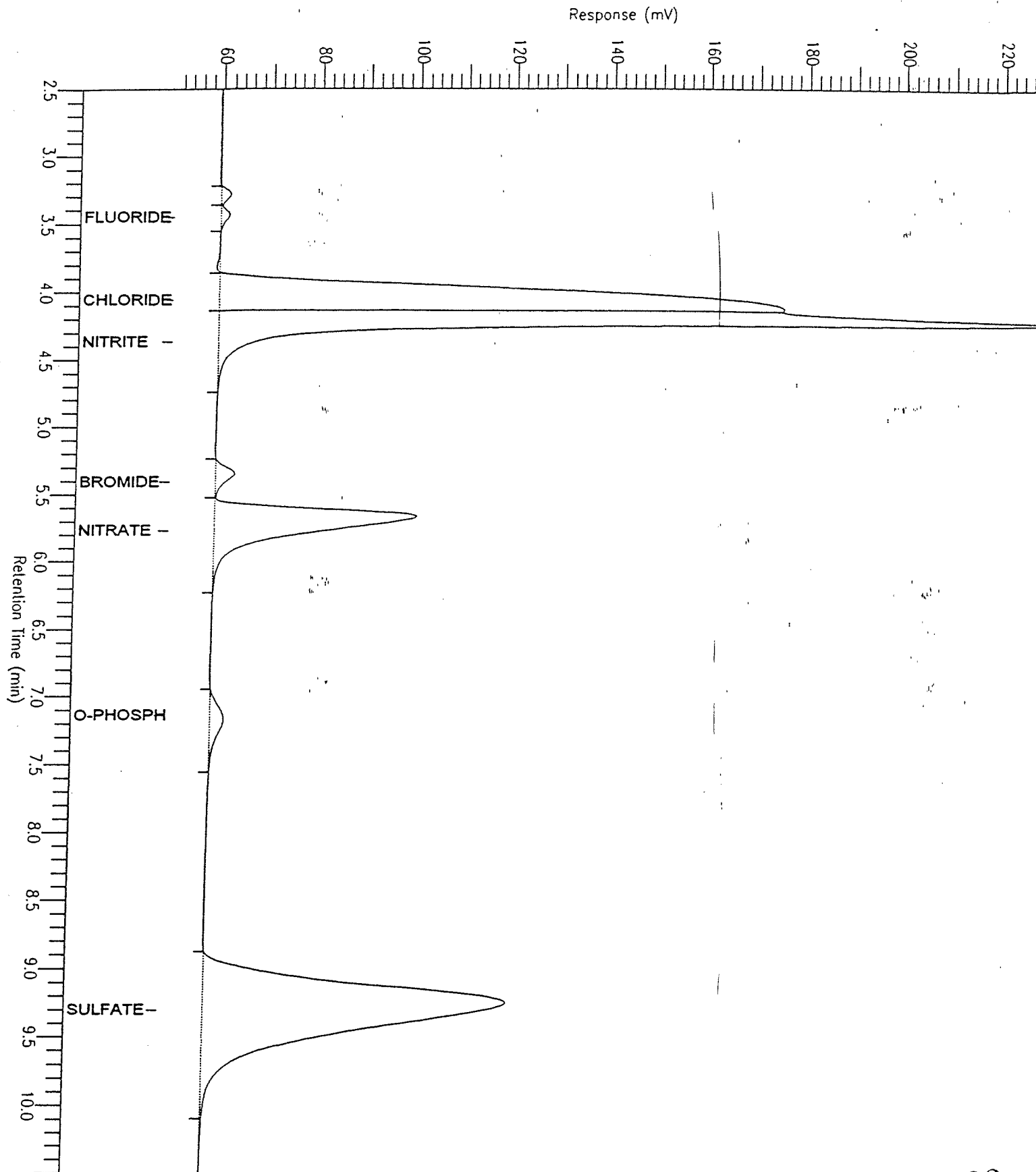
002661

Standard Anions by IC

Sample Name : 9606696*5*R1
FileName : C:\IC4\DATA\JUL\0710057.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 57
Date : 7/10/96 09:19 PM
Time of Injection: 7/10/96 09:10 PM
Low Point : 50.30 mV
Plot Scale: 182.1 mV
Page 1 of 1
High Point : 232.37 mV



002662

Software Version: 4.0<1C29>
 Date: 7/10/96 09:29 PM
 Sample Name : 9606696*5*S1
 Data File : C:\TC4\DATA\JUL\0710058.RAW Date: 7/10/96 09:20 PM
 Sequence File: C:\TC4\0710.SEQ Cycle: 58 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	283011.00	4.241	1.00	4.241
Chloride	4.10	1672780.50	32.278	1.00	32.278
Nitrite	4.22	996031.00	28.480	1.00	28.480
Bromide	5.32	335472.00	17.514	1.00	17.514
Nitrate	5.63	935570.50	33.888	1.00	33.888
o-Phosphate	7.13	296079.00	31.303	1.00	31.303
Sulfate	9.18	2011604.50	52.733	1.00	52.733

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710058.TX0

Standard Anions by IC

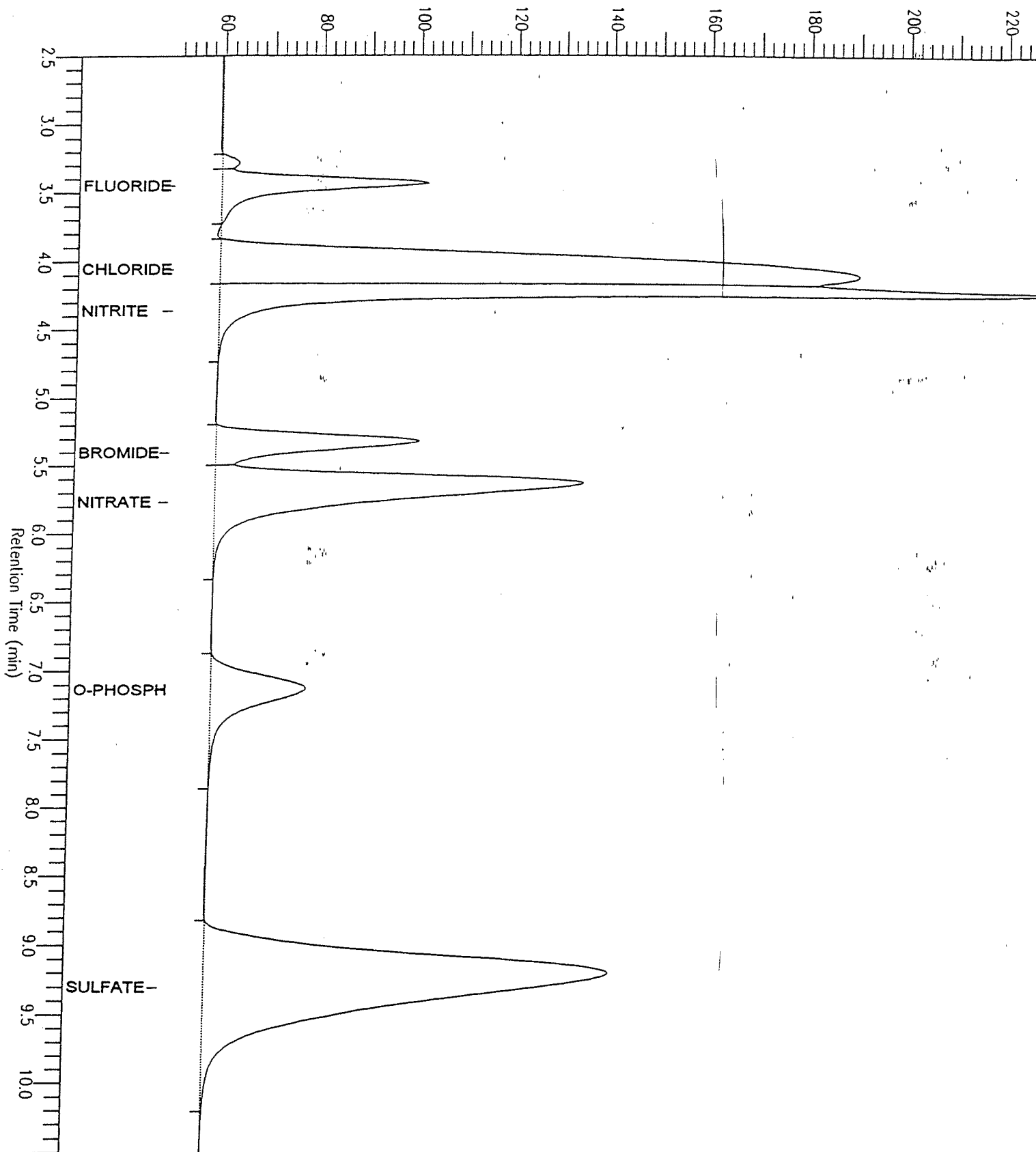
Sample Name : 9606696*5*S1
FileName : C:\TC4\DATA\JUL\0710058.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 58
Date : 7/10/96 09:30 PM
Time of Injection: 7/10/96 09:20 PM
Low Point : 50.33 mV
Plot Scale: 162.8 mV
High Point : 233.17 mV

Page 1 of 1

Response (mV)



002664

Software Version: 4.0<1C29>

Date: 7/10/96 09:40 PM

Sample Name : 9606696*5*S2

Data File : C:\TC4\DATA\JUL\0710059.RAW Date: 7/10/96 09:31 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 59 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	287871.50	4.311	1.00	4.311
Chloride	4.10	1629586.00	31.456	1.00	31.456
Nitrite	4.22	1048221.00	29.968	1.00	29.968
Bromide	5.32	339864.00	17.742	1.00	17.742
Nitrate	5.62	944846.00	34.218	1.00	34.218
o-Phosphate	7.13	300080.00	31.724	1.00	31.724
Sulfate	9.18	2018364.00	52.907	1.00	52.907

=====
Reviewed and Approved by Date
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710059.TX0

002665

Standard Anions by IC

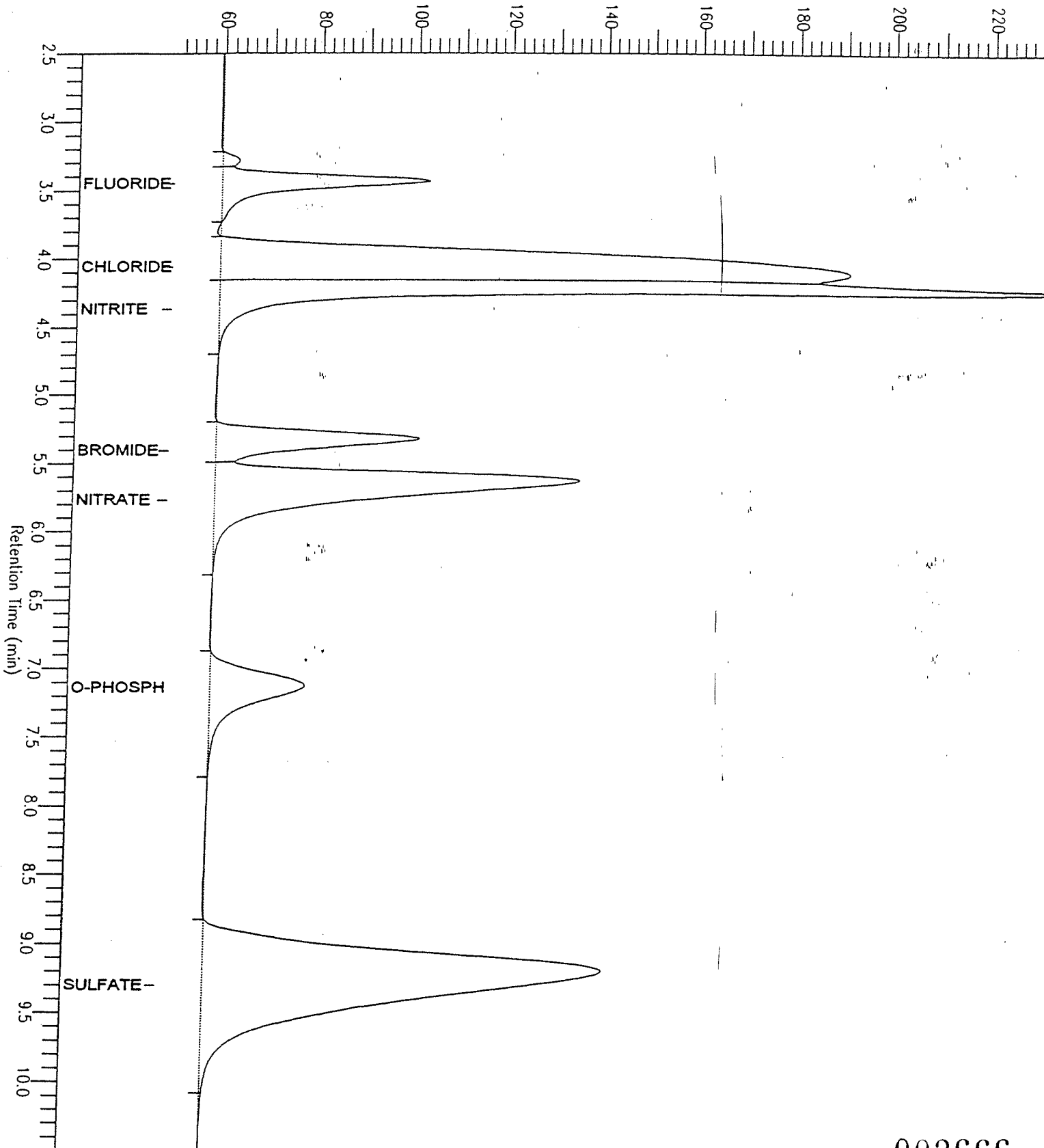
Sample Name : 9606696-5-S2
FileName : C:\TC4\DATA\JUL\0710059.raw
Method : 0710
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 59
Date : 7/10/96 09:40 PM
Time of Injection: 7/10/96 09:31 PM
Low Point : 50.08 mV
Plot Scale: 187.0 mV
High Point : 237.13 mV

Page 1 of 1

Response (mV)



002666

Software Version: 4.0<1C29>
 Date: 7/10/96 09:50 PM
 Sample Name : 9606696*5*R1
 Data File : C:\TC4\DATA\JUL\0710060.RAW Date: 7/10/96 09:41 PM
 Sequence File: C:\TC4\0710.SEQ Cycle: 60 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 5.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.07	389653.50	7.834	5.00	39.168
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.37	4471.50	0.317	5.00	1.584
Nitrate	5.76	83804.50	3.529	5.00	17.644
o-Phosphate	7.20	7239.50	0.946	5.00	4.731
Sulfate	9.45	249146.00	7.359	5.00	36.795

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710060.TX0

002667

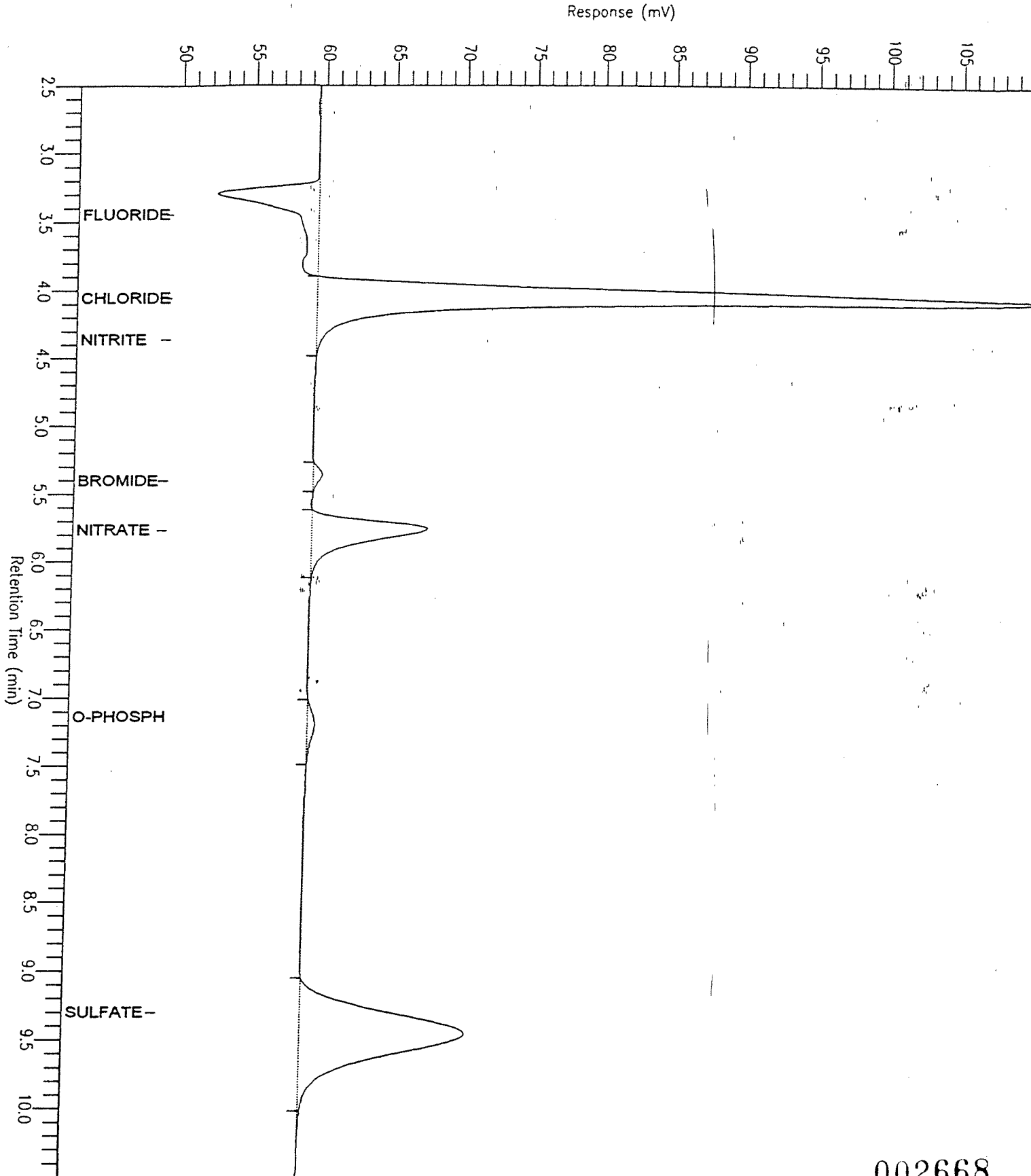
Standard Anions by IC

Sample Name : 9606696*5*R1
FileName : C:\TC4\DATA\JUL\0710060.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 60
Date : 7/10/96 09:51 PM
Time of Injection: 7/10/96 09:41 PM
Low Point : 49.38 mV
Plot Scale: 62.9 mV
High Point : 112.26 mV

Page 1 of 1



002668

Software Version: 4.0<1C29>
Date: 7/10/96 10:01 PM
Sample Name : 9606696*5*S1
Data File : C:\TC4\DATA\JUL\0710061.RAW Date: 7/10/96 09:52 PM
Sequence File: C:\TC4\0710.SEQ Cycle: 61 Channel : A
Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
Sample Amount : 1.0000 Dilution Factor : 5.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	244737.50	3.693	5.00	18.465
Chloride	4.08	774939.00	15.174	5.00	75.86842%
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.33	305606.00	15.962	5.00	79.810
Nitrate	5.67	494044.00	18.151	5.00	90.753
c-Phosphate	7.14	246662.00	26.110	5.00	130.548
Sulfate	9.35	789660.50	21.274	5.00	106.371

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011
LCS: GE9606018 STD CURVE: GE9606017
Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

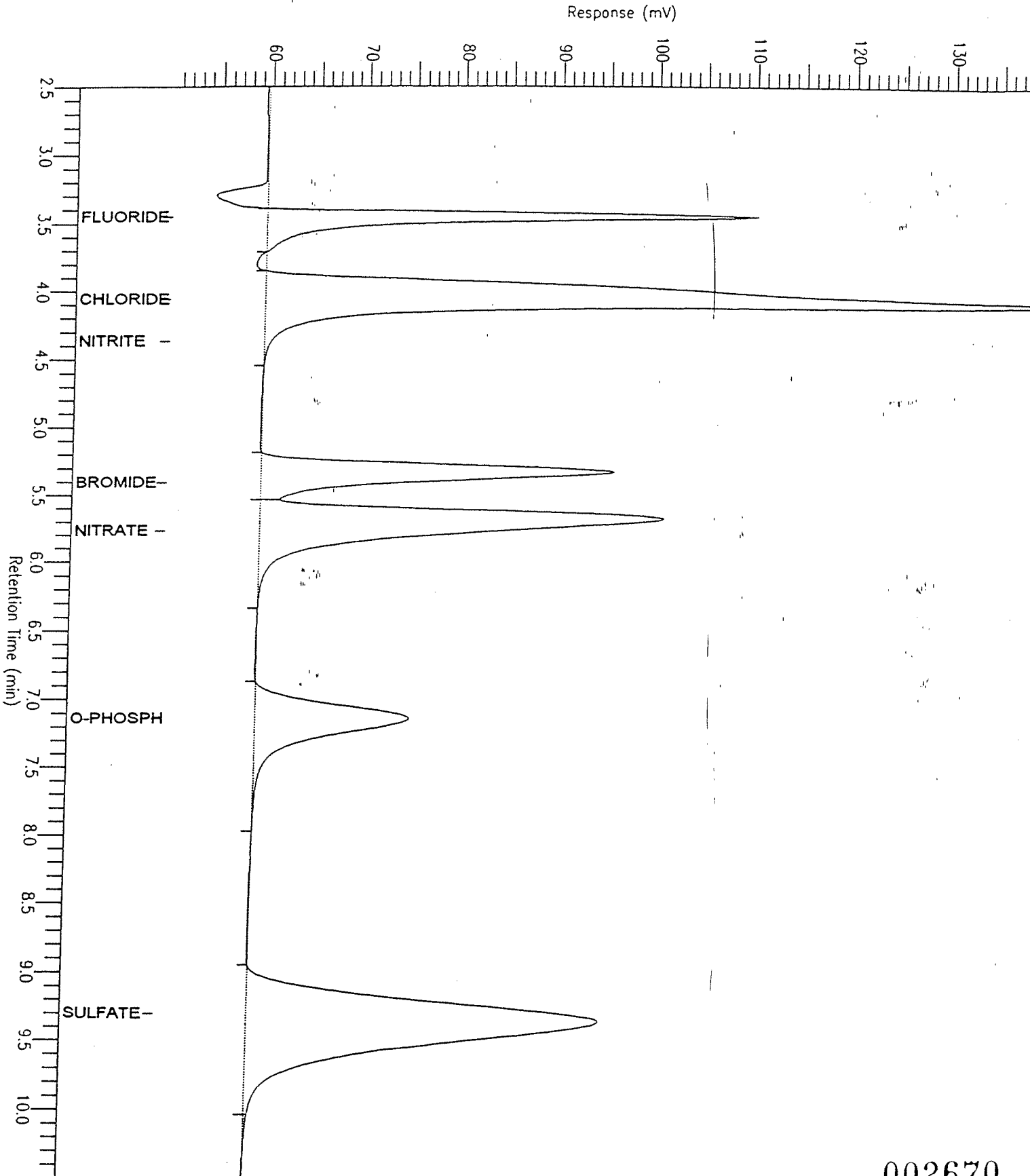
Report stored in ASCII file: C:\TC4\DATA\JUL\0710061.TX0

Standard Anions by IC

Sample Name : 9606696*5*S1
FileName : C:\TC4\DATA\JUL\0710061.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 61
Date : 7/10/96 10:01 PM
Time of Injection: 7/10/96 09:52 PM
Low Point : 50.06 mV
Plot Scale: 91.5 mV
High Point : 141.58 mV



002670

Software Version: 4.0<1C29>

Date: 7/10/96 10:11 PM

Sample Name : 9606696*5*S2

Data File : C:\TC4\DATA\JUL\0710062.RAW Date: 7/10/96 10:02 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 62 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 5.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	257421.50	3.875	5.00	19.373
Chloride	4.08	787967.50	15.422	5.00	77.109
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.32	318145.00	16.613	5.00	83.067
Nitrate	5.67	512646.00	18.814	5.00	94.068
o-Phosphate	7.14	259142.50	27.421	5.00	137.106
Sulfate	9.34	809390.50	21.782	5.00	108.911

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710062.TX0

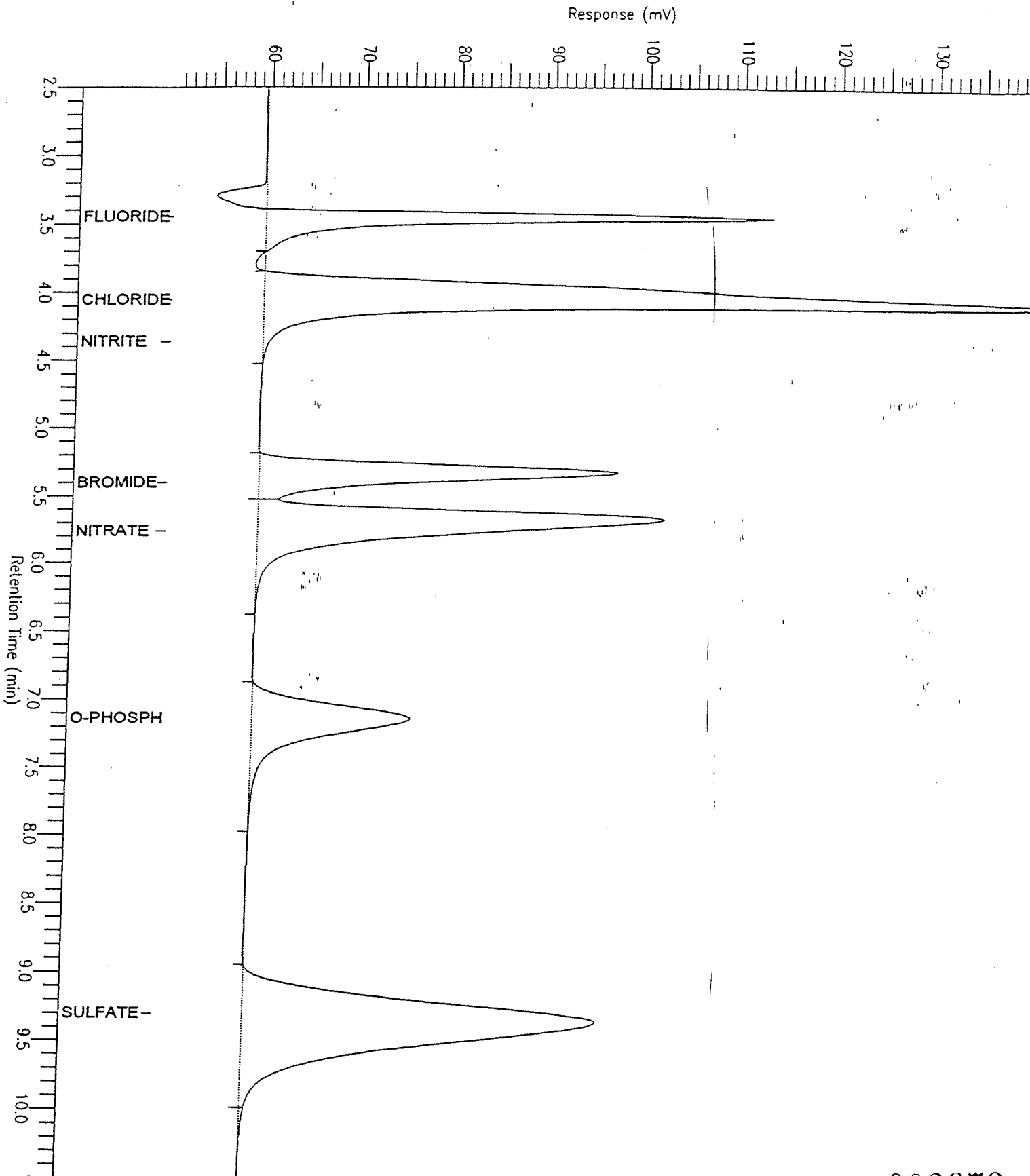
002671

Standard Anions by IC

Sample Name : 9606696*5*S2
FileName : C:\TC4\DATA\JUL\0710062.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 62
Date : 7/10/96 10:12 PM
Time of Injection: 7/10/96 10:02 PM
Low Point : 50.03 mV
Plot Scale: 93.4 mV
Page 1 of 1
High Point : 143.43 mV



002672

Software Version: 4.0<1C29>

Date: 7/10/96 10:22 PM

Sample Name : 9606209*1

Data File : C:\TC4\DATA\JUL\0710063.RAW Date: 7/10/96 10:13 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 63 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	83379.50	1.382	1.00	1.382
Chloride	4.12	626420.00	12.344	1.00	12.344
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.69	381262.50	14.131	1.00	14.131
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.26	1368617.00	36.179	1.00	36.179

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710063.TX0

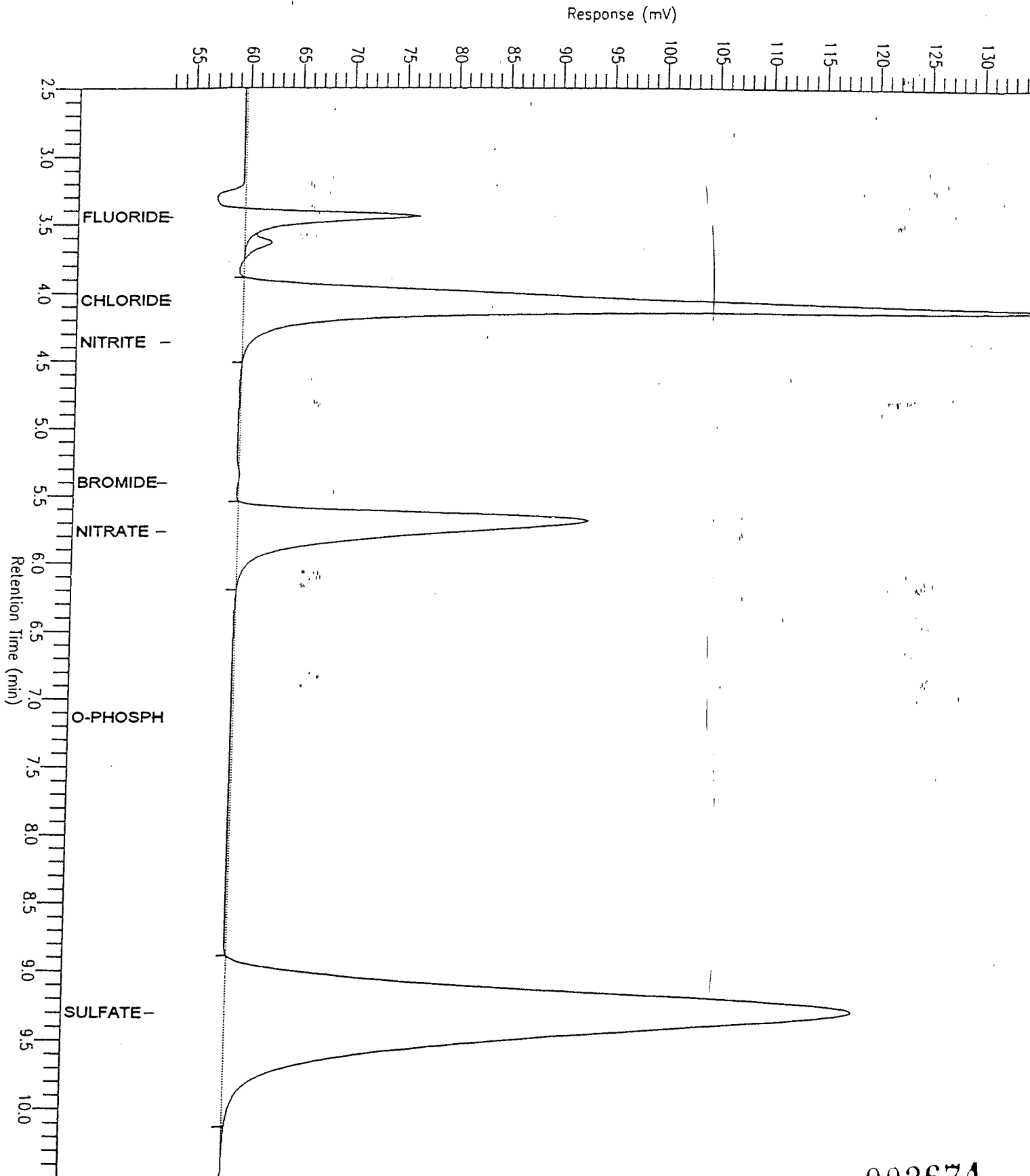
002673

Standard Anions by IC

Sample Name : 9606209*1
FileName : C:\TC4\DATA\JUL\0710063.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 53 mV

Sample #: 63
Date : 7/10/96 10:22 PM
Time of Injection: 7/10/96 10:13 PM
Low Point : 52.93 mV
Plot Scale: 64.9 mV
Page 1 of 1
High Point : 137.83 mV



002674

Software Version: 4.0<1C29>

Date: 7/10/96 10:32 PM

Sample Name : 9607209*1

Data File : C:\TC4\DATA\JUL\0710064.RAW Date: 7/10/96 10:23 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 64 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.02	55561.00	1.469	10.00	14.687
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.79	37101.50	1.864	10.00	18.642
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.48	122958.50	4.110	10.00	41.103

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710064.TX0

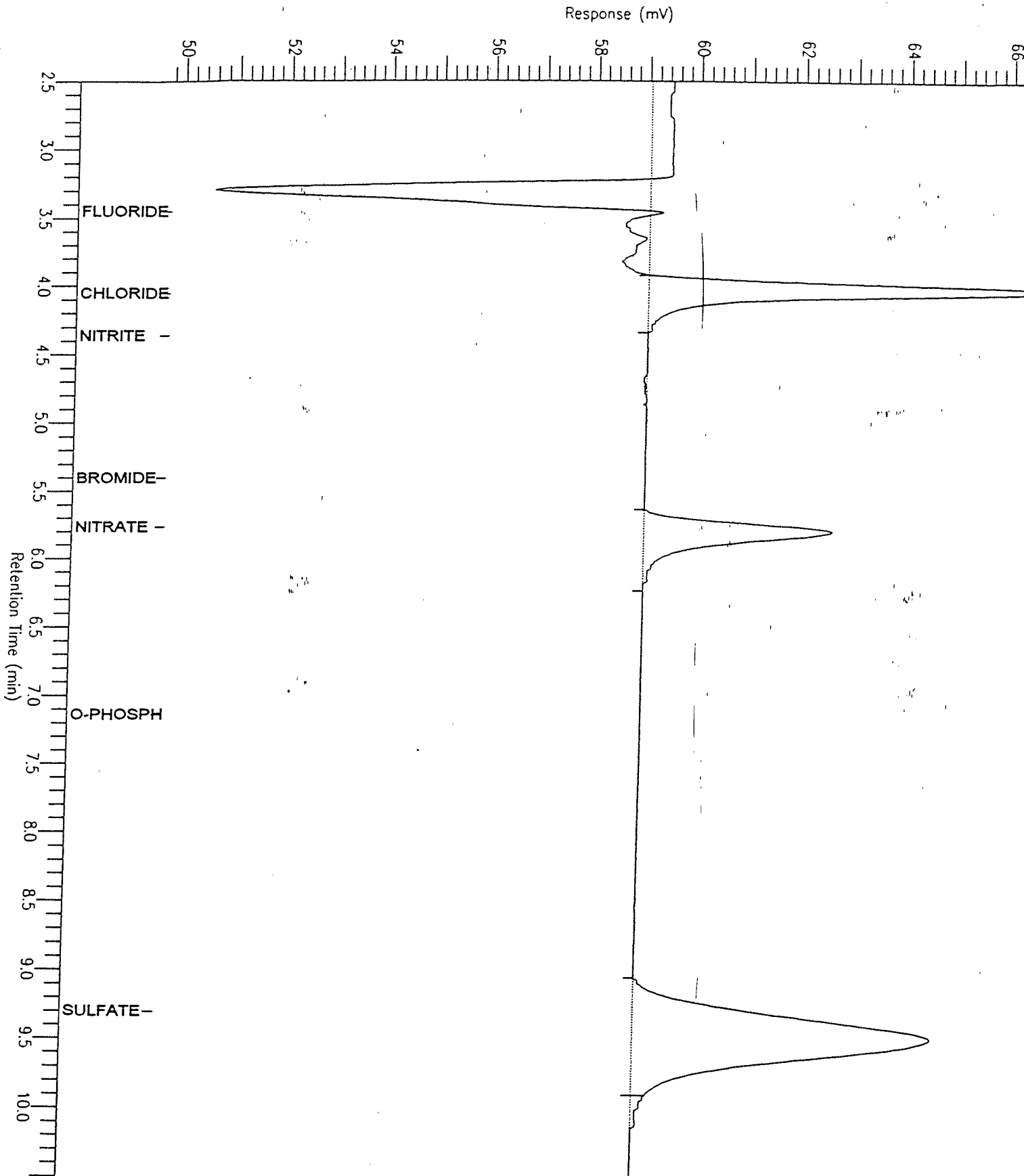
002675

Standard Anions by IC

Sample Name : 9607209*1
FileName : C:\TC4\DATA\JUL\0710064.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 50 mV

Sample #: 64
Date : 7/10/96 10:33 PM
Time of Injection: 7/10/96 10:23 PM
Low Point : 49.76 mV
Plot Scale: 17.2 mV
Page 1 of 1
High Point : 66.94 mV



002676

Software Version: 4.0<1C29>

Date: 7/10/96 10:43 PM

Sample Name : CCV

Data File : C:\TC4\DATA\JUL\0710065.RAW Date: 7/10/96 10:34 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 65 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	327625.00	4.880	1.00	91% 4.880
Chloride	4.06	954792.00	18.600	1.00	43% 18.600
Nitrite	4.34	157743.00	4.573	1.00	91% 4.573
Bromide	5.32	179719.00	9.422	1.00	94% 9.422
Nitrate	5.64	649132.00	23.678	1.00	95% 23.678
o-Phosphate	7.14	113602.50	12.125	1.00	91% 12.125
Sulfate	9.20	1817595.50	47.738	1.00	95% 47.738

0710.1

(07-1286-1)

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0710065.TX0

<u>0710</u>	<u>BHP</u> <u>#0710.2</u>
NO3	Br (07-1329-1)
Cl (07-1339-1)	Cl (07-1331-1)
SO4 (07-1341-1)	NO2 (07-1333-1)
	NO3 (07-1335-1)
	SO4 (07-1337-1)

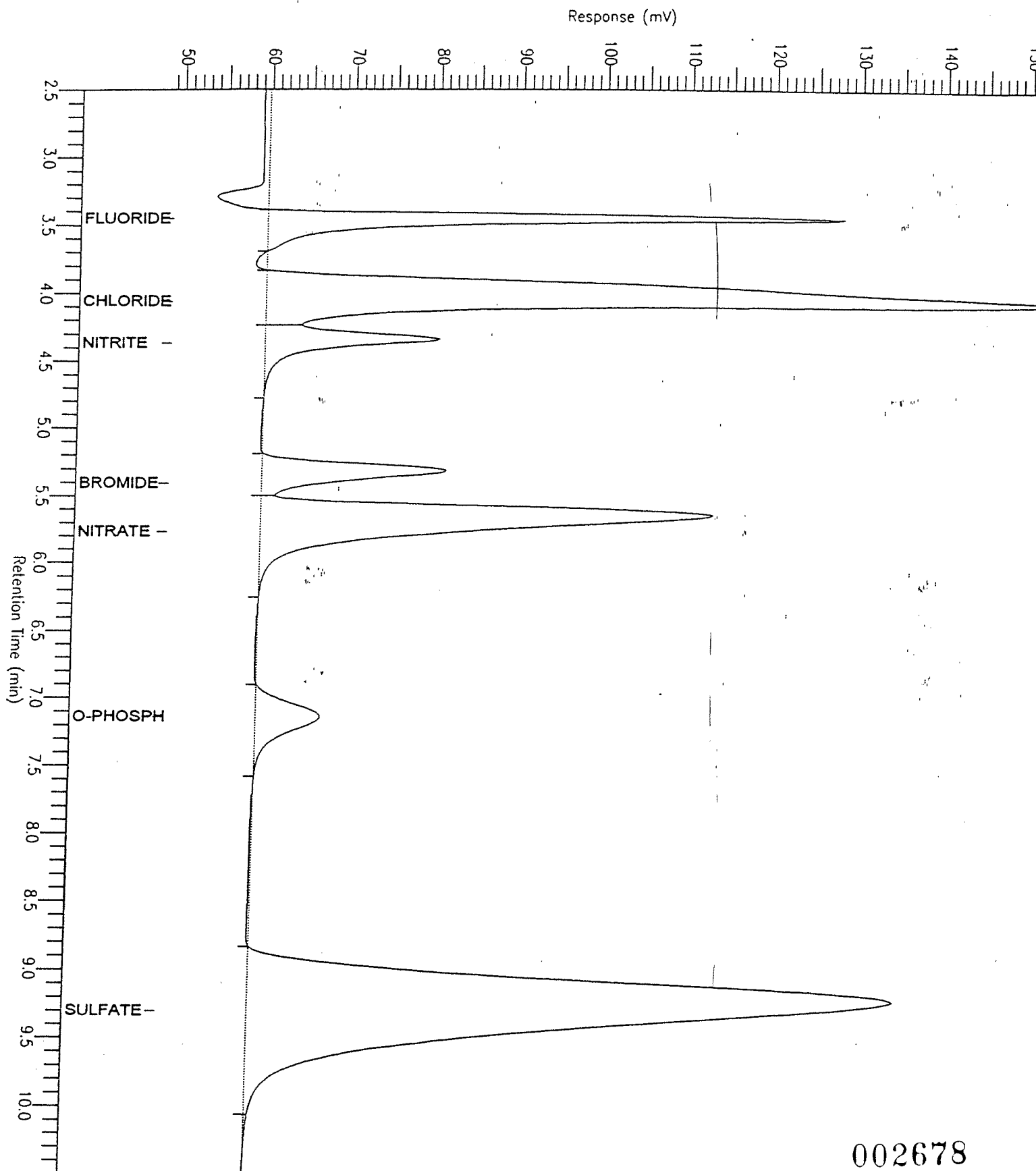
002677

Standard Anions by IC

Sample Name : CCV
FileName : C:\TC4\DATA\JUL\0710065.raw
Method : 0710
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 10.50 min
Plot Offset : 49 mV

Sample #: 65
Date : 7/10/96 10:43 PM
Time of Injection: 7/10/96 10:34 PM
Low Point : 48.81 mV
Plot Scale : 105.1 mV
Page 1 of 1
High Point : 153.67 mV



002678

Software Version: 4.0<1C29>

Date: 7/10/96 10:54 PM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0710066.RAW Date: 7/10/96 10:44 PM

Sequence File: C:\TC4\0710.SEQ Cycle: 66 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	0.00	0.000	-----	0.000
Chloride	4.06	0.00	0.000	-----	0.000
Nitrite	4.37	0.00	0.000	-----	0.000
Bromide	5.41	0.00	0.000	-----	0.000
Nitrate	5.77	0.00	0.000	-----	0.000
o-Phosphate	7.14	0.00	0.000	-----	0.000
Sulfate	9.30	0.00	0.000	-----	0.000

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0710066.TX0

002679

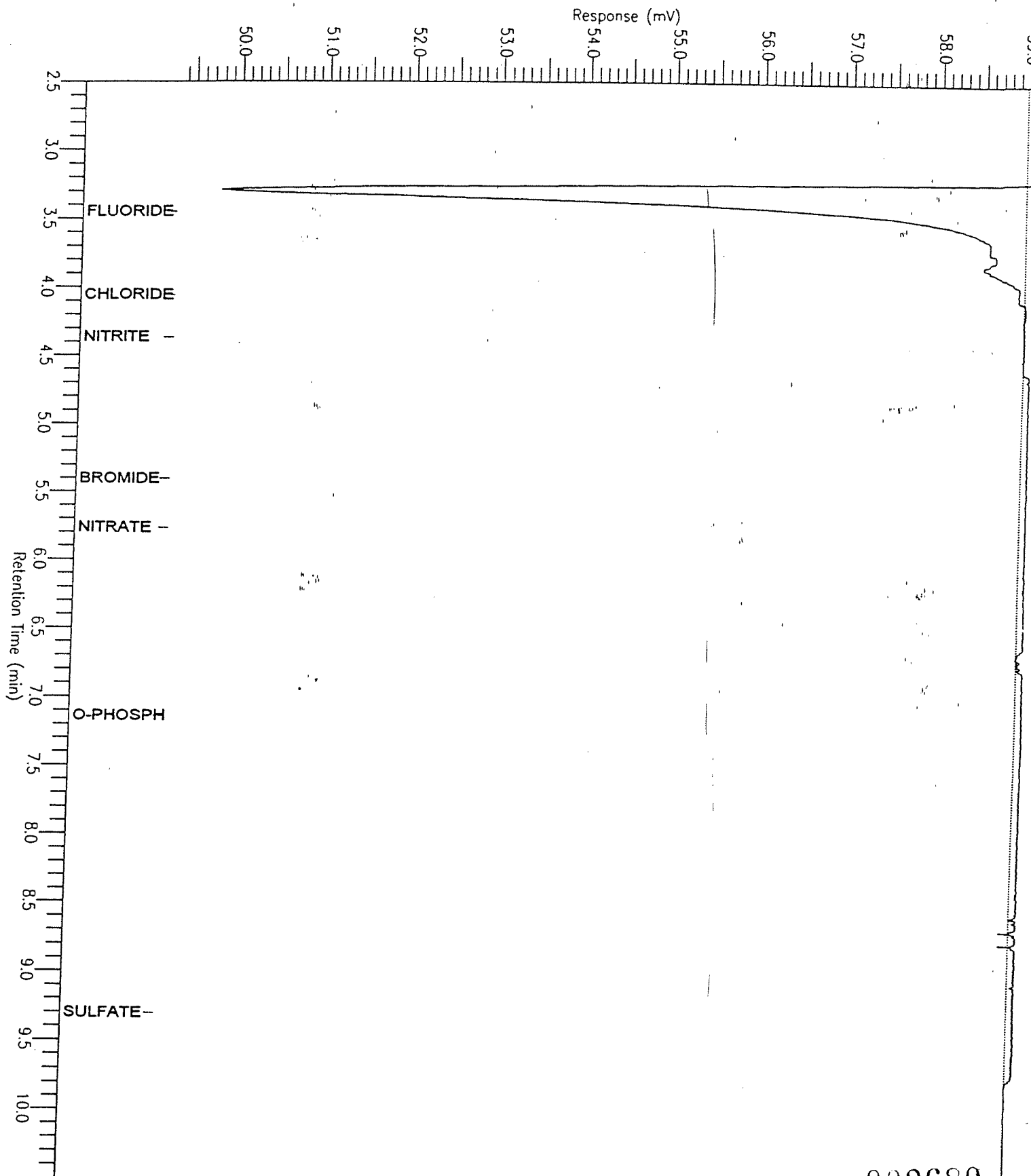
Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0710066.raw
Method : 0710
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 10.50 min
Plot Offset: 49 mV

Sample #: 66
Date : 7/10/96 10:54 PM
Time of Injection: 7/10/96 10:44 PM
Low Point : 49.30 mV
Plot Scale: 10.2 mV
High Point : 59.46 mV

Page 1 of 1



002680

Software Version: 4.0<1C29>

Date: 7/11/96 11:27 AM

Sample Name : ICV-LCS

Data File : C:\TC4\DATA\JUL\0711001.RAW Date: 7/11/96 11:17 AM

Sequence File: C:\TC4\0711.SEQ Cycle: 1 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst AHQ Batch 0711/0711
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	332315.00	4.947	1.00	4.947 99%
Chloride	4.11	946110.00	18.435	1.00	18.435 92%
Nitrite	4.40	164898.50	4.777	1.00	4.777 95%
Bromide	5.47	176840.50	9.272	1.00	9.272 93%
Nitrate	5.80	649485.00	23.691	1.00	23.691 95%
o-Phosphate	7.33	115984.00	12.375	1.00	12.375 99%
Sulfate	9.55	1811591.50	47.584	1.00	47.584 95%

=====
Reviewed and Approved by DW Date 7/15/96
=====

Working Elluent: GE9605011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711001.TXT

0711
Cl (07-1542-1)
NO₃ (07-1544-1)
SO₄ (07-1549-1)

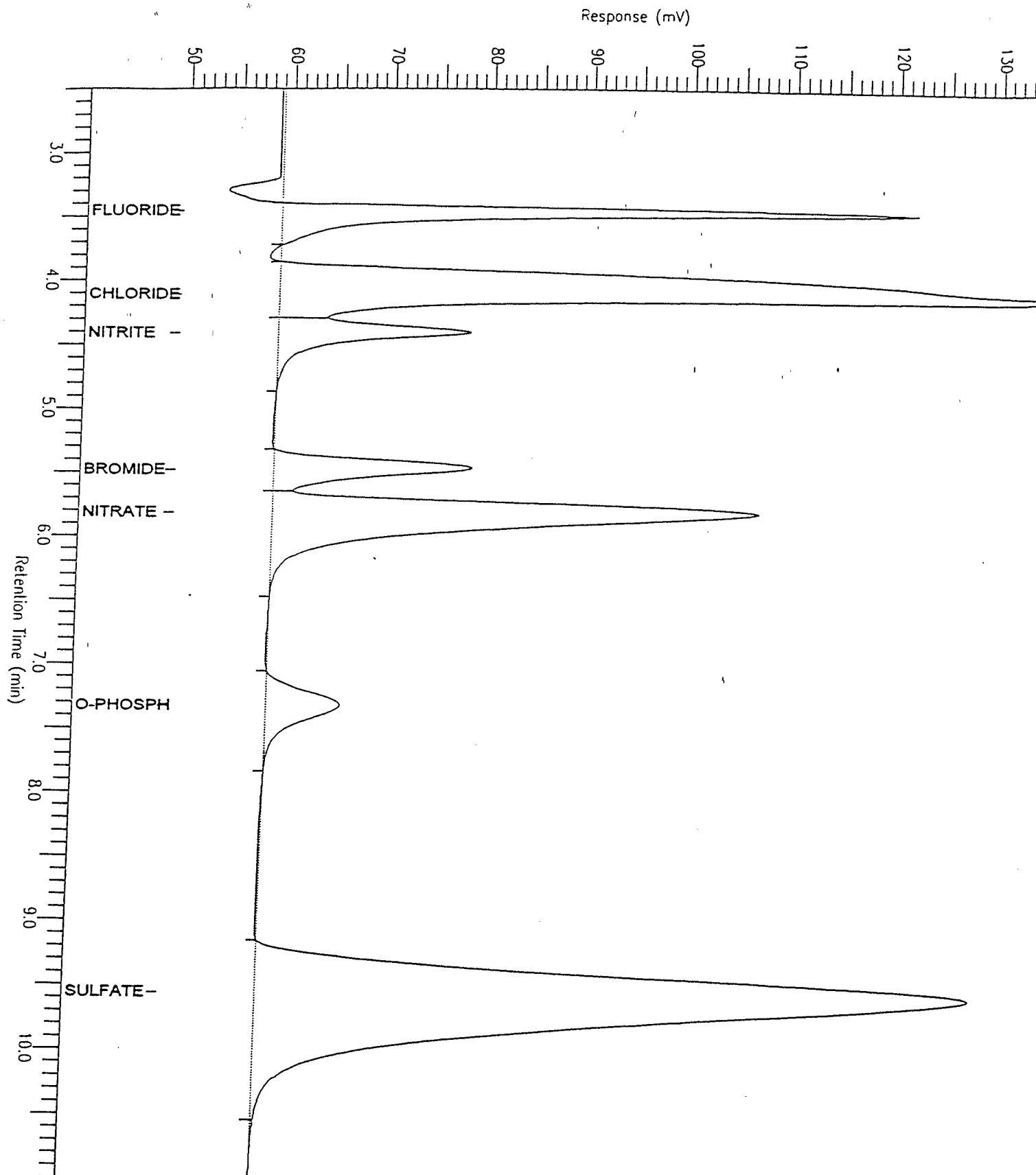
(BHP)
0711.1
Br (07-1556-1)
Cl (07-1559-1)
NO₂ (07-1561-1)
NO₃ (07-1563-1)
SO₄ (07-1565-1)

Standard Anions by IC

Sample Name : ICV-LCS
FileName : C:\IC4\DATA\JUL\0711001.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 1
Date : 7/11/96 11:27 AM
Time of Injection: 7/11/96 11:17 AM
Low Point : 49.53 mV
Plot Scale: 86.4 mV
Page 1 of 1
High Point : 137.95 mV



002683

ION CHROMATOGRAPHY SUMMARY REPORT

```

=====
Version Ayeka          533-23          Batch _____
Standard: GE9603003    LCS-CCV: GE9604001
Spike: 200uL GE9602020 / 5 mL    BHP Spike: 100uL GE9603010 / 5 mL
Working Elluent: GE9604011
=====
  
```

File Name	Sample Name	Fluoride		Chloride		Nitrite		Bromide		Nitrate	
		Reported Amount	Dilution Factor	Reported Amount	Dilution Factor	Reported Amount	Dilution Factor	Reported Amount	Dilution Factor	Reported Amount	Dilution Factor
0711001.	ICV-LCS	4.947	1.0	18.435	1.0	4.777	1.0	9.272	1.0	23.691	1.0
0711002.	ICB	-----	1.0	-----	1.0	-----	1.0	-----	1.0	-----	1.0
0711003.	GE9602016	6.234	1.0	136.865	1.0	18.776	1.0	-----	1.0	-----	1.0
0711004.	GE9602016	5.036	5.0	127.861	5.0	-----	5.0	-----	5.0	38.423	1.0
0711005.	9607215*1*R1	1.370	1.0	31.734	1.0	10.066	1.0	133.151	1.0	34.869	5.0
0711006.	9607215*1*S1	5.369	1.0	38.727	1.0	10.267	1.0	14.045	1.0	-----	1.0
0711007.	9607215*1*S2	5.478	1.0	40.453	1.0	7.908	1.0	14.369	1.0	108.894	1.0
0711008.	9607215*1*R1	-----	10.0	35.977	10.0	-----	10.0	-----	10.0	109.130	1.0
0711009.	9607215*1*S1	38.838	10.0	107.665	10.0	-----	10.0	159.645	10.0	80.184	10.0
0711010.	9607215*1*S2	39.259	10.0	108.266	10.0	-----	10.0	161.328	10.0	236.745	10.0
0711011.	9607215*2	0.613	1.0	10.266	1.0	-----	1.0	0.141	1.0	238.408	10.0
0711012.	9607215*2	-----	10.0	28.226	10.0	-----	10.0	-----	10.0	39.260	1.0
0711013.	CCV	4.915	1.0	18.494	1.0	4.642	1.0	-----	10.0	39.924	10.0
0711014.	CCB	-----	1.0	-----	1.0	-----	1.0	9.514	1.0	23.800	1.0
0711015.	9607215*3	0.538	1.0	19.164	1.0	9.582	1.0	-----	1.0	-----	1.0
0711016.	9607215*3	-----	10.0	25.759	10.0	-----	10.0	-----	1.0	34.902	1.0
0711017.	9607216*1	0.226	1.0	17.427	1.0	-----	1.0	0.113	10.0	35.288	10.0
0711018.	9607216*1	-----	10.0	18.964	10.0	-----	1.0	-----	1.0	20.317	1.0
0711019.	9607223*1	0.229	1.0	8.624	1.0	-----	1.0	0.206	10.0	28.752	10.0
0711020.	9607223*1	-----	10.0	20.350	10.0	-----	10.0	-----	1.0	27.809	1.0
0711021.	9607186*1	-----	10.0	81.942	10.0	-----	10.0	-----	10.0	29.135	10.0
0711022.	9607186*1	-----	25.0	80.030	25.0	-----	10.0	-----	10.0	-----	10.0
0711023.	9607228*1	4.797	1.0	42.977	1.0	20.984	1.0	-----	25.0	-----	25.0
0711024.	9607228*1	3.404	10.0	49.611	10.0	-----	1.0	-----	1.0	0.552	1.0
0711025.	CCV	4.933	1.0	18.512	1.0	4.650	1.0	-----	10.0	-----	10.0
0711026.	CCB	-----	1.0	-----	1.0	-----	1.0	9.479	1.0	23.778	1.0
0711027.	9607228*1	-----	25.0	53.319	25.0	-----	1.0	-----	1.0	-----	1.0
0711028.	9607228*2*R1	0.783	1.0	57.426	1.0	26.310	25.0	-----	25.0	-----	25.0
0711029.	9607228*2*S1	5.776	1.0	71.611	1.0	3.079	1.0	-----	1.0	-----	1.0
0711030.	9607228*2*S2	5.811	1.0	72.848	1.0	3.114	1.0	8.278	1.0	19.809	1.0
0711031.	9607228*2*R1	-----	10.0	64.303	10.0	-----	1.0	8.363	1.0	19.893	1.0
0711032.	9607228*2*S1	46.358	10.0	191.496	10.0	22.203	10.0	81.343	10.0	-----	10.0
0711033.	9607228*2*S2	46.621	10.0	192.080	10.0	22.908	10.0	61.834	10.0	194.763	10.0
0711034.	9607228*2*R1	-----	25.0	65.502	25.0	-----	10.0	-----	10.0	195.524	10.0
0711035.	9607228*2*S1	114.219	25.0	373.434	25.0	53.624	25.0	-----	25.0	-----	25.0
0711036.	9607228*2*S2	114.479	25.0	374.602	25.0	53.831	25.0	203.752	25.0	488.400	25.0
0711037.	CCV	4.895	1.0	18.352	1.0	4.652	25.0	204.378	25.0	488.843	25.0
0711038.	CCB	-----	1.0	-----	1.0	-----	1.0	9.430	1.0	23.627	1.0
0711039.	9607228*3	5.334	1.0	-----	1.0	-----	1.0	-----	1.0	-----	1.0
0711040.	9607228*3	-----	10.0	62.633	10.0	-----	1.0	-----	1.0	-----	1.0
0711041.	9607228*3	-----	25.0	59.792	25.0	-----	10.0	-----	10.0	-----	10.0
0711042.	9607228*4	2.867	1.0	500.420	1.0	-----	25.0	-----	25.0	-----	25.0
0711043.	9607228*4	-----	10.0	165.462	10.0	-----	1.0	0.330	1.0	71.313	1.0
0711044.	9607228*4	-----	25.0	389.781	25.0	-----	10.0	-----	10.0	63.174	10.0
0711045.	9607228*5	2.988	1.0	576.906	1.0	-----	25.0	-----	25.0	67.680	25.0
0711046.	9607228*5	-----	10.0	179.492	10.0	-----	1.0	117.841	1.0	-----	1.0
0711047.	9607228*5	-----	25.0	456.746	25.0	-----	10.0	-----	10.0	69.905	10.0
0711048.	9607228*6	2.998	1.0	574.643	1.0	-----	25.0	-----	25.0	76.277	25.0
0711049.	CCV	4.834	1.0	18.200	1.0	4.580	1.0	117.053	1.0	-----	1.0
0711050.	CCB	-----	1.0	-----	1.0	-----	1.0	9.333	1.0	23.360	1.0
0711051.	9607228*6	-----	10.0	177.095	10.0	-----	1.0	-----	1.0	-----	1.0
0711052.	9607228*6	-----	25.0	456.662	25.0	-----	10.0	-----	10.0	69.692	10.0
0711053.	9607228*7	0.803	1.0	130.052	1.0	22.040	25.0	-----	25.0	74.011	25.0
0711054.	9607228*7	-----	10.0	122.732	10.0	-----	1.0	-----	1.0	1.288	1.0
0711055.	9607228*7	-----	25.0	115.057	25.0	-----	10.0	-----	10.0	-----	10.0
0711056.	9607228*8	2.833	1.0	550.367	1.0	-----	25.0	-----	25.0	-----	25.0
0711057.	9607228*8	-----	10.0	173.116	10.0	-----	1.0	0.335	1.0	71.619	1.0
0711058.	9607228*8	-----	25.0	441.210	25.0	-----	10.0	-----	10.0	63.469	10.0
0711059.	9607228*9	0.594	1.0	134.179	1.0	22.755	25.0	-----	25.0	70.114	25.0
0711060.	9607228*9	-----	10.0	127.200	10.0	-----	1.0	0.137	1.0	1.941	1.0
0711061.	CCV	4.815	1.0	18.146	1.0	4.550	10.0	-----	10.0	8.072	10.0
0711062.	CCB	-----	1.0	-----	1.0	-----	1.0	9.285	1.0	23.183	1.0
0711063.	9607228*9	-----	25.0	120.303	25.0	-----	1.0	-----	1.0	-----	1.0
0711064.	CCV	4.810	1.0	18.036	1.0	4.566	25.0	-----	25.0	14.773	25.0
0711065.	CCB	-----	1.0	-----	1.0	-----	1.0	9.229	1.0	23.091	1.0

File Name	Sample Name	o-Phosphate		Sulfate	
		Reported Amount	Dilution Factor	Reported Amount	Dilution Factor
0711001.	ICV-LCS	12.375	1.0	47.584	1.0
0711002.	ICB	-----	1.0	-----	1.0

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0711003. GEF602016	-----	1.0	114.533	1.0
0711004. GEF602016	-----	5.0	100.765	5.0
0711005. 9607215*1*R1	-----	1.0	133.193	1.0
0711006. 9607215*1*S1	23.536	1.0	145.554	1.0
0711007. 9607215*1*S2	24.070	1.0	145.709	1.0
0711008. 9607215*1*R1	-----	10.0	119.298	10.0
0711009. 9607215*1*S1	259.230	10.0	265.746	10.0
0711010. 9607215*1*S2	263.894	10.0	265.875	10.0
0711011. 9607215*2	-----	1.0	49.221	1.0
0711012. 9607215*2	-----	10.0	52.477	10.0
0711013. CCV	12.372	1.0	47.802	1.0
0711014. CCB	-----	1.0	-----	1.0
0711015. 9607215*3	-----	1.0	62.522	1.0
0711016. 9607215*3	-----	10.0	62.473	10.0
0711017. 9607216*1	-----	1.0	23.935	1.0
0711018. 9607216*1	-----	10.0	30.987	10.0
0711019. 9607223*1	-----	1.0	31.246	1.0
0711020. 9607223*1	-----	10.0	36.852	10.0
0711021. 9607186*1	-----	10.0	124.175	10.0
0711022. 9607186*1	-----	25.0	129.834	25.0
0711023. 9607228*1	-----	1.0	98.976	1.0
0711024. 9607228*1	-----	10.0	91.549	10.0
0711025. CCV	12.205	1.0	47.572	1.0
0711026. CCB	-----	1.0	-----	1.0
0711027. 9607228*1	-----	25.0	101.605	25.0
0711028. 9607228*2*R1	-----	1.0	33.844	1.0
0711029. 9607228*2*S1	29.767	1.0	77.670	1.0
0711030. 9607228*2*S2	30.230	1.0	77.849	1.0
0711031. 9607228*2*R1	-----	10.0	38.622	10.0
0711032. 9607228*2*S1	294.729	10.0	428.171	10.0
0711033. 9607228*2*S2	299.297	10.0	431.034	10.0
0711034. 9607228*2*R1	-----	25.0	52.153	25.0
0711035. 9607228*2*S1	742.839	25.0	1017.889	25.0
0711036. 9607228*2*S2	745.165	25.0	1021.058	25.0
0711037. CCV	12.541	1.0	47.379	1.0
0711038. CCB	-----	1.0	-----	1.0
0711039. 9607228*3	-----	1.0	-----	1.0
0711040. 9607228*3	-----	10.0	-----	10.0
0711041. 9607228*3	-----	25.0	1979.208	25.0
0711042. 9607228*4	-----	1.0	-----	1.0
0711043. 9607228*4	-----	10.0	246.527	10.0
0711044. 9607228*4	-----	25.0	238.999	25.0
0711045. 9607228*5	-----	1.0	-----	1.0
0711046. 9607228*5	-----	10.0	300.932	10.0
0711047. 9607228*5	-----	25.0	293.198	25.0
0711048. 9607228*6	-----	1.0	-----	1.0
0711049. CCV	11.726	1.0	46.853	1.0
0711050. CCB	-----	1.0	-----	1.0
0711051. 9607228*6	-----	10.0	300.890	10.0
0711052. 9607228*6	-----	25.0	290.139	25.0
0711053. 9607228*7	-----	1.0	64.304	1.0
0711054. 9607228*7	-----	10.0	64.032	10.0
0711055. 9607228*7	-----	25.0	75.715	25.0
0711056. 9607228*8	-----	1.0	-----	1.0
0711057. 9607228*8	-----	10.0	262.075	10.0
0711058. 9607228*8	-----	25.0	258.313	25.0
0711059. 9607228*9	-----	1.0	51.894	1.0
0711060. 9607228*9	-----	10.0	54.376	10.0
0711061. CCV	11.836	1.0	46.744	1.0
0711062. CCB	-----	1.0	-----	1.0
0711063. 9607228*9	-----	25.0	66.412	25.0
0711064. CCV	11.836	1.0	46.676	1.0
0711065. CCB	-----	1.0	-----	1.0

Sample Analyzed on: _____ / _____ / _____ By: _____

Data Approved By: _____ on _____

Note: Tsuki Ni Kawatte Oshioki Yo

Software Version: 4.0<1C29>

Date: 7/11/96 11:40 AM

Sample Name : ICB

Data File : C:\TC4\DATA\JUL\0711002.RAW Date: 7/11/96 11:30 AM

Sequence File: C:\TC4\0711.SEQ Cycle: 2 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.12	0.00	0.000	-----	0.000
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0711002.TX0

0711

Cl (07-826-1)
NO₃ (07-827-1)
SO₄ (07-829-1)

(BHP)

0711.1

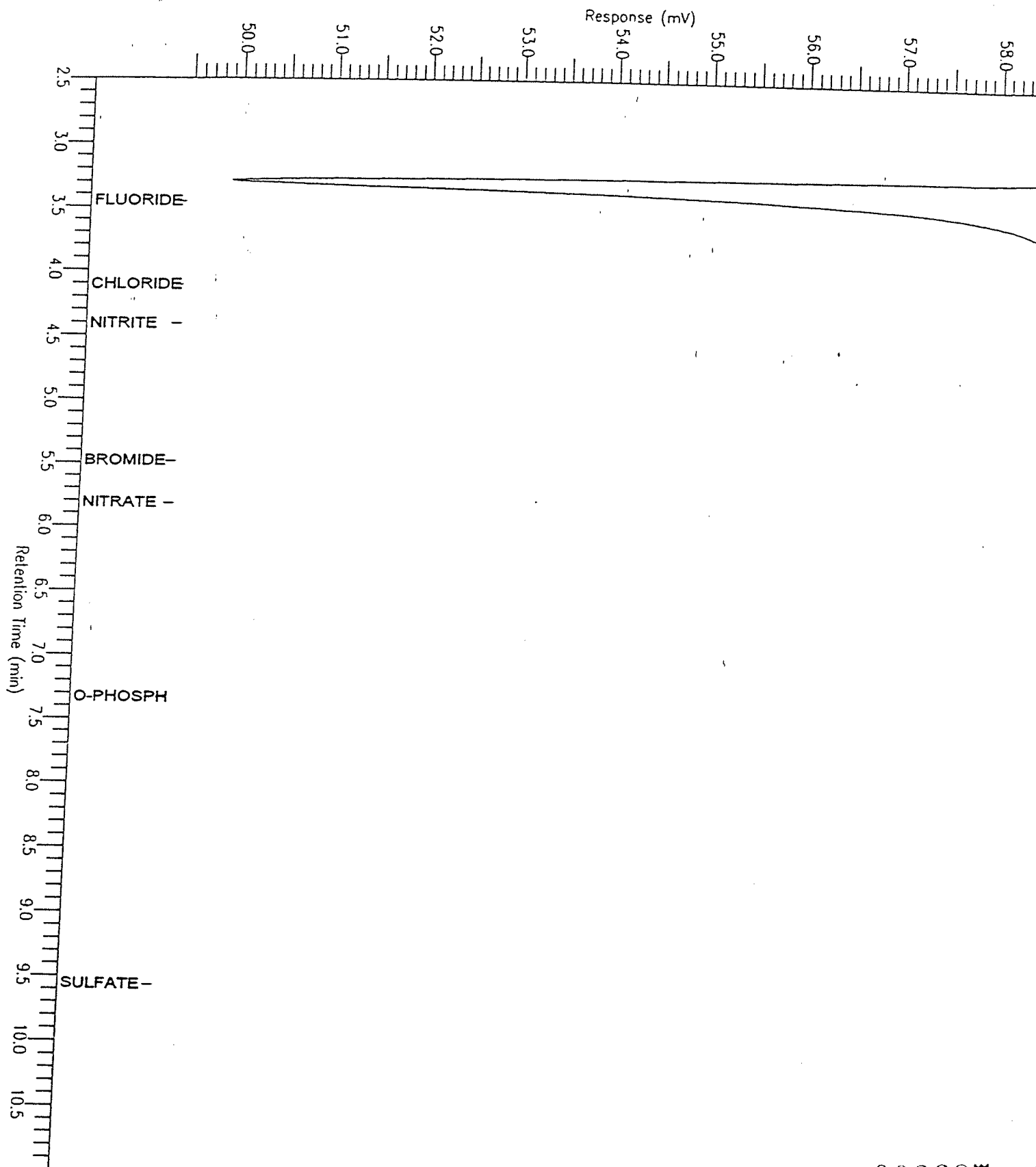
Br (07-836-1)
Cl (07-838-1)
NO₂ (07-839-1)
NO₃ (07-841-1)
SO₄ (07-842-1)

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Standard Anions by IC

Sample Name : ICB
FileName : C:\TC4\DATA\JUL\0711002.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0
End Time : 11.00 min
Plot Offset: 49 mV

Sample #: 2
Date : 7/11/96 11:40 AM
Time of Injection: 7/11/96 11:30-AM
Low Point : 49.46 mV
Plot Scale: 9.4 mV
Page 1 of 1
High Point : 58.91 mV



002687

Software Version: 4.0<1C29>

Date: 7/11/96 11:51 AM

Sample Name : GE9602016

Data File : C:\TC4\DATA\JUL\0711003.RAW Date: 7/11/96 11:41 AM

Sequence File: C:\TC4\0711.SEQ Cycle: 3 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.51	422135.50	6.234	1.00	6.234
Chloride	4.14	7162602.00	136.865	1.00	136.865
Nitrite	4.49	655760.00	18.776	1.00	18.776
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.74	1062834.00	38.423	1.00	38.423
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.31	4412106.00	114.533	1.00	114.533

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0711003.TXT

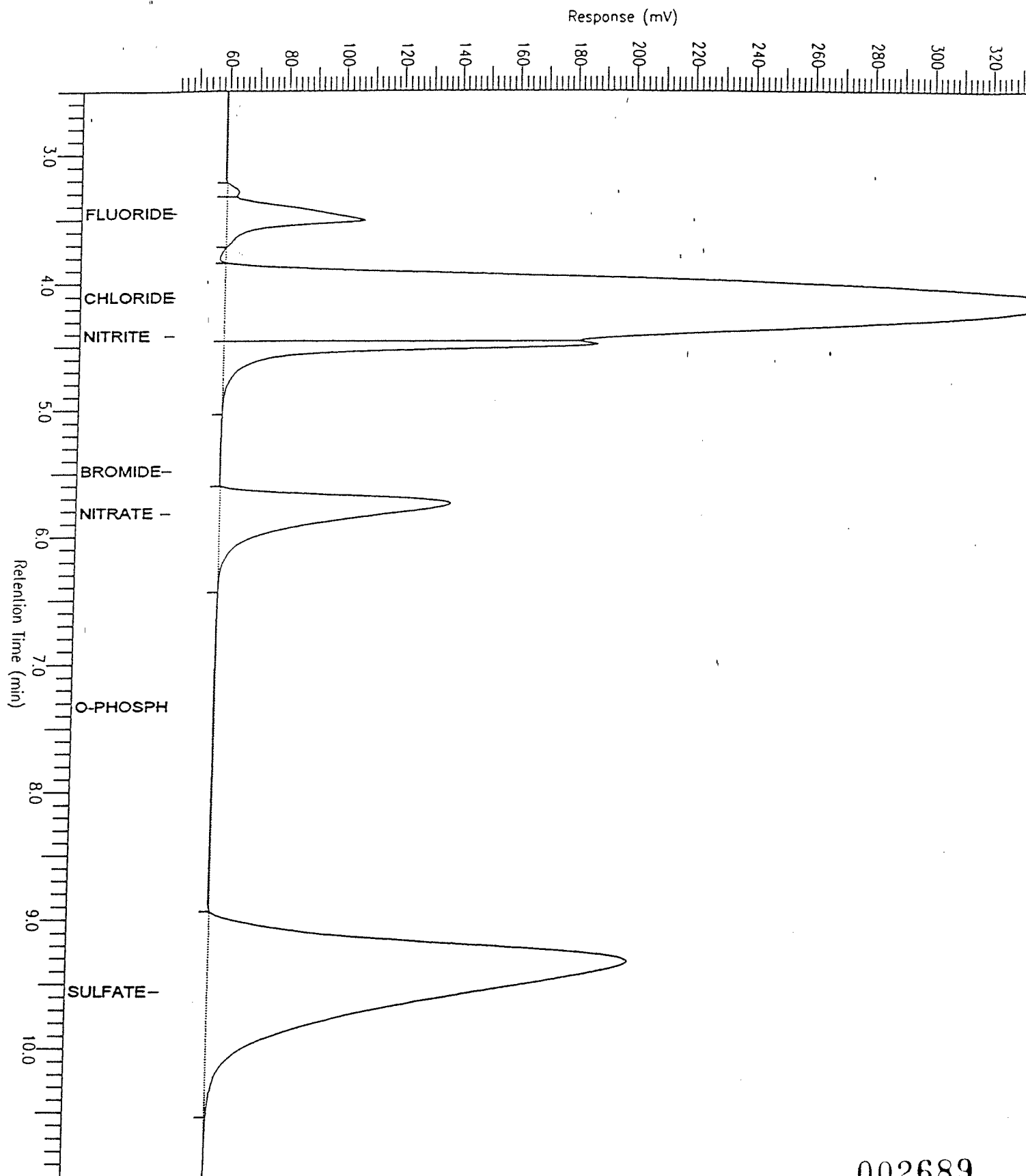
Standard Anions by IC

Sample Name : GE9602016
FileName : C:\TC4\DATA\JUL\0711003.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 43 mV

Sample #: 3
Date : 7/11/96 11:51 AM
Time of Injection: 7/11/96 11:41 AM
Low Point : 42.94 mV
Plot Scale: 302.8 mV
High Point : 345.73 mV

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Software Version: 4.0<1C29>

Date: 7/11/96 12:02 PM

Sample Name : GE9602016

Data File : C:\TC4\DATA\JUL\0711004.RAW Date: 7/11/96 11:52 AM

Sequence File: C:\TC4\0711.SEQ Cycle: 4 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 5.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.47	57201.50	1.007	5.00	5.036
Chloride	4.20	1320764.50	25.572	5.00	127.861
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.87	180462.50	6.974	5.00	34.869
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.70	746102.50	20.153	5.00	100.765

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711004.TX0

002690

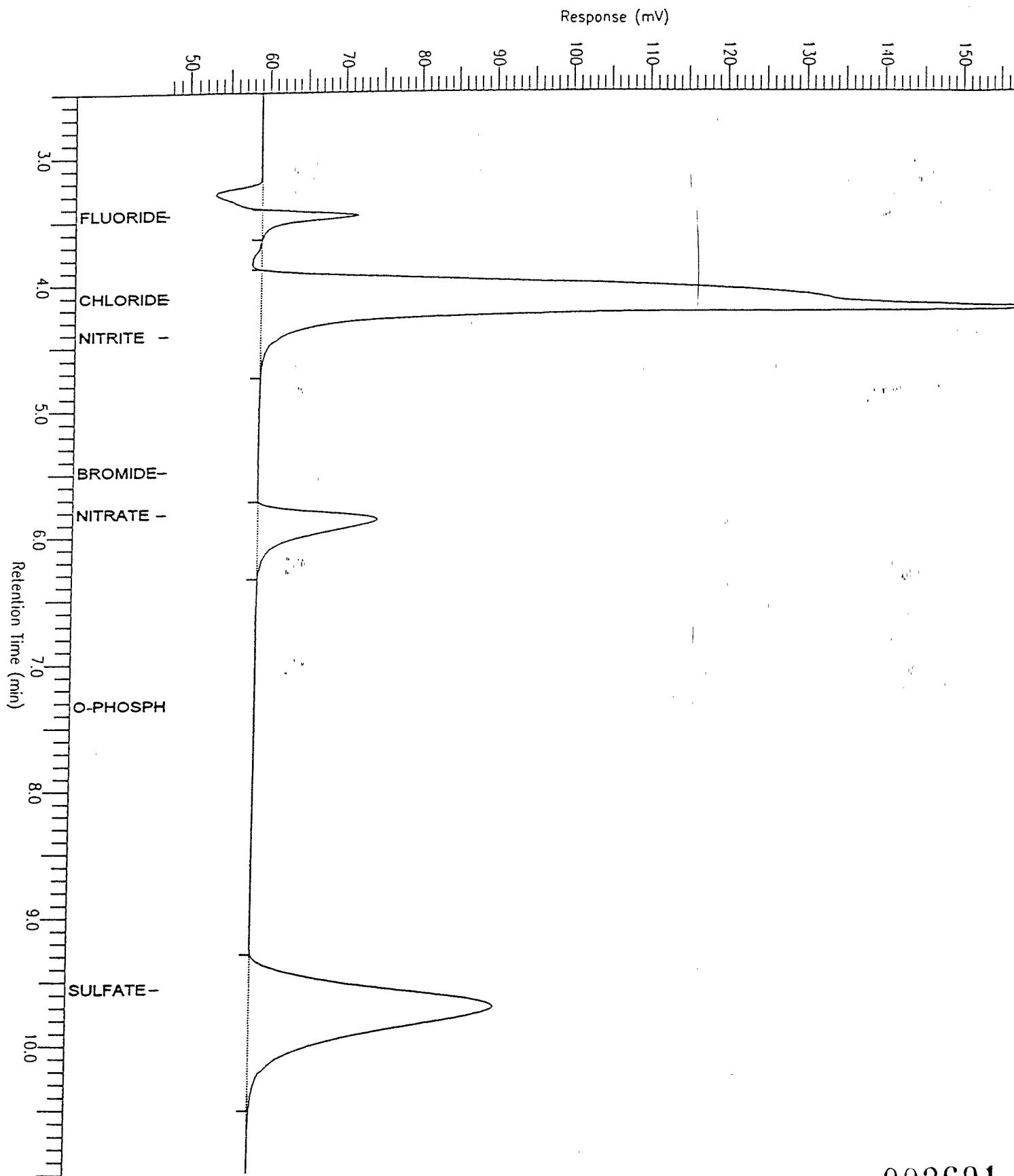
Standard Anions by IC

Sample Name : GE9602016
FileName : C:\TC4\DATA\JUL\0711004.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 48 mV

Sample #: 4
Date : 7/11/96 12:02 PM
Time of Injection: 7/11/96 11:52 AM
Low Point : 47.57 mV
Plot Scale: 115.1 mV
High Point : 162.67 mV

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Software Version: 4.0<1C29>

Date: 7/11/96 01:26 PM

Sample Name : 9607215*1*R1

Data File : C:\TC4\DATA\JUL\0711005.RAW Date: 7/11/96 01:16 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 5 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
---------------	-------------------	---------	-------

=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.29	82506.00	1.370	1.00	1.370
Chloride	4.11	1644199.50	31.734	1.00	31.734
Nitrite	4.28	350375.50	10.066	1.00	10.066
Bromide	5.65	2561245.50	133.151	1.00	133.151
Nitrate	5.82	0.00	0.000	-----	0.0000R
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.27	5136934.50	133.193	1.00	133.1930R

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711005.TX0

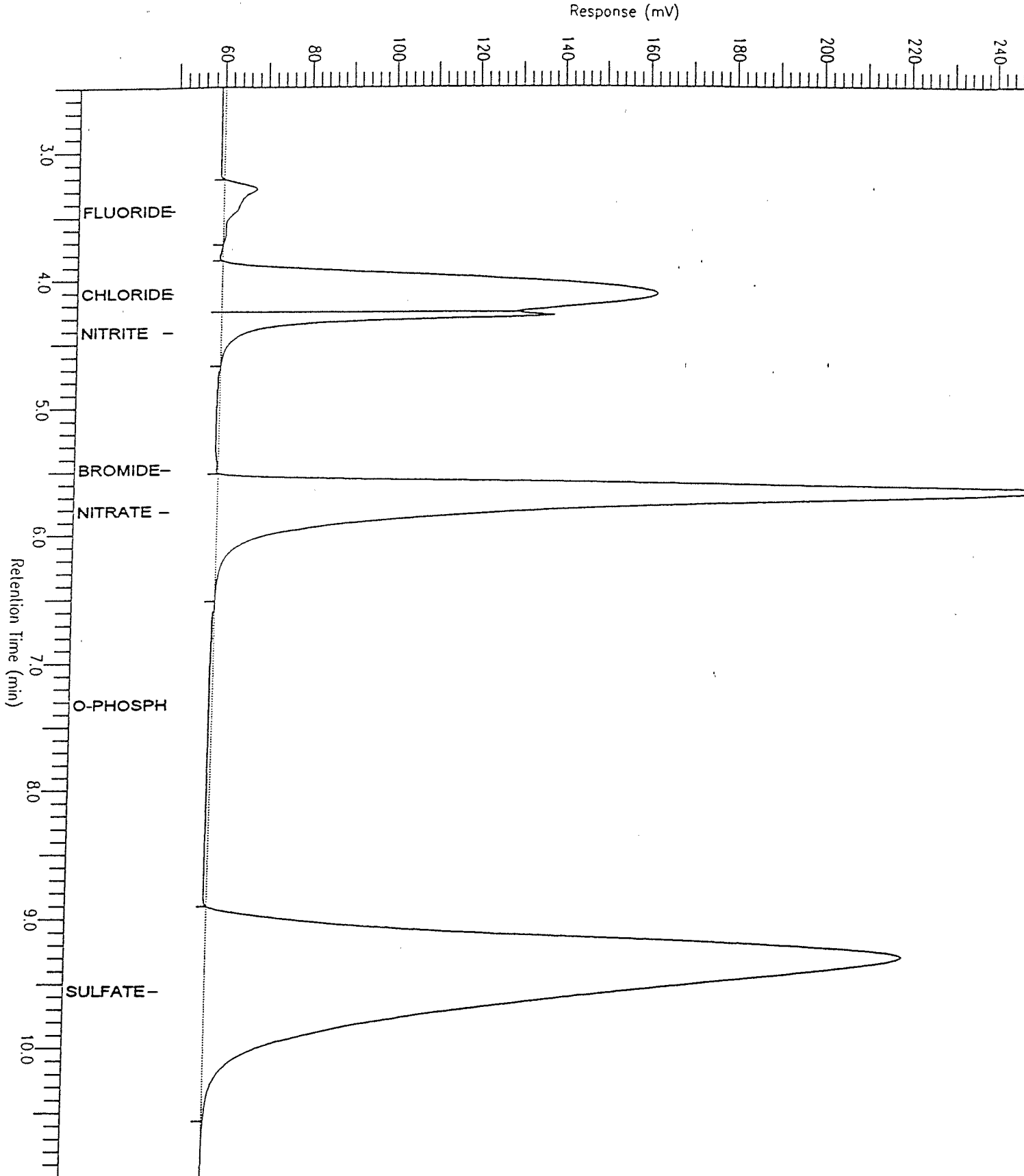
002692

Standard Anions by IC

Sample Name : 9607215-1-R1
FileName : C:\TC4\DATA\JUL\0711005.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

Sample #: 5
Date : 7/11/96 01:26 PM
Time of Injection: 7/11/96 01:16 PM
Low Point : 49.31 mV
Plot Scale: 208.0 mV

Page 1 of 1



002693

Software Version: 4.0<1C29>

Date: 7/11/96 01:51 PM

Sample Name : 9607215*1*S1

Data File : C:\TC4\DATA\JUL\0711006.RAW Date: 7/11/96 01:41 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 6 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.43	361743.50	5.369	1.00	5.369
Chloride	4.09	2011244.50	38.727	1.00	38.727
Nitrite	4.27	358114.00	10.287	1.00	10.287
Bromide	5.42	268715.00	14.045	1.00	14.045
Nitrate	5.64	3039996.00	108.894	1.00	108.894
o-Phosphate	7.32	222178.00	23.536	1.00	23.536
Sulfate	9.24	5617058.00	145.554	1.00	145.554

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

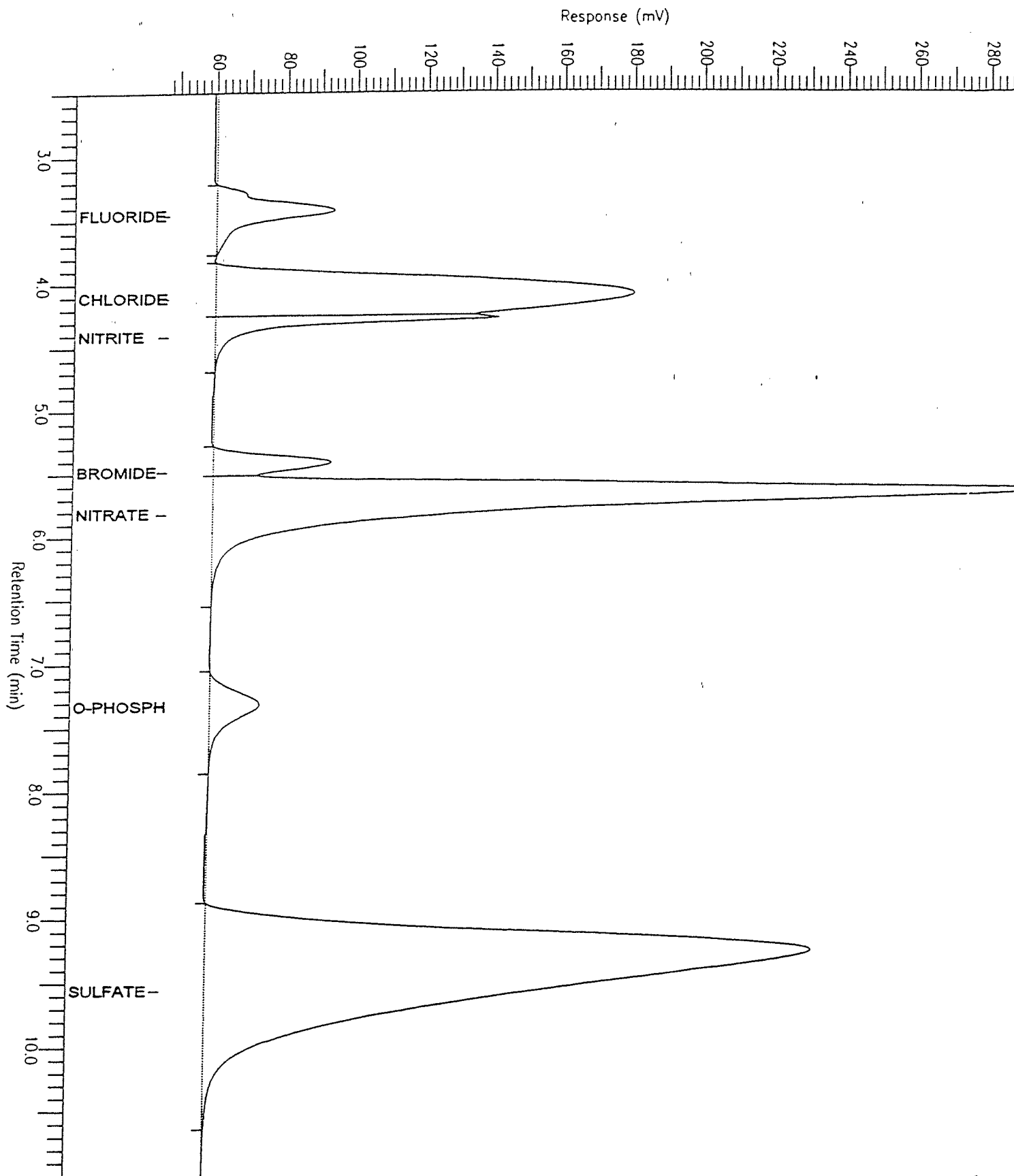
Report stored in ASCII file: C:\TC4\DATA\JUL\0711006.TX0

002694

Standard Anions by IC

Sample Name : 9607215-1-S1
FileName : C:\TC4\DATA\JUL\0711006.raw
Method : 0711
Start Time : 2:50 min
Scale Factor : 1.0
End Time : 11:00 min
Plot Offset: 47 mV

Sample #: 6
Date : 7/11/96 01:51 PM
Time of Injection: 7/11/96 01:41 PM
Low Point : 47.13 mV
Plot Scale: 253.5 mV
Page 1 of 1
High Point : 300.59 mV



002695

Software Version: 4.0<1C29>

Date: 7/11/96 02:02 PM

Sample Name : 9607215*1*S2

Data File : C:\TC4\DATA\JUL\0711007.RAW Date: 7/11/96 01:52 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 7 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.43	369393.50	5.478	1.00	5.478
Chloride	4.09	2101670.00	40.453	1.00	40.453
Nitrite	4.29	274685.50	7.908	1.00	7.908
Bromide	5.43	274950.50	14.369	1.00	14.369
Nitrate	5.65	3046615.50	109.130	1.00	109.130
o-Phosphate	7.33	227252.50	24.070	1.00	24.070
Sulfate	9.26	5623085.00	145.709	1.00	145.709

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

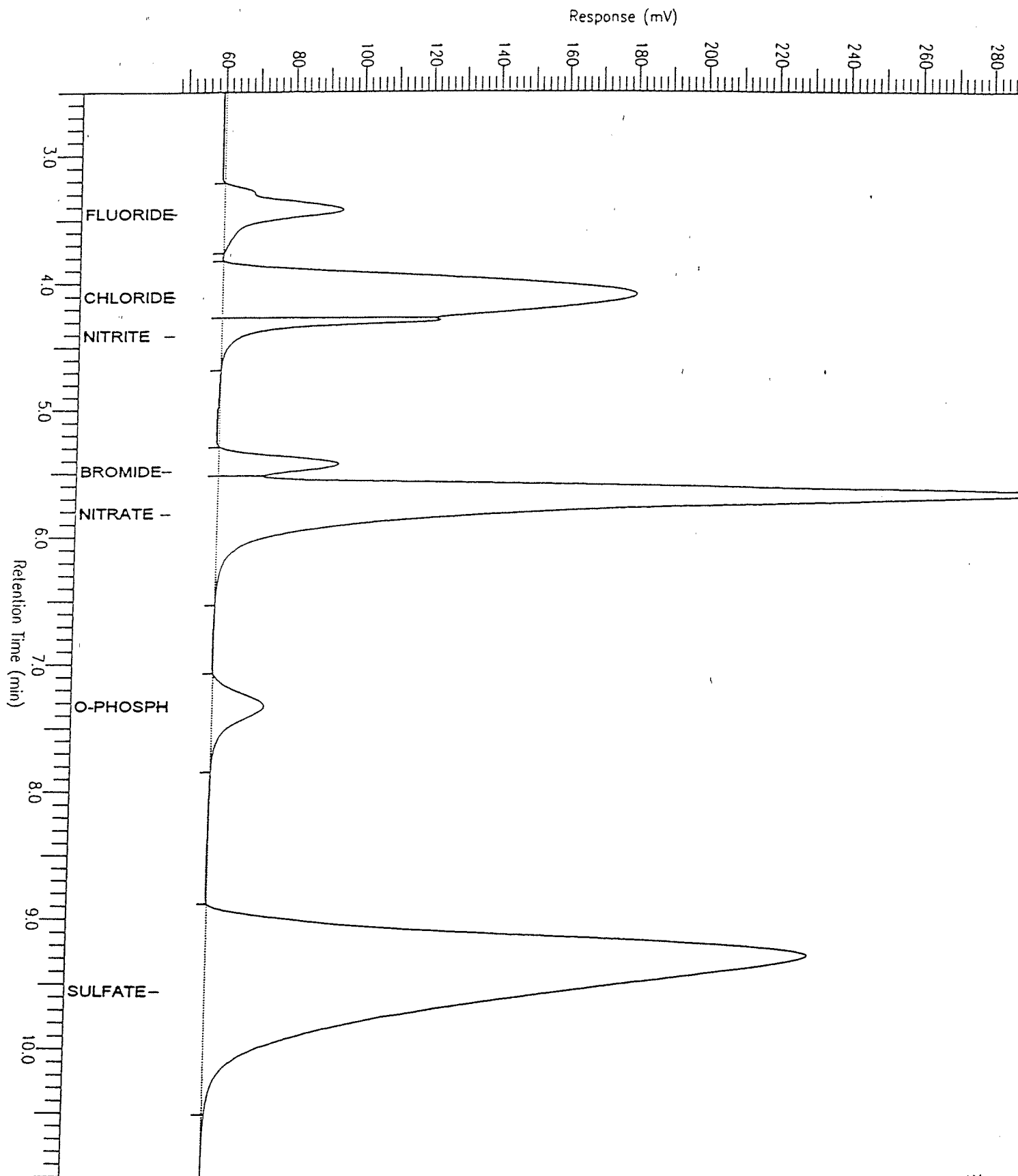
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Report stored in ASCII file: C:\TC4\DATA\JUL\0711007.TX0

Standard Anions by IC

Sample Name : 9607215-1-S2
FileName : C:\TC4\DATA\JUL\0711007.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0
End Time : 11.00 min
Plot Offset : 47 mV

Sample #: 7
Date : 7/11/96 02:02 PM
Time of Injection: 7/11/96 01:52 PM
Low Point : 47.11 mV
Plot Scale: 255.3 mV
High Point : 302.44 mV

Page 1 of 1



002697

Software Version: 4.0<1C29>

Date: 7/11/96 02:13 PM

Sample Name : 9607215*1*R1

Data File : C:\TC4\DATA\JUL\0711008.RAW Date: 7/11/96 02:03 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 8 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.07	167315.50	3.598	10.00	35.977
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	209768.00	8.018	10.00	80.184
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.75	426694.00	11.930	10.00	119.298

=====

=====
Reviewed and Approved by _____ Date _____
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Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

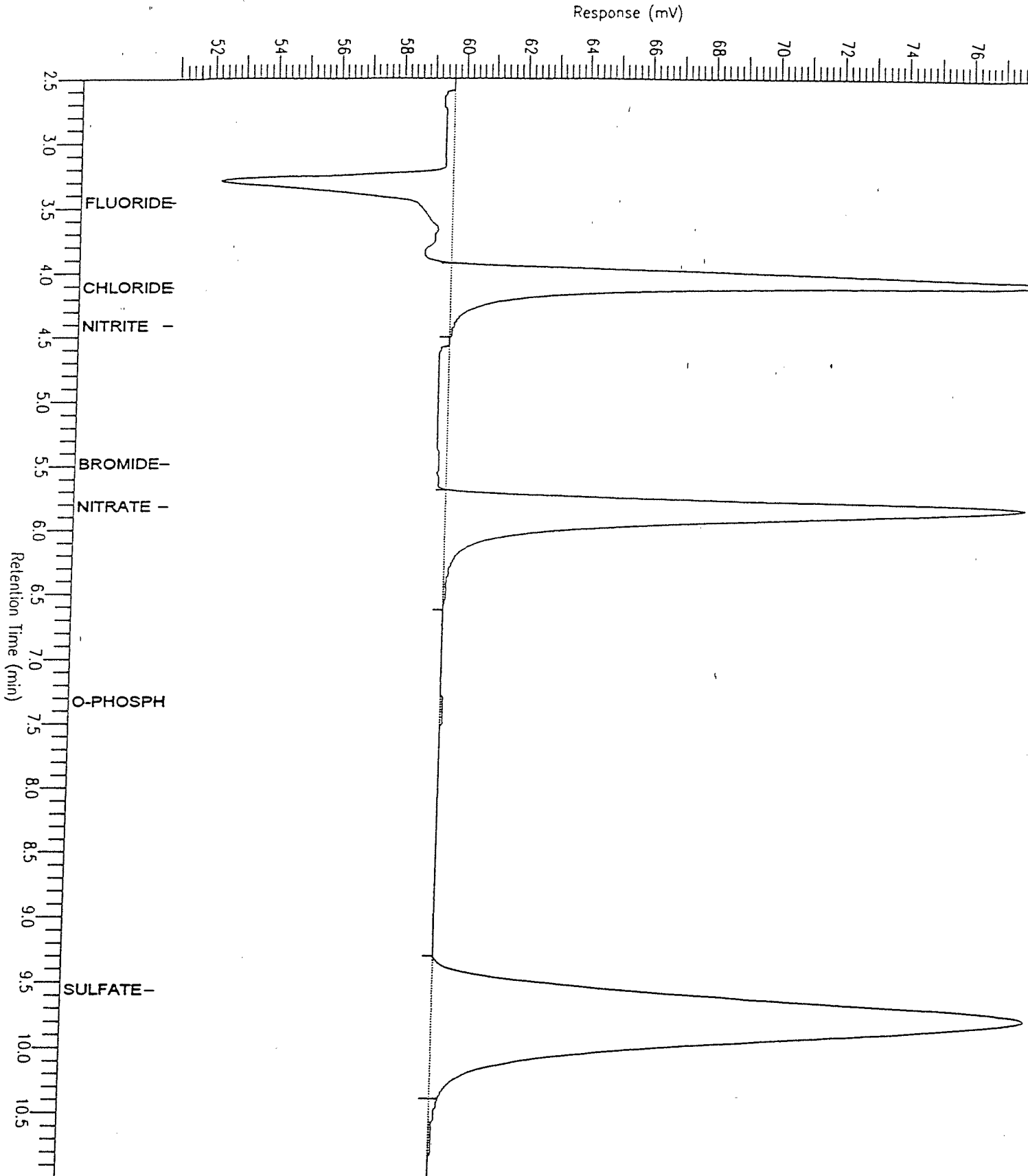
Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0711008.TX0

Standard Anions by IC

Sample Name : 9607215-1-R1
FileName : C:\TC4\DATA\JUL\0711008.raw
Method : 0711
Start Time : 2450 min
Scale Factor: 1.0
End Time : 11.00 min
Plot Offset: 51 mV

Sample #: 8
Date : 7/11/96 02:13 PM
Time of Injection: 7/11/96 02:03 PM
Low Point : 50.88 mV
Plot Scale: 26.5 mV
Page 1 of 1
High Point : 79.35 mV



002699

Software Version: 4.0<1C29>

Date: 7/11/96 02:24 PM

Sample Name : 9607215*1*S1

Data File : C:\TC4\DATA\JUL\0711009.RAW Date: 7/11/96 02:14 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 9 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	258063.50	3.884	10.00	38.838
Chloride	4.09	543607.50	10.766	10.00	107.66590%
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.40	305656.00	15.965	10.00	159.645
Nitrate	5.74	649025.00	23.674	10.00	236.74591%
o-Phosphate	7.32	244887.00	25.923	10.00	259.230
Sulfate	9.64	995541.00	26.575	10.00	265.74691%

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

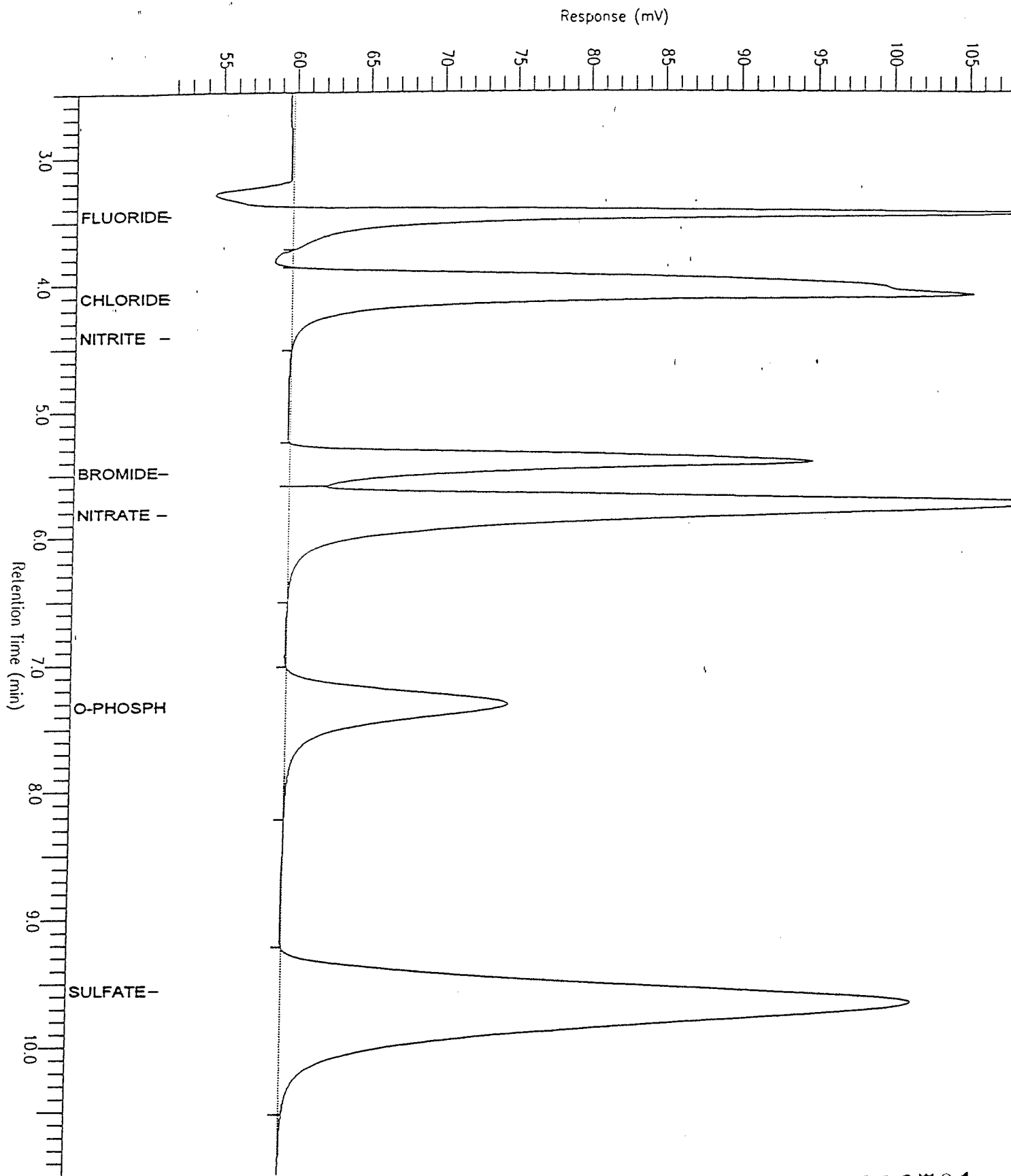
Report stored in ASCII file: C:\TC4\DATA\JUL\0711009.TX0

Standard Anions by IC

Sample Name : 9607215-1-S1
FileName : C:\TC4\DATA\JUL\0711009.raw
Method : 0711
Start Time : 2:50 min
Scale Factor : 1.0

End Time : 11:00 min
Plot Offset: 52 mV

Sample #: 9
Date : 7/11/96 02:24 PM
Time of Injection: 7/11/96 02:14 PM
Low Point : 51.61 mV
Plot Scale: 59.6 mV
Page 1 of 1
High Point : 111.19 mV



002701

Software Version: 4.0<1C29>

Date: 7/11/96 02:35 PM

Sample Name : 9607215*1*S2

Data File : C:\TC4\DATA\JUL\0711010.RAW Date: 7/11/96 02:25 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 10 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	261000.00	3.926	10.00	39.259
Chloride	4.09	546761.50	10.627	10.00	108.266 $\mu\text{g/L}$ $\text{F} = 116$
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.40	308895.00	16.133	10.00	161.328
Nitrate	5.74	653691.50	23.841	10.00	238.408 $\mu\text{g/L}$ $\text{F} = 240$
o-Phosphate	7.32	249324.50	26.389	10.00	263.894
Sulfate	9.64	996042.50	26.588	10.00	265.875 $\mu\text{g/L}$ $\text{F} = 279$

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Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711010.TX0

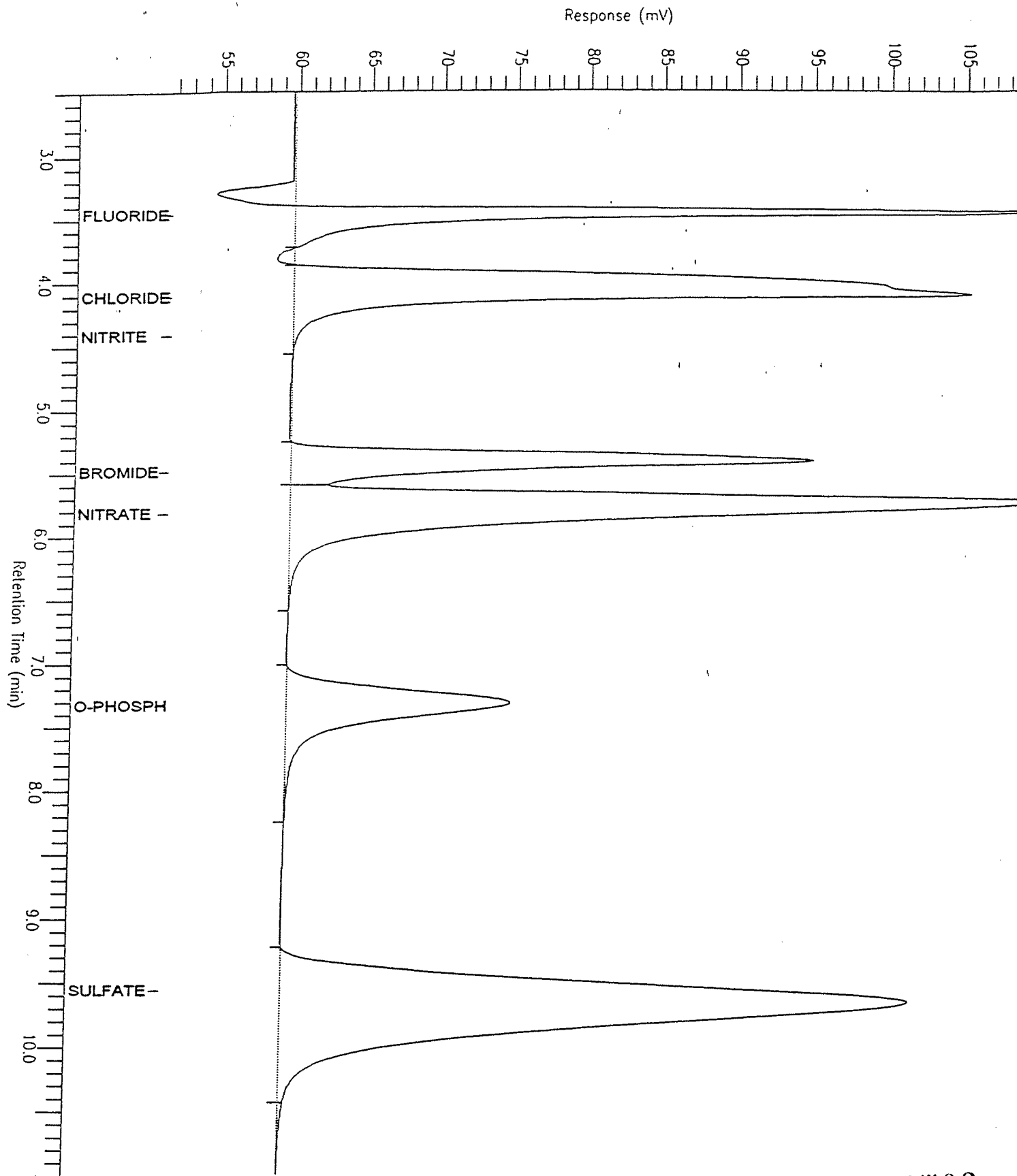
Standard Anions by IC

Sample Name : 9607215-1-S2
FileName : C:\TC4\DATA\JUL\0711010.raw
Method : 0711
Start Time : 21:50 min
Scale Factor: 1.0

End Time : 11:00 min
Plot Offset: 52 mV

Sample #: 10
Date : 7/11/96 02:35 PM
Time of Injection: 7/11/96 02:25 PM
Low Point : 51.60 mV
Plot Scale: 60.2 mV
High Point : 111.61 mV

Page 1 of 1



002703

Software Version: 4.0<1C29>

Date: 7/11/96 02:46 PM

Sample Name : 9607215*2

Data File : C:\TC4\DATA\JUL\0711011.RAW Date: 7/11/96 02:36 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 11 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	29684.00	0.613	1.00	0.613
Chloride	4.22	517348.00	10.266	1.00	10.266
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.43	1092.50	0.141	1.00	0.141
Nitrate	5.70	1086315.00	39.260	1.00	39.260
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.53	1875215.00	49.221	1.00	49.221

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And resolution Sec. 10

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Reviewed and Approved by _____ Date _____
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Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711011.TX0

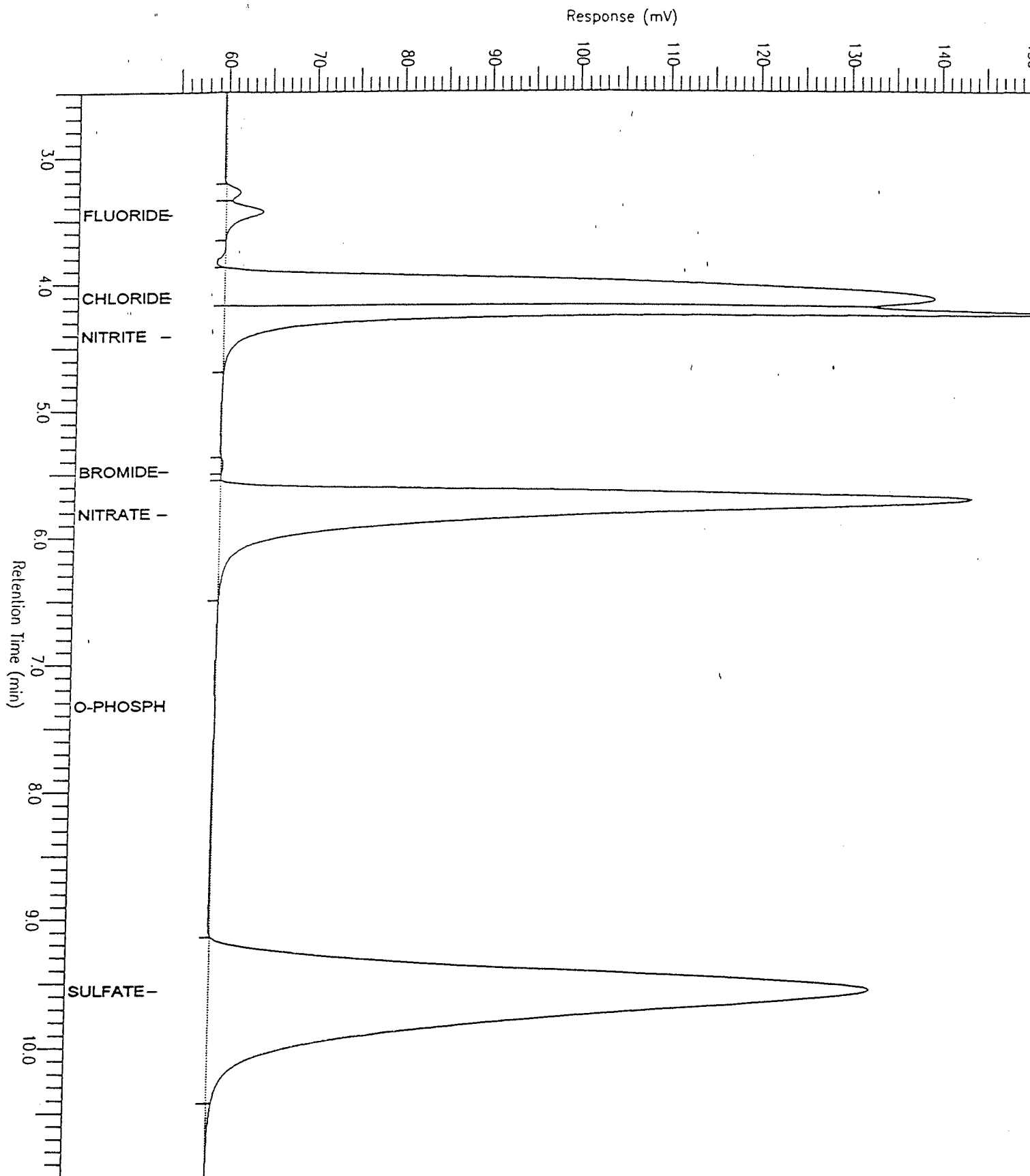
Standard Anions by IC

Sample Name : 9607215-2
FileName : C:\TC4\DATA\JUL\0711011.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 54 mV

Sample #: 11
Date : 7/11/96 02:46 PM
Time of Injection: 7/11/96 02:36 PM
Low Point : 54.12 mV
Plot Scale: 100.4 mV
High Point : 154.51 mV

Page 1 of 1



002705

Software Version: 4.0<1C29>

Date: 7/11/96 02:57 PM

Sample Name : 9607215*2

Data File : C:\TC4\DATA\JUL\0711012.RAW Date: 7/11/96 02:47 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 12 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.06	126630.00	2.823	10.00	28.226
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.85	96612.50	3.992	10.00	39.924
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.81	167140.50	5.248	10.00	52.477

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

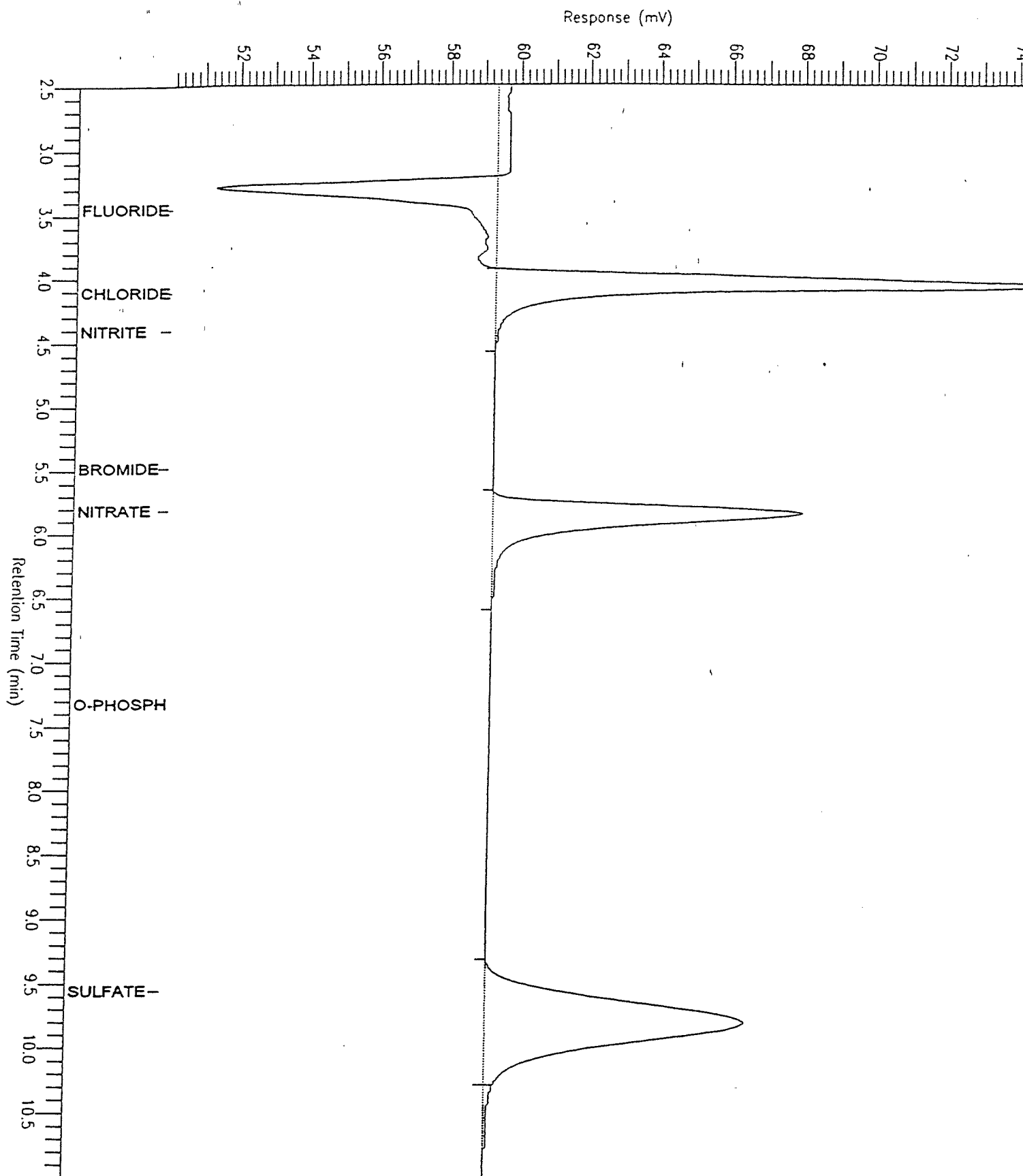
=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0711012.TX0
=====

Standard Anions by IC

Sample Name : 9607215*2
FileName : C:\TC4\DATA\JUL\0711012.raw
Method : 0711
Start Time : 2:50 min
Scale Factor: 1.0

End Time : 11:00 min
Plot Offset: 50 mV

Sample #: 12
Date : 7/11/96 02:57 PM
Time of Injection: 7/11/96 02:47 PM
Low Point : 50.10 mV
Plot Scale: 25.2 mV
Page 1 of 1
High Point : 75.30 mV



002707

Software Version: 4.0<1C29>

Date: 7/11/96 03:08 PM

Sample Name : CCV

Data File : C:\TC4\DATA\JUL\0711013.RAW Date: 7/11/96 02:58 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 13 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	330095.00	4.915	1.00	4.915
Chloride	4.09	949239.50	18.494	1.00	18.494
Nitrite	4.38	160153.00	4.642	1.00	4.642
Bromide	5.39	181497.00	9.514	1.00	9.514
Nitrate	5.72	652555.00	23.800	1.00	23.800
o-Phosphate	7.32	115948.50	12.372	1.00	12.372
Sulfate	9.52	1820082.00	47.802	1.00	47.802

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

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Report stored in ASCII file: C:\TC4\DATA\JUL\0711013.TX0

002708

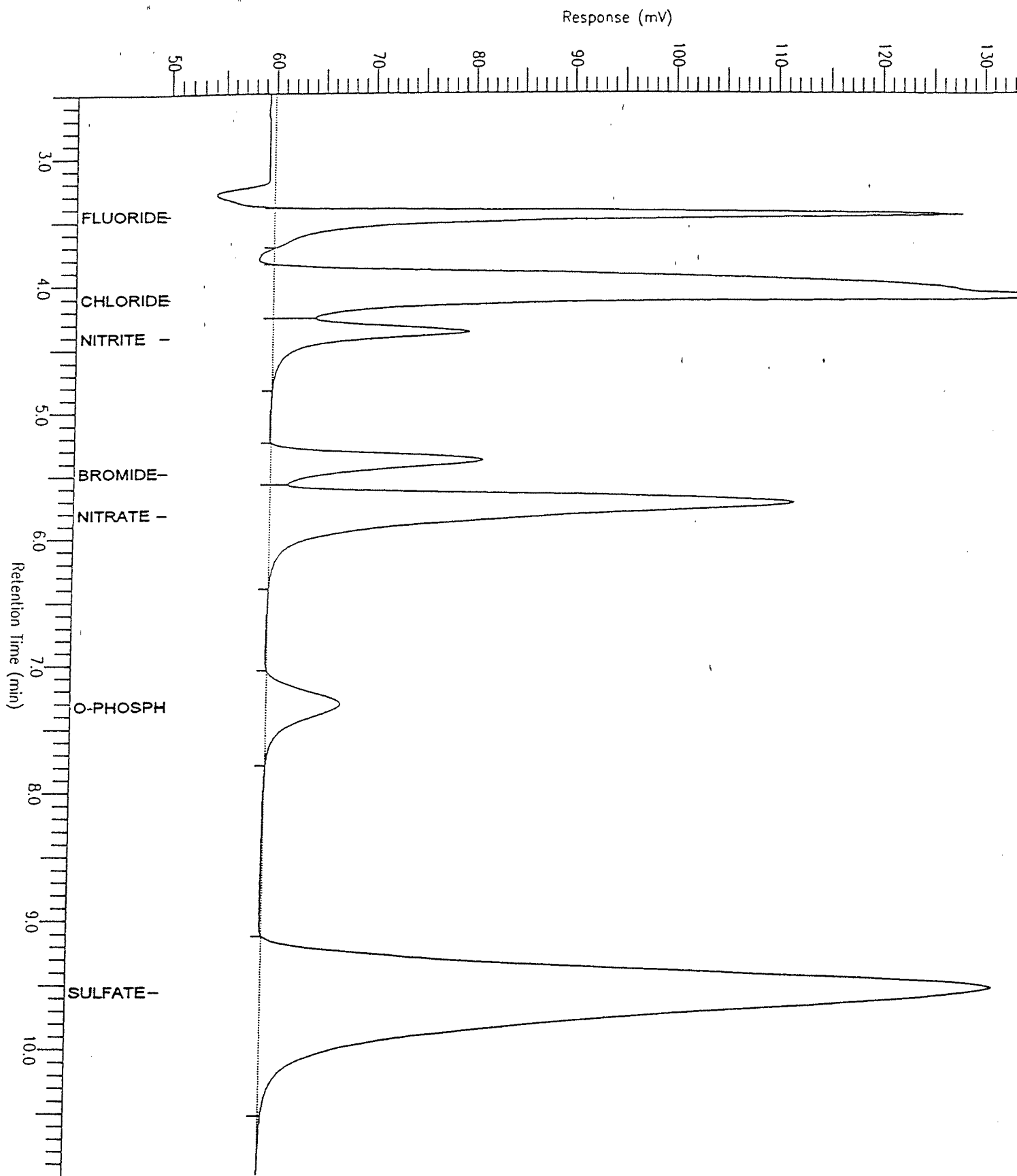
Standard Anions by IC

Sample Name : CCV
FileName : C:\NTC4\DATA\JUL\0711013.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 13
Date : 7/11/96 03:08 PM
Time of Injection: 7/11/96 02:58 PM
Low Point : 49.90 mV
Plot Scale: 88.1 mV
High Point : 138.01 mV

Page 1 of 1



002709

Software Version: 4.0<1C29>

Date: 7/11/96 03:19 PM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0711014.RAW Date: 7/11/96 03:09 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 14 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.12	0.00	0.000	-----	0.000
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
c-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
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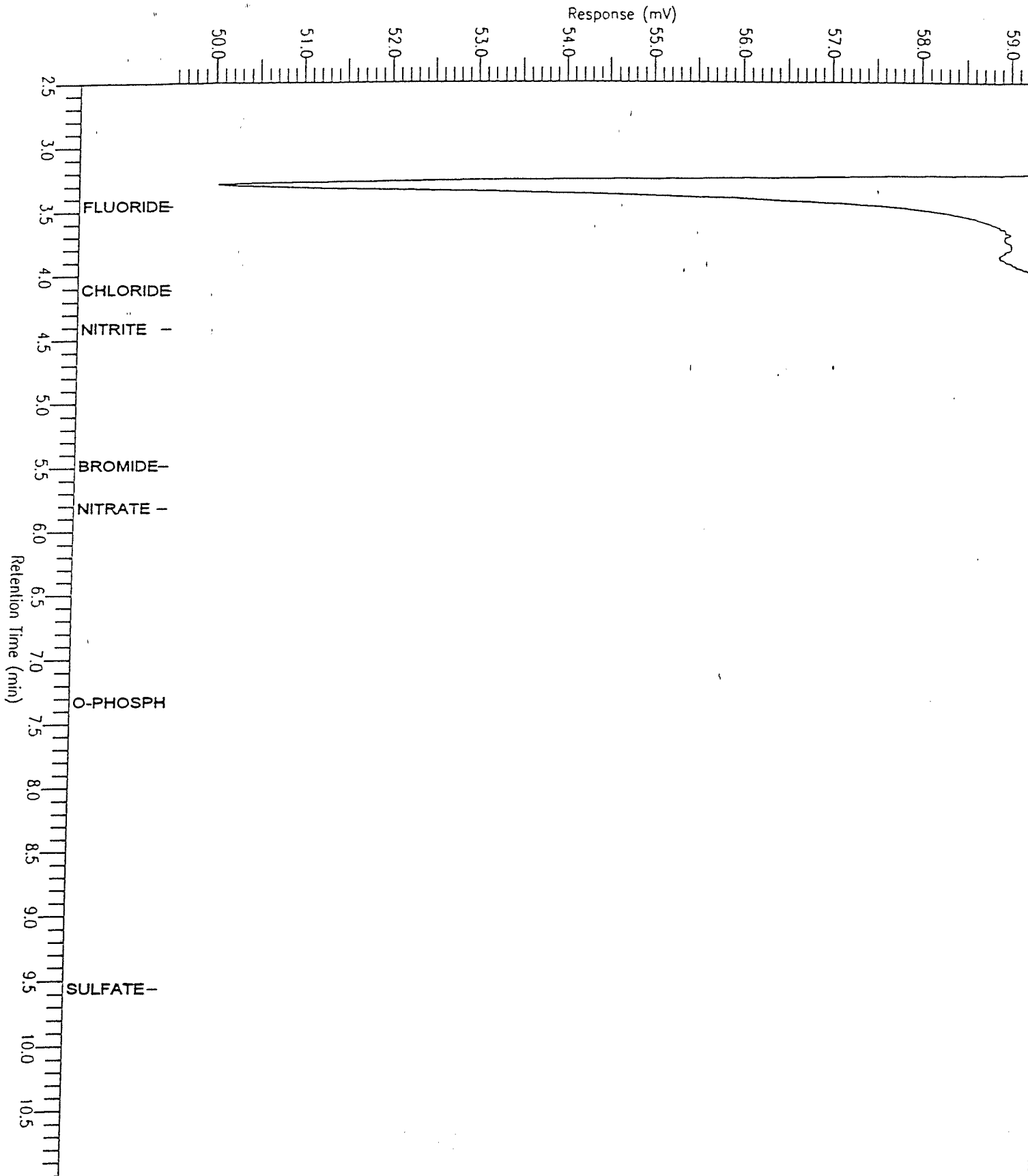
Report stored in ASCII file: C:\TC4\DATA\JUL\0711014.TX0

Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0711014.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 14
Date : 7/11/96 03:19 PM
Time of Injection: 7/11/96 03:09 PM
Low Point : 49.55 mV
Plot Scale: 10.1 mV
High Point : 59.69 mV



002711

Software Version: 4.0<1C29>

Date: 7/11/96 03:30 PM

Sample Name : 9607215*3

Data File : C:\TC4\DATA\JUL\0711015.RAW Date: 7/11/96 03:20 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 15 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

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Version Kyoko	Instrument 533-23	Analyst	Batch
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Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.43	24437.00	0.538	1.00	0.538
Chloride	4.14	984402.50	19.164	1.00	19.164
Nitrite	4.27	333402.50	9.582	1.00	9.582
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.71	964038.00	34.902	1.00	34.902
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.48	2391863.50	62.522	1.00	62.522

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Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

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Report stored in ASCII file: C:\TC4\DATA\JUL\0711015.TX0

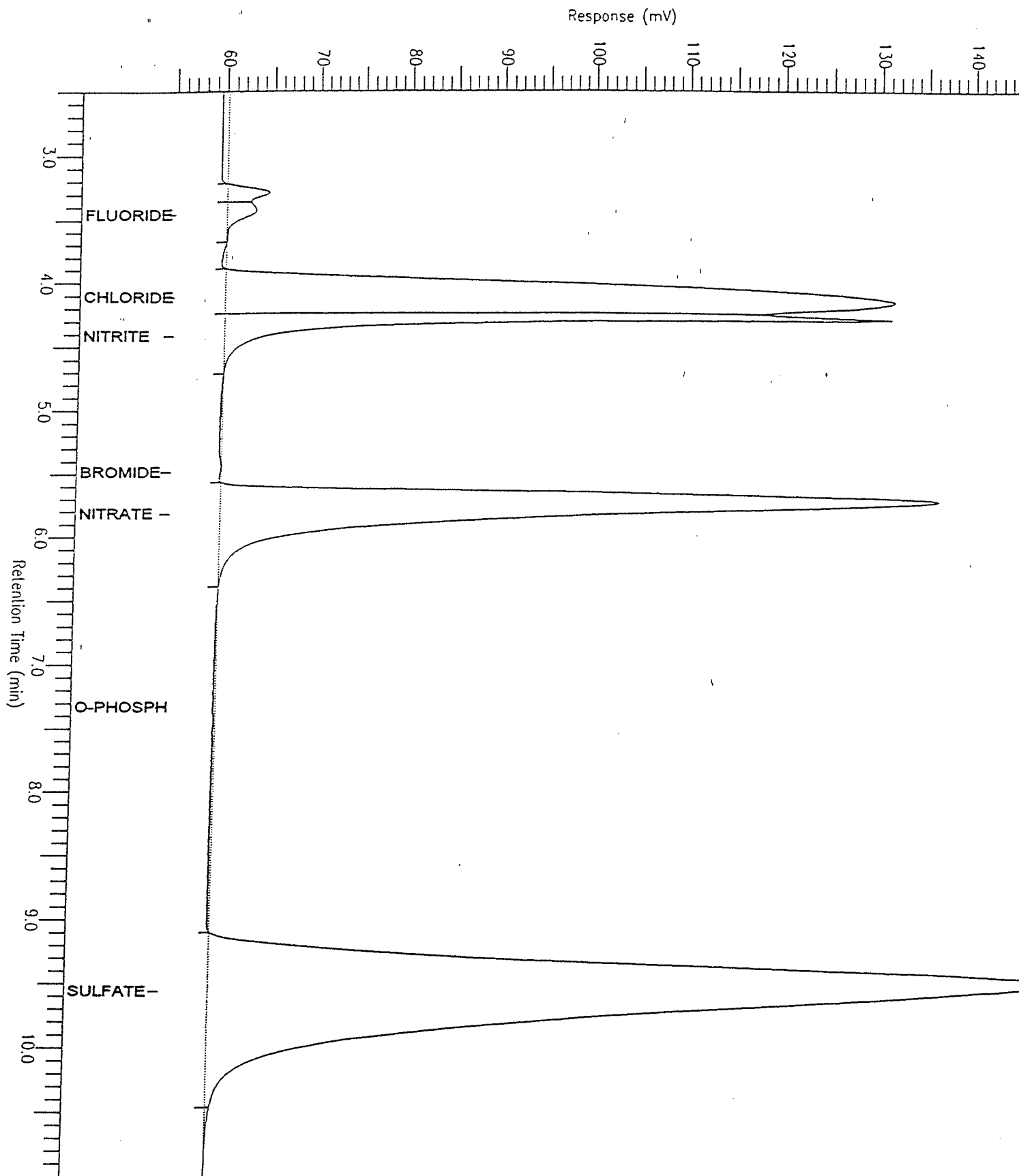
Standard Anions by IC

Sample Name : 9607215*3
FileName : C:\TC4\DATA\JUL\0711015.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 11.00 min
Plot Offset: 55 mV

Sample #: 15
Date : 7/11/96 03:30 PM
Time of Injection: 7/11/96 03:20 PM
Low Point : 54.67 mV
Plot Scale: 95.1 mV
High Point : 149.96 mV

Page 1 of 1



002713

Software Version: 4.0<1C29>

Date: 7/11/96 03:41 PM

Sample Name : 9607215*3

Data File : C:\TC4\DATA\JUL\0711016.RAW Date: 7/11/96 03:31 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 16 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

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Version Kyoko	Instrument 533-23	Analyst	Batch
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Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.06	113680.00	2.576	10.00	25.759
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.64	83805.50	3.529	10.00	35.288
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.78	205965.00	6.247	10.00	62.473

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Reviewed and Approved by	Date
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Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

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Report stored in ASCII file: C:\TC4\DATA\JUL\0711016.TX0

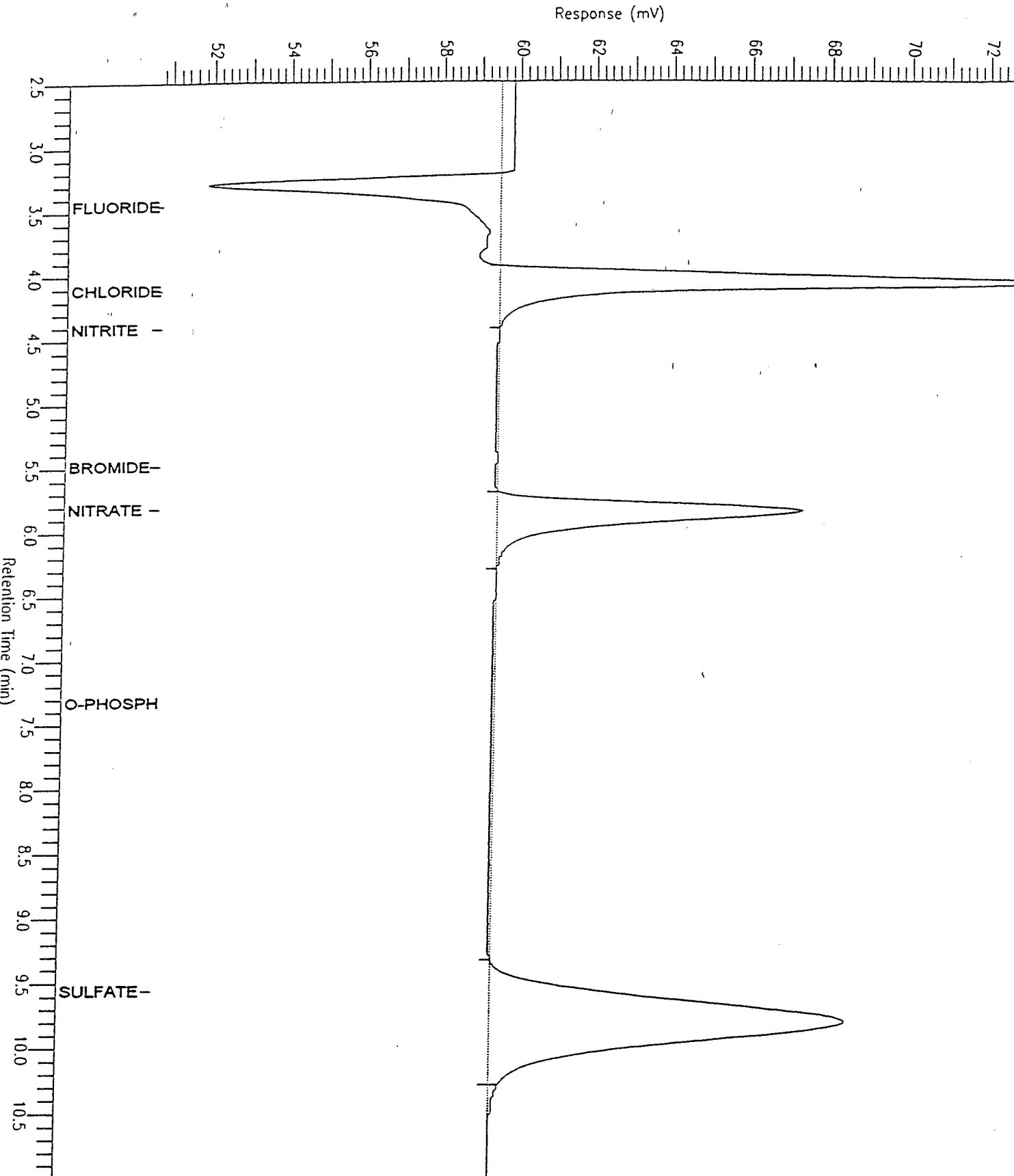
002714

Standard Anions by IC

Sample Name : 9607215-3
FileName : C:\TC4\DATA\JUL\0711016.raw
Method : 0711
Start Time : 29.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 51 mV

Sample #: 16
Date : 7/11/96 03:41 PM
Time of Injection: 7/11/96 03:31 PM
Low Point : 50.75 mV
Plot Scale: 23.0 mV
High Point : 73.79 mV



002715

Software Version: 4.0<1C29>

Date: 7/11/96 03:52 PM

Sample Name : 9607216*1

Data File : C:\TC4\DATA\JUL\0711017.RAW Date: 7/11/96 03:42 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 17 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

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Version Kyoko	Instrument 533-23	Analyst	Batch
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=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	2663.50	0.226	1.00	0.226
Chloride	4.15	893199.00	17.427	1.00	17.427
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.44	554.00	0.113	1.00	0.113
Nitrate	5.74	554812.50	20.317	1.00	20.317
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.65	893028.00	23.935	1.00	23.935

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Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711017.TX0

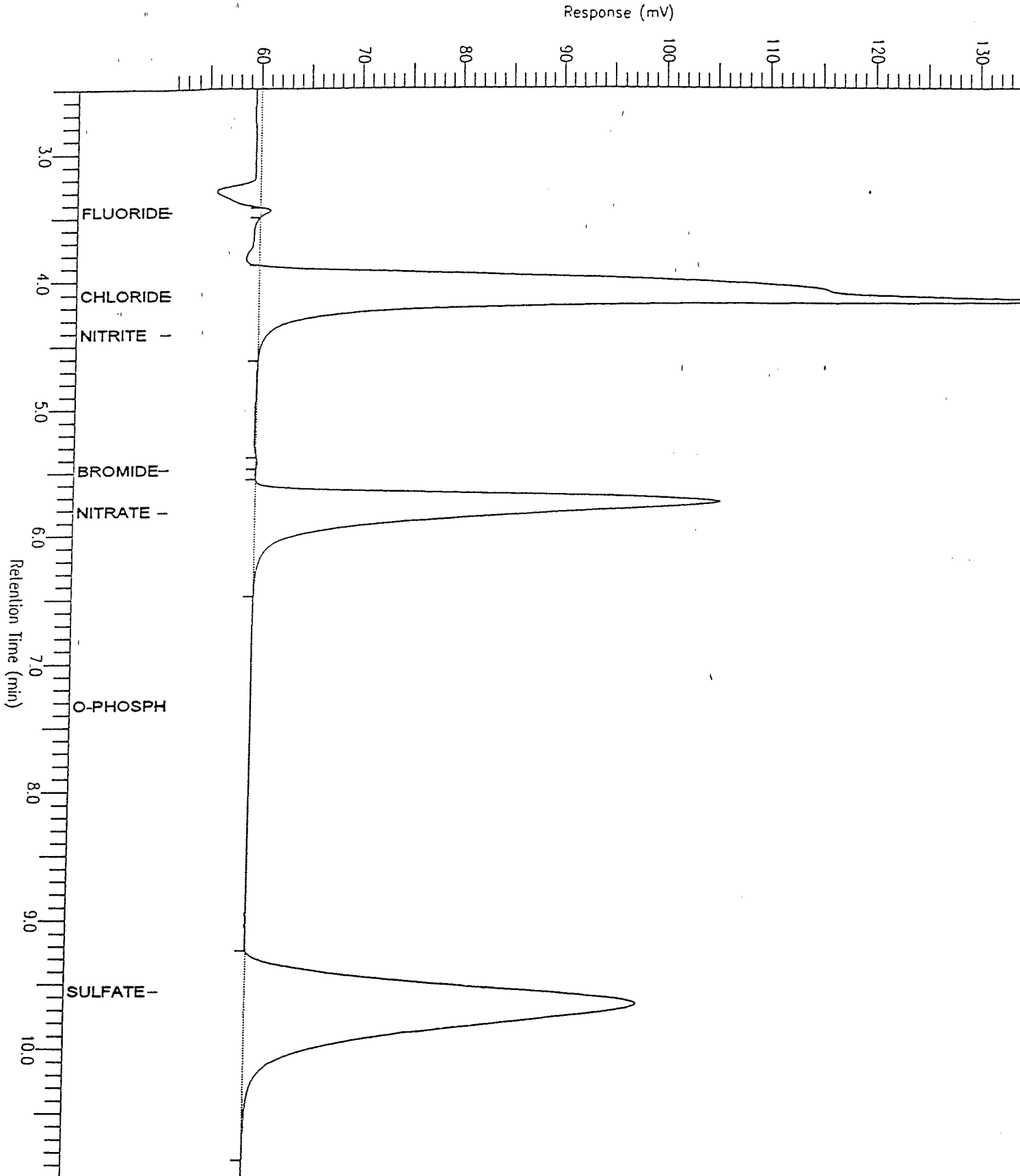
Standard Anions by IC

Sample Name : 9607216-1
FileName : C:\IC4\DATA\JUL\0711017.raw
Method : 0711
Start Time : 24.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 52 mV

Sample #: 17
Date : 7/11/96 03:52 PM
Time of Injection: 7/11/96 03:42 PM
Low Point : 51.57 mV
Plot Scale: 67.2 mV
High Point : 138.74 mV

Page 1 of 1



002717

Software Version: 4.0<1C29>

Date: 7/11/96 04:03 PM

Sample Name : 9607216*1

Data File : C:\TC4\DATA\JUL\0711018.RAW Date: 7/11/96 03:53 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 18 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.04	78011.00	1.896	10.00	18.964
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.85	51439.50	2.375	10.00	23.752
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.80	63666.00	3.099	10.00	30.967

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711018.TX0

002718

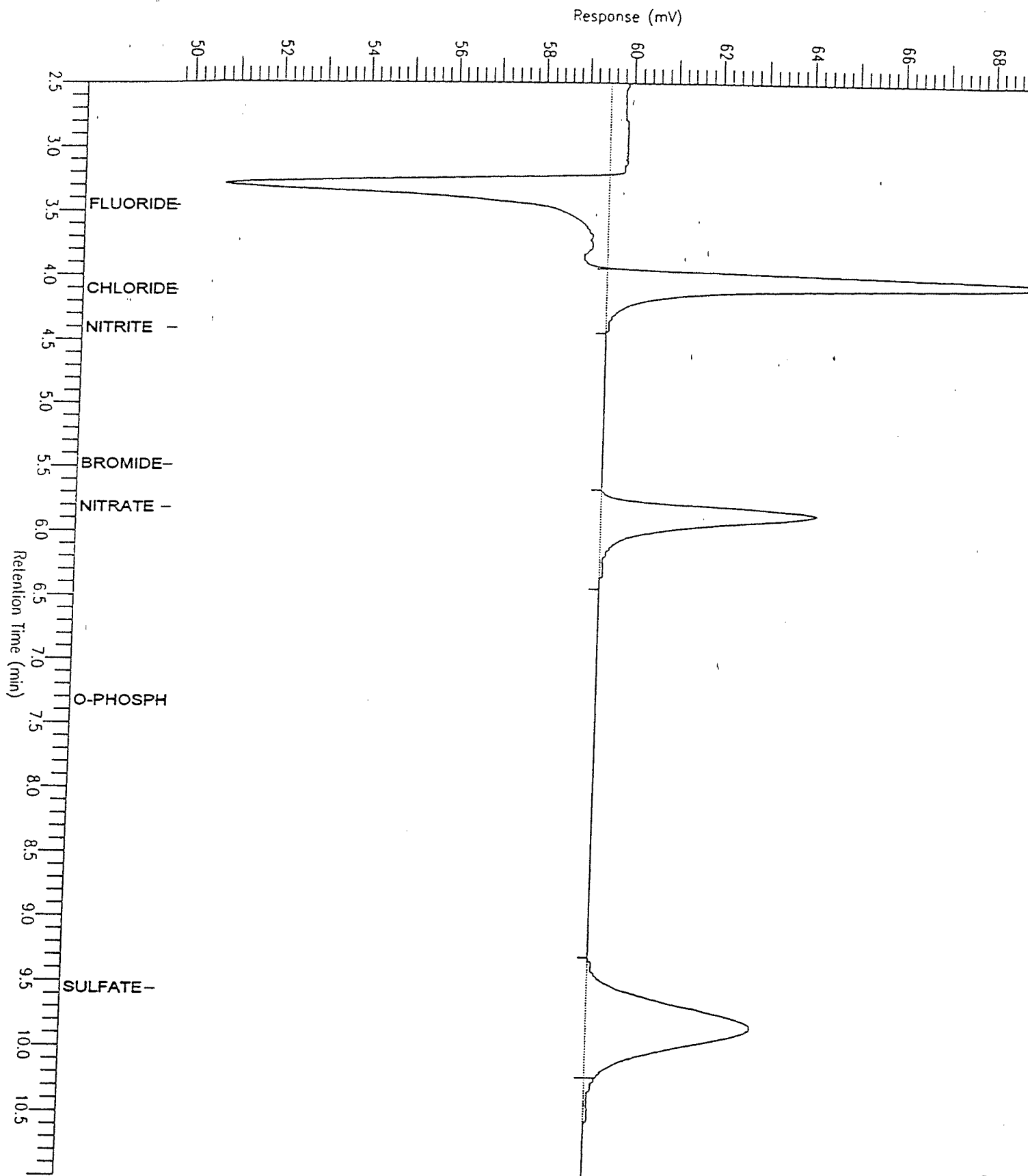
Standard Anions by IC

Sample Name : 9607216-1
FileName : C:\ATC4\DATA\JUL\0711018.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 18
Date : 7/11/96 04:03 PM
Time of Injection: 7/11/96 03:53 PM
Low Point : 49.75 mV
Plot Scale: 20.1 mV
High Point : 69.81 mV

Page 1 of 1



002719

Software Version: 4.0<1C29>

Date: 7/11/96 04:14 PM

Sample Name : 9607223*1

Data File : C:\TC4\DATA\JUL\0711019.RAW Date: 7/11/96 04:04 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 19 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
---------------	-------------------	---------	-------

=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	2836.50	0.229	1.00	0.229
Chloride	4.16	431163.50	8.624	1.00	8.624
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.42	2339.50	0.206	1.00	0.206
Nitrate	5.71	765032.00	27.809	1.00	27.809
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.61	1176975.50	31.246	1.00	31.246

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711019.TX0

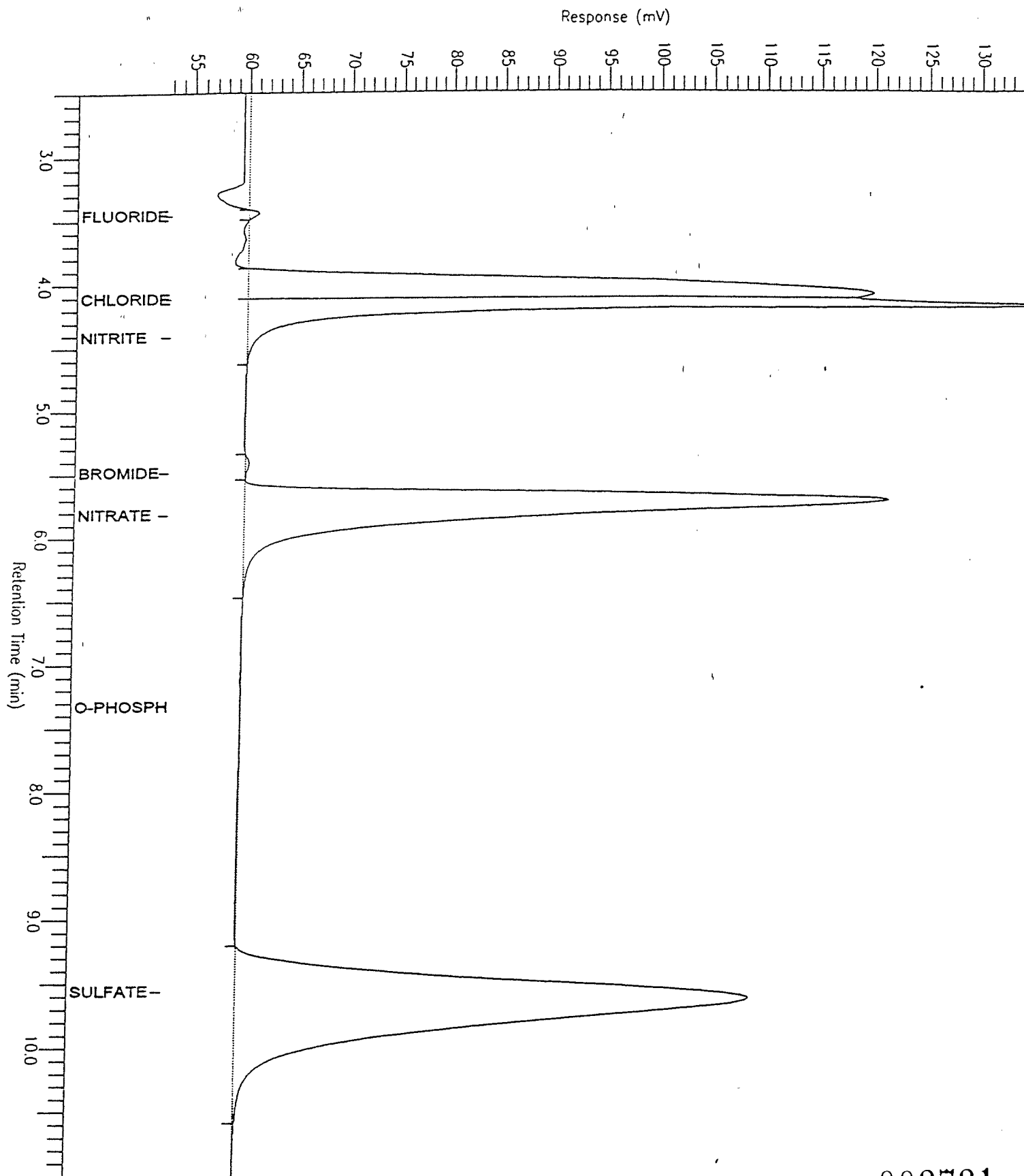
Standard Anions by IC

Sample Name : 9407223-1
FileName : C:\ATC4\DATA\JUL\0711019.raw
Method : Q711
Start Time : 2.450 min
Scale Factor : 1.0

End Time : 11.00 min
Plot Offset: 53 mV

Sample #: 19
Date : 7/11/96 04:14 PM
Time of Injection: 7/11/96 04:04 PM
Low Point : 52.91 mV
Plot Scale: 65.0 mV
High Point : 137.89 mV

Page 1 of 1



002721

Software Version: 4.0<1C29>
 Date: 7/11/96 04:25 PM
 Sample Name : 9607223*1
 Data File : C:\TC4\DATA\JUL\0711020.RAW Date: 7/11/96 04:15 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 20 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.04	85288.50	2.035	10.00	20.350
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.83	66540.50	2.913	10.00	29.135
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.81	106446.00	3.685	10.00	36.852

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711020.TX0

Software Version: 4.0<1C29>

Date: 7/11/96 04:25 PM

Sample Name : 9607223*1

Data File : C:\TC4\DATA\JUL\0711020.RAW Date: 7/11/96 04:15 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 20 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.04	85268.50	2.035	10.00	20.350
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.83	66540.50	2.913	10.00	29.135
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.81	106446.00	3.685	10.00	36.852

=====

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711020.TX0

002723

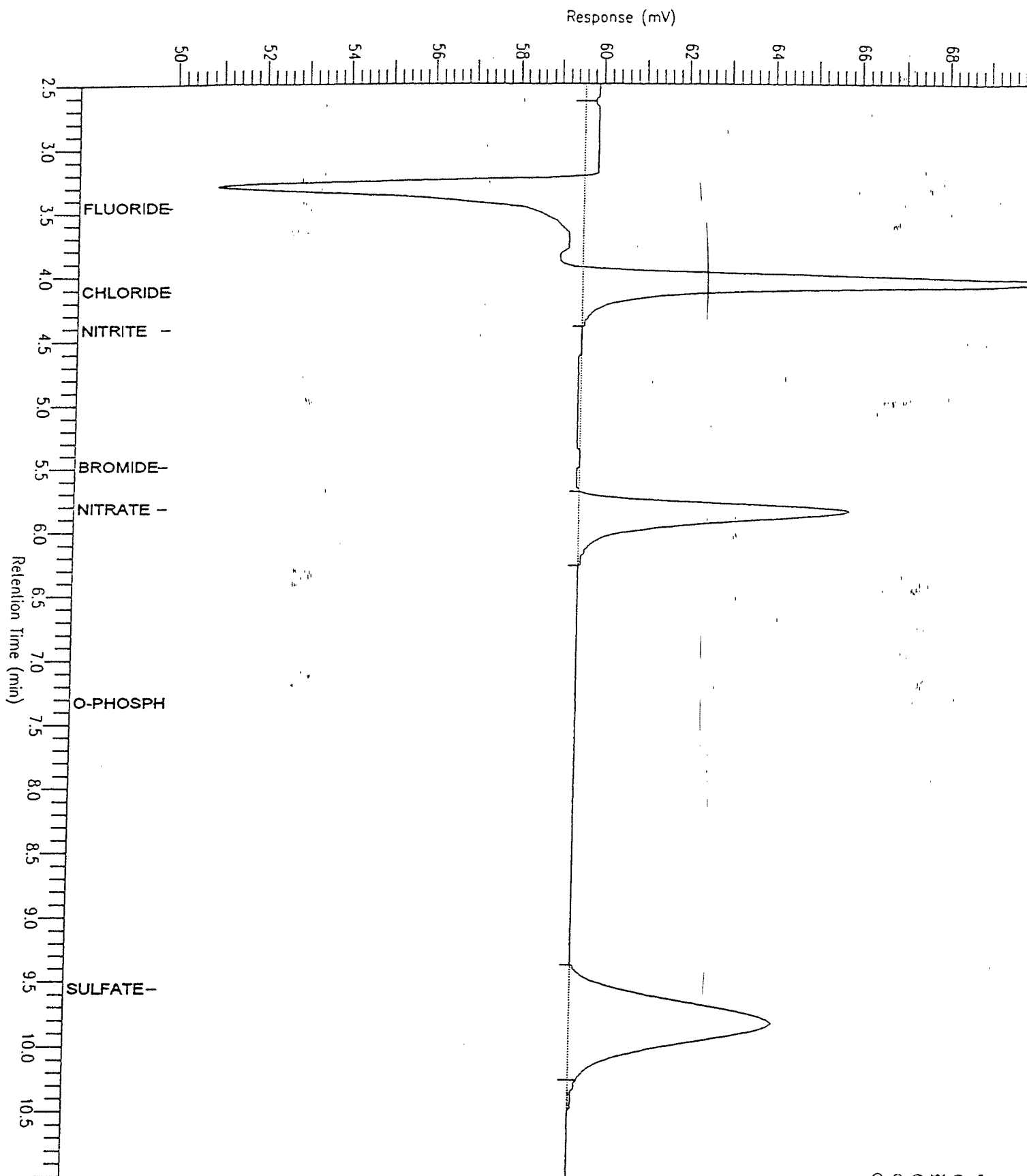
Standard Anions by IC

Sample Name : 9607223*1
FileName : C:\TC4\DATA\JUL\0711020.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 20
Date : 7/11/96 04:25 PM
Time of Injection: 7/11/96 04:15 PM
Low Point : 49.68 mV
Plot Scale: 20.9 mV
High Point : 70.78 mV

Page 1 of 1



002724

Software Version: 4.0<1C29>

Date: 7/11/96 04:36 PM

Sample Name : 9607186*1

Data File : C:\TC4\DATA\JUL\0711021.RAW Date: 7/11/96 04:26 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 21 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.08	408585.00	8.194	10.00	81.942
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.72	445636.50	12.418	10.00	124.175

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711021.TX0

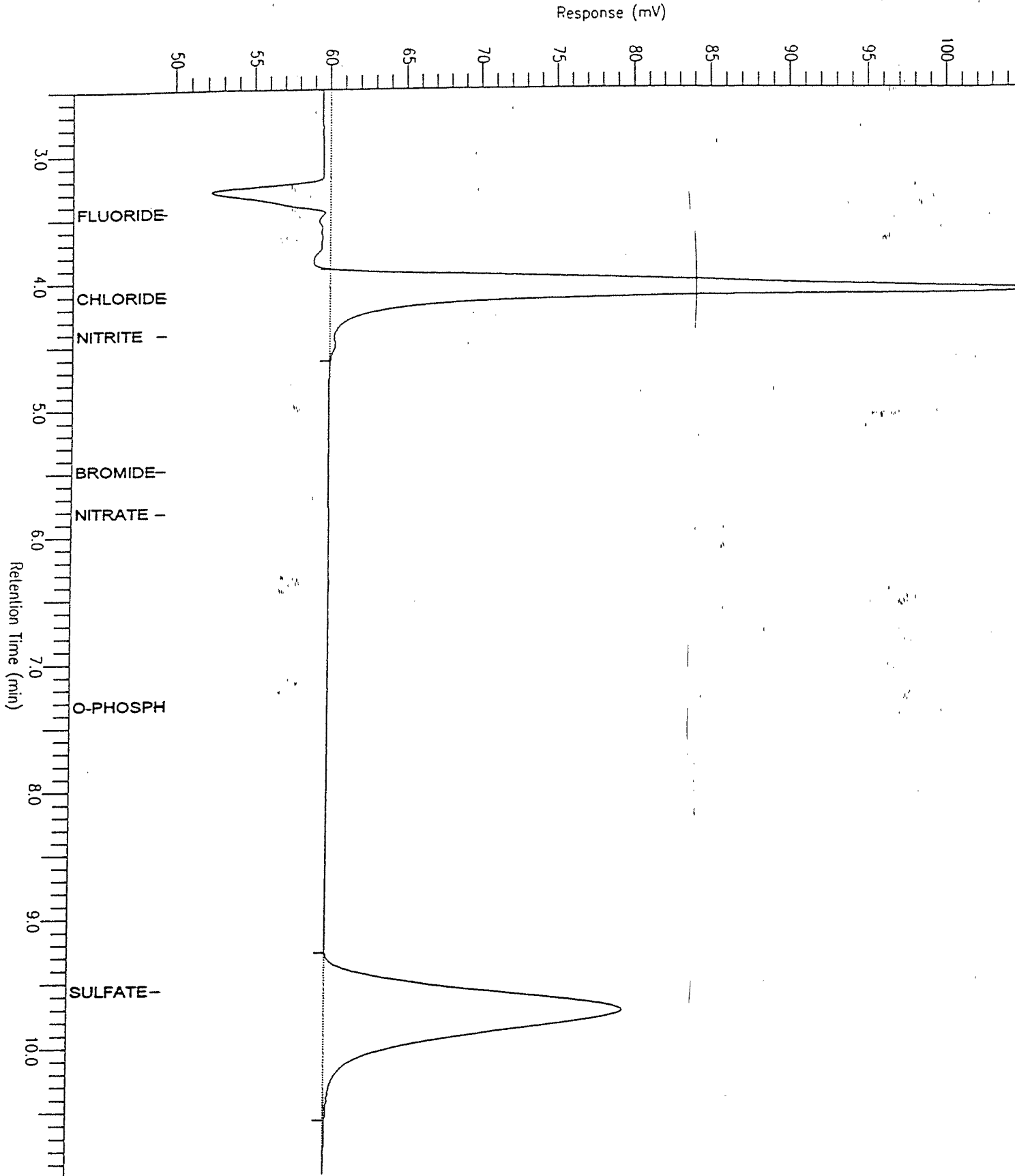
Standard Anions by IC

Sample Name : 9607186*1
FileName : C:\TC4\DATA\JUL\0711021.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 49 mV

Sample #: 21
Date : 7/11/96 04:36 PM
Time of Injection: 7/11/96 04:26 PM
Low Point : 49.42 mV
Plot Scale: 58.1 mV
High Point : 107.52 mV

Page 1 of 1



002726

Software Version: 4.0<1C29>

Date: 7/11/96 04:47 PM

Sample Name : 9607186*1

Data File : C:\TC4\DATA\JUL\0711022.RAW Date: 7/11/96 04:37 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 22 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.05	146502.50	3.201	25.00	80.030
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.79	165028.50	5.193	25.00	129.634

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

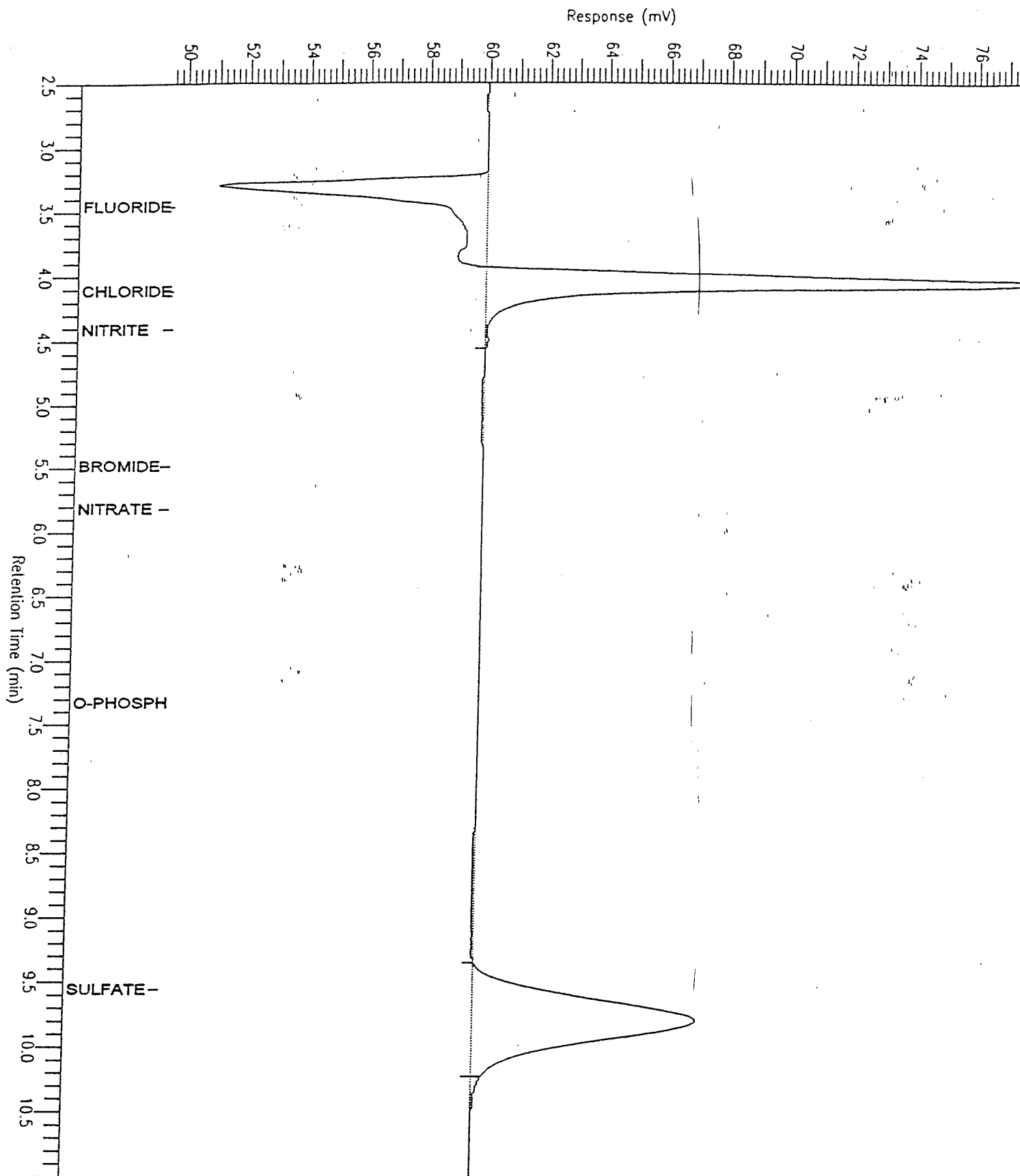
Report stored in ASCII file: C:\TC4\DATA\JUL\0711022.TX0

002727

Standard Anions by IC

Sample Name : 9607186*1
FileName : C:\TC4\DATA\JUL\0711022.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0
End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 22
Date : 7/11/96 04:47 PM
Time of Injection: 7/11/96 04:37 PM
Low Point : 49.60 mV
Plot Scale: 29.4 mV
High Point : 78.97 mV



002728

Software Version: 4.0<1C29>

Date: 7/11/96 04:58 PM

Sample Name : 9607228*1

Data File : C:\TC4\DATA\JUL\0711023.RAW Date: 7/11/96 04:48 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 23 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	321793.00	4.797	1.00	4.797
Chloride	4.07	2234353.50	42.977	1.00	42.977
Nitrite	4.25	733189.00	20.984	1.00	20.984
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.86	296.50	0.552	1.00	0.552
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.31	3607834.50	98.976	1.00	98.976

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711023.TX0

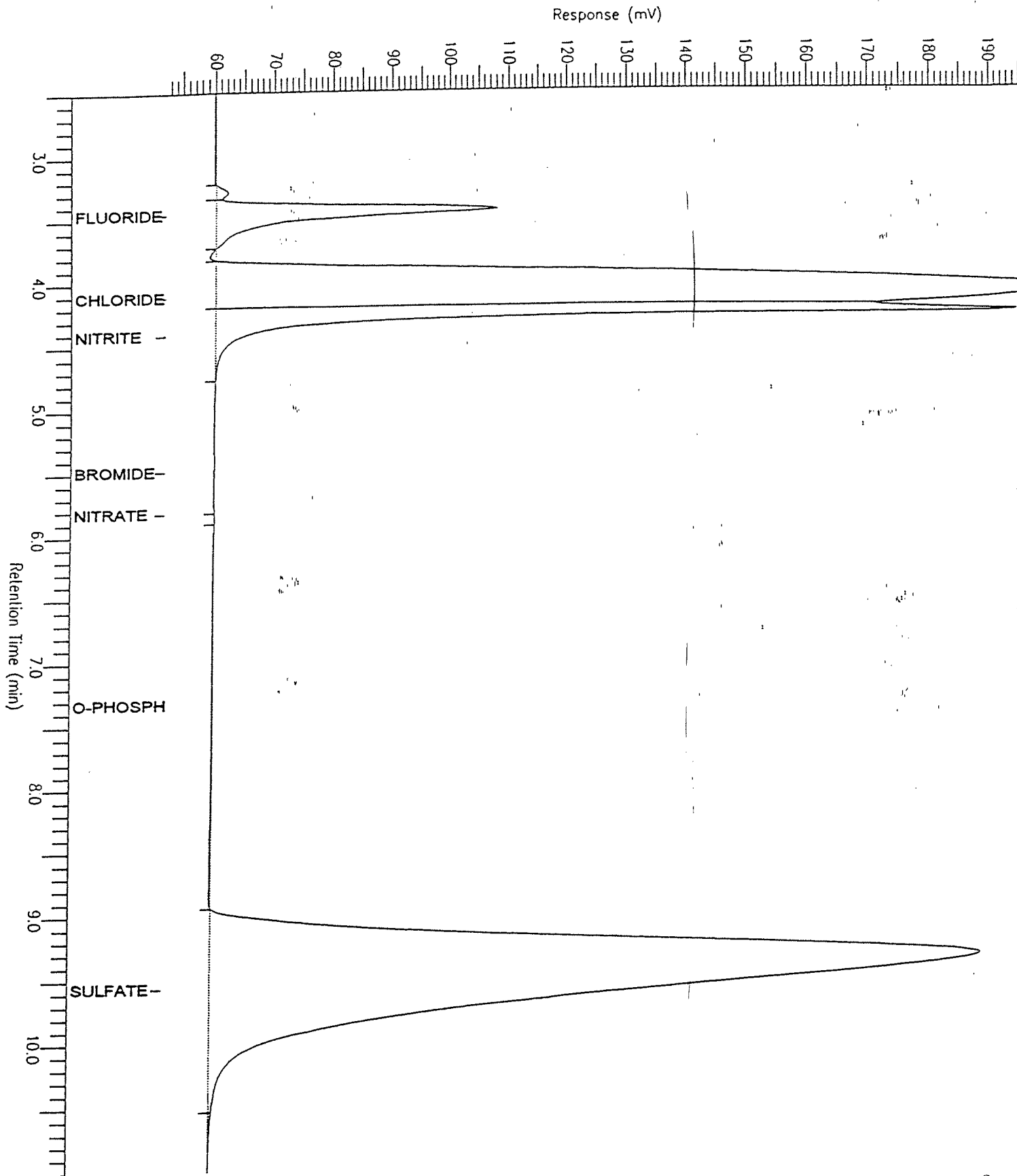
Standard Anions by IC

Sample Name : 9607228*1
FileName : C:\IC4\DATA\JUL\0711023.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 11.00 min
Plot Offset: 52 mV

Sample #: 23
Date : 7/11/96 04:58 PM
Time of Injection: 7/11/96 04:46 PM
Low Point : 52.01 mV
Plot Scale: 149.7 mV
High Point : 201.76 mV

Page 1 of 1



002730

Software Version: 4.0<1C29>
 Date: 7/11/96 05:09 PM
 Sample Name : 9607228*1
 Data File : C:\TC4\DATA\JUL\0711024.RAW Date: 7/11/96 04:59 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 24 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret' Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	10645.50	0.340	10.00	3.404
Chloride	4.06	238861.00	4.961	10.00	49.611
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.75	318906.00	9.155	10.00	91.549

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

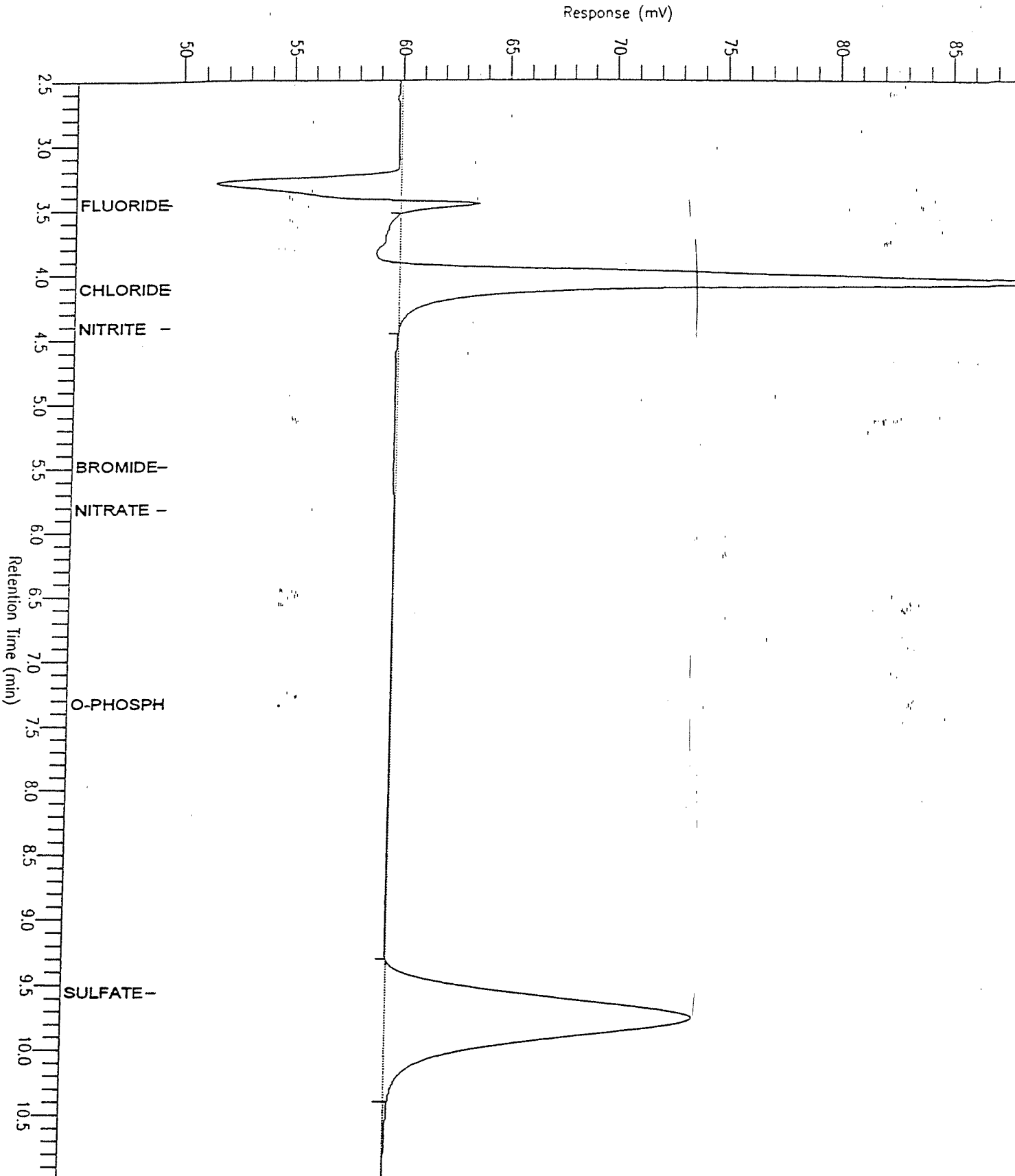
Report stored in ASCII file: C:\TC4\DATA\JUL\0711024.TX0

Standard Anions by IC

Sample Name : 9607228-1
FileName : C:\TC4\DATA\JUL\0711024.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 24
Date : 7/11/96 05:09 PM
Time of Injection: 7/11/96 04:59 PM
Low Point : 49.51 mV
Plot Scale: 40.8 mV
High Point : 90.27 mV



002732

Software Version: 4.0<1C29>

Date: 7/11/96 05:20 PM

Sample Name : CCV

Data File : C:\TC4\DATA\JUL\0711025.RAW Date: 7/11/96 05:10 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 25 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	331328.00	4.933	1.00	4.933
Chloride	4.08	950168.00	18.512	1.00	18.512
Nitrite	4.37	160435.50	4.650	1.00	4.650
Bromide	5.36	180816.50	9.479	1.00	9.479
Nitrate	5.69	651920.00	23.778	1.00	23.778
o-Phosphate	7.31	114363.50	12.205	1.00	12.205
Sulfate	9.49	1611129.50	47.572	1.00	47.572

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711025.TX0

002733

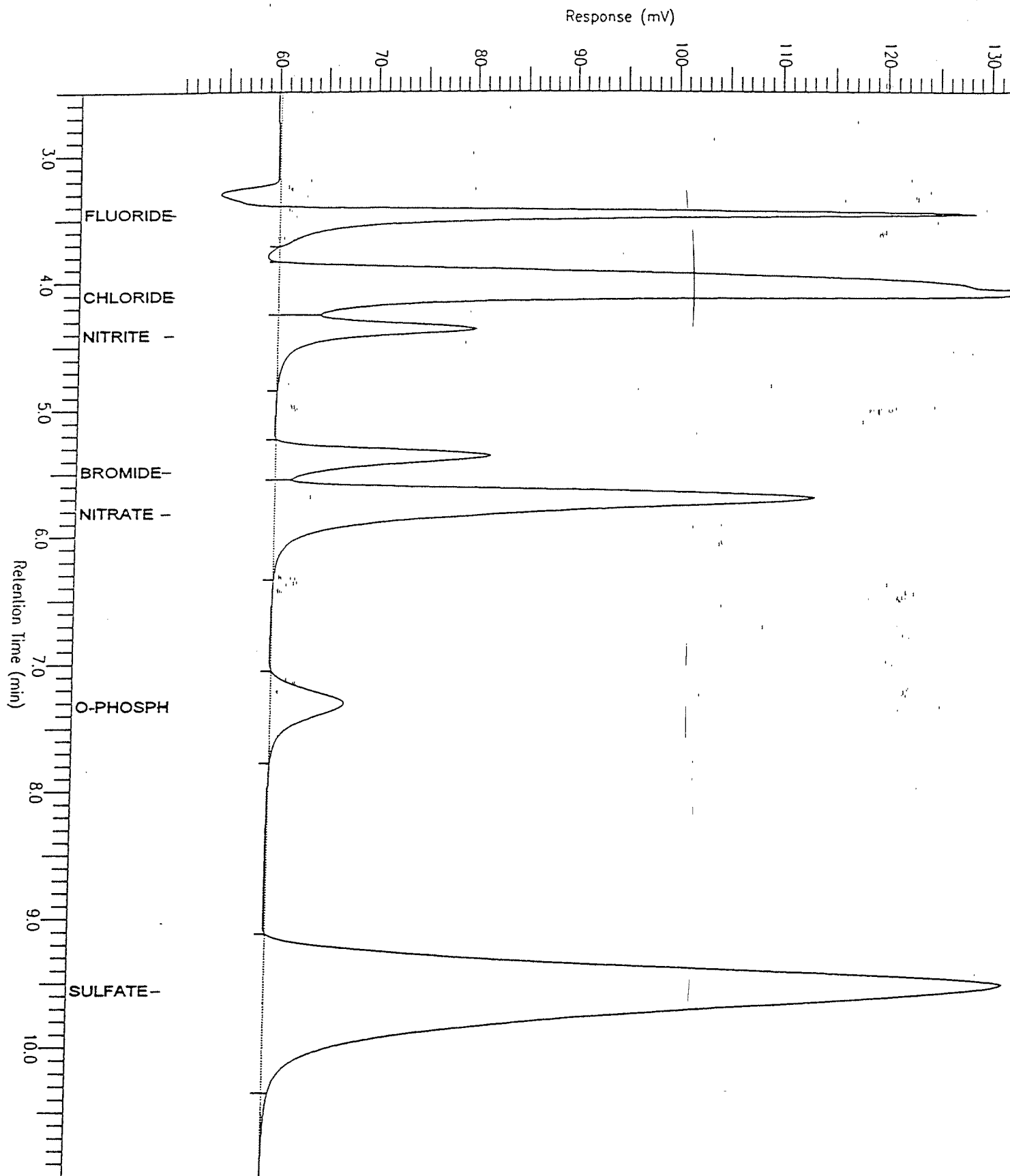
Standard Anions by IC

Sample Name : CCV
FileName : C:\IC4\DATA\JUL\0711025.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 25
Date : 7/11/96 05:20 PM
Time of Injection: 7/11/96 05:10 PM
Low Point : 50.13 mV
Plot Scale: 67.6 mV

Page 1 of 1



002734

Software Version: 4.0<1C29>

Date: 7/11/96 05:31 PM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0711026.RAW Date: 7/11/96 05:21 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 26 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.12	0.00	0.000	-----	0.000
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
c-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000

=====
Reviewed and Approved by Date
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

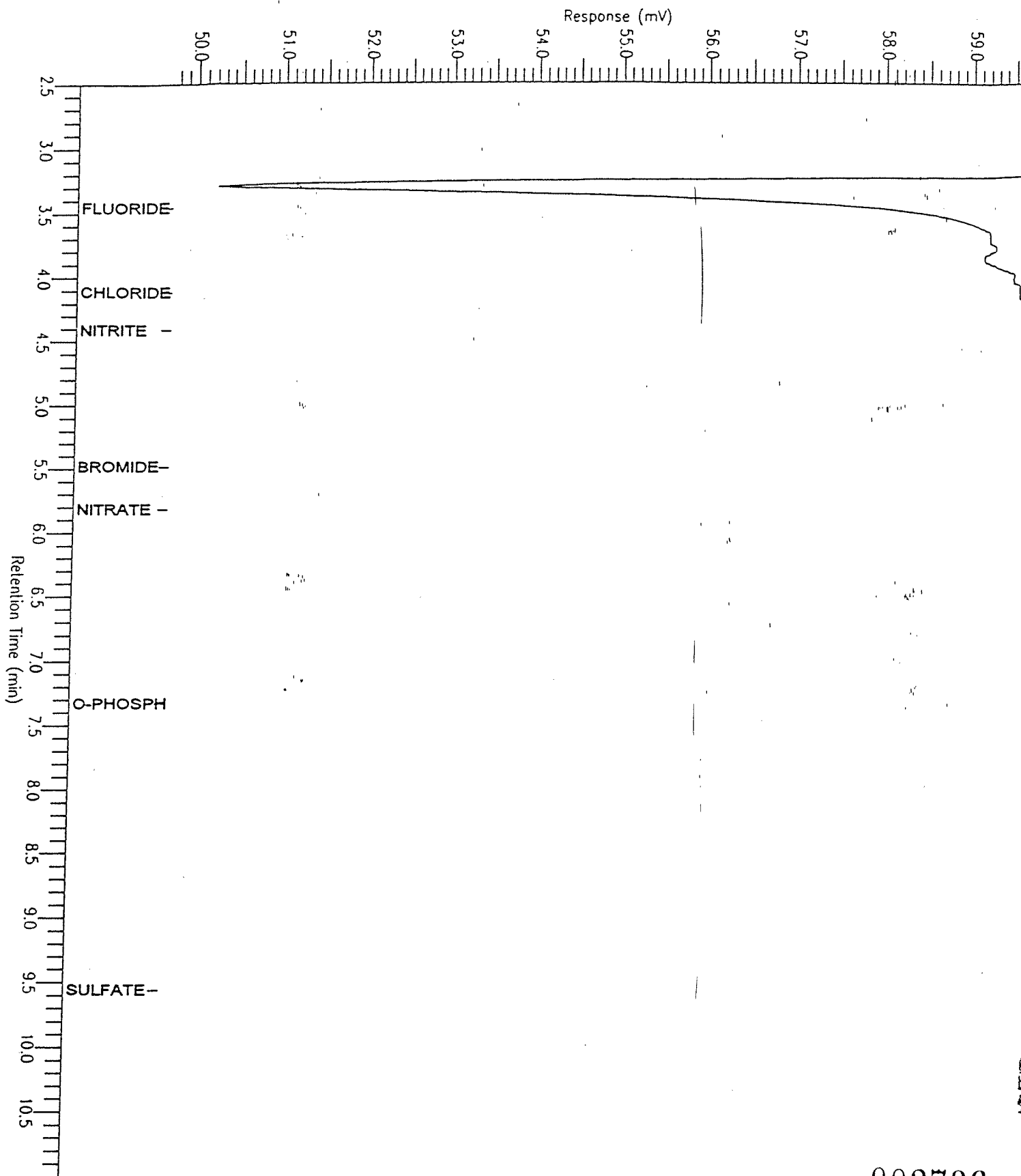
Report stored in ASCII file: C:\TC4\DATA\JUL\0711026.TX0

Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0711026.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 26
Date : 7/11/96 05:31 PM
Time of Injection: 7/11/96 05:21 PM
Low Point : 49.72 mV
Plot Scale: 10.4 mV
Page 1 of 1
High Point : 60.08 mV



002736

Software Version: 4.0<1C29>
 Date: 7/11/96 05:42 PM
 Sample Name : 9607228*1
 Data File : C:\TC4\DATA\JUL\0711027.RAW Date: 7/11/96 05:32 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 27 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret. Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.04	90419.00	2.133	25.00	53.319
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.62	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.79	121168.50	4.064	25.00	101.605

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711027.TX0

002737

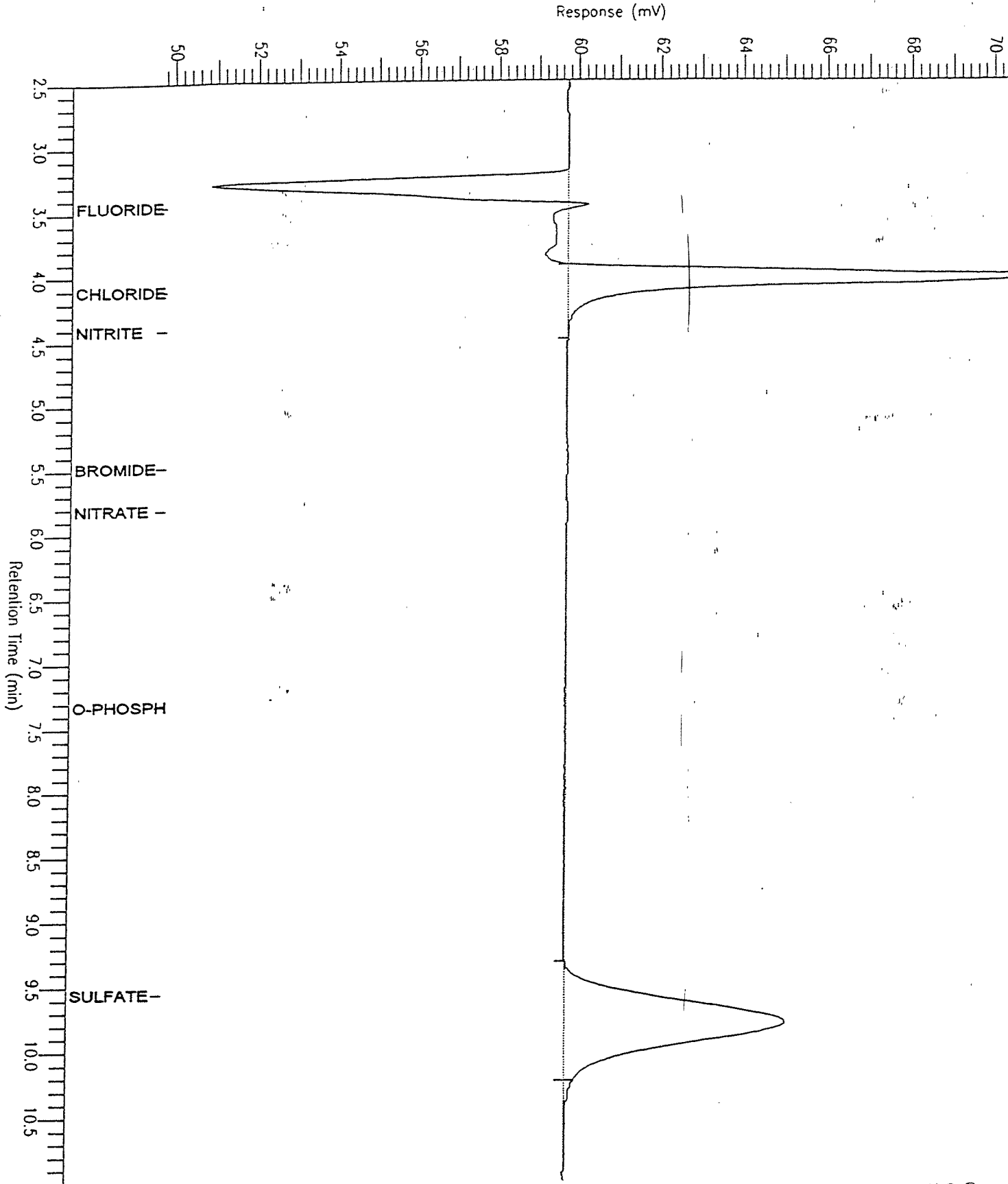
Standard Anions by IC

Sample Name : 9607228*1
FileName : C:\TC4\DATA\JUL\0711027.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 27
Date : 7/11/96 05:42 PM
Time of Injection: 7/11/96 05:32 PM
Low Point : 49.80 mV
Plot Scale: 21.9 mV
High Point : 71.68 mV

Page 1 of 1



002738

Software Version: 4.0<1C29>

Date: 7/11/96 05:53 PM

Sample Name : 9607228*2*R1

Data File : C:\TC4\DATA\JUL\0711028.RAW Date: 7/11/96 05:43 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 28 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	41547.50	0.783	1.00	0.783
Chloride	4.07	2992768.00	57.426	1.00	57.426
Nitrite	4.24	919958.00	26.310	1.00	26.310
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.55	1277917.50	33.844	1.00	33.844

and Resolution - see 1.2

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0711028.TX0

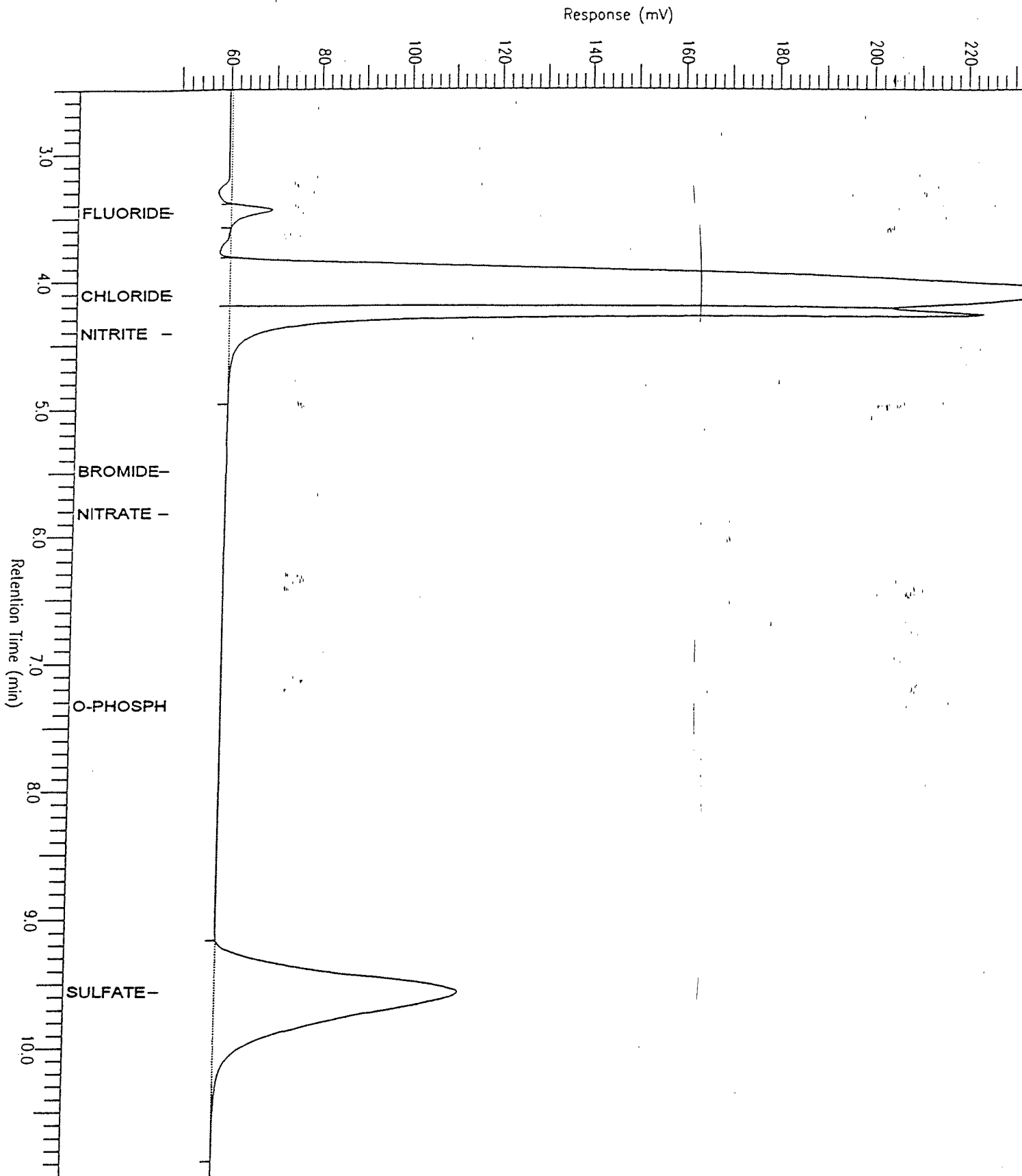
002739

Standard Anions by IC

Sample Name : 9607228-2-R1
FileName : C:\TC4\DATA\JUL\0711028.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 48 mV

Sample #: 26
Date : 7/11/96 05:53 PM
Time of Injection: 7/11/96 05:43 PM
Low Point : 48.30 mV
Plot Scale: 193.2 mV
Page 1 of 1
High Point : 241.53 mV



002740

Software Version: 4.0<1C29>

Date: 7/11/96 06:04 PM

Sample Name : 9607228*2*S1

Data File : C:\TC4\DATA\JUL\0711029.RAW Date: 7/11/96 05:54 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 29 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret. Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	390299.00	5.778	1.00	5.778
Chloride	4.03	3737382.50	71.611	1.00	71.611
Nitrite	4.38	105372.50	3.079	1.00	3.079
Bromide	5.37	157706.00	8.278	1.00	8.278 104%
Nitrate	5.70	540567.00	19.809	1.00	19.809 91%
o-Phosphate	7.27	281465.50	29.767	1.00	29.767 124%
Sulfate	9.36	2980256.00	77.670	1.00	77.670 104%

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711029.TX0

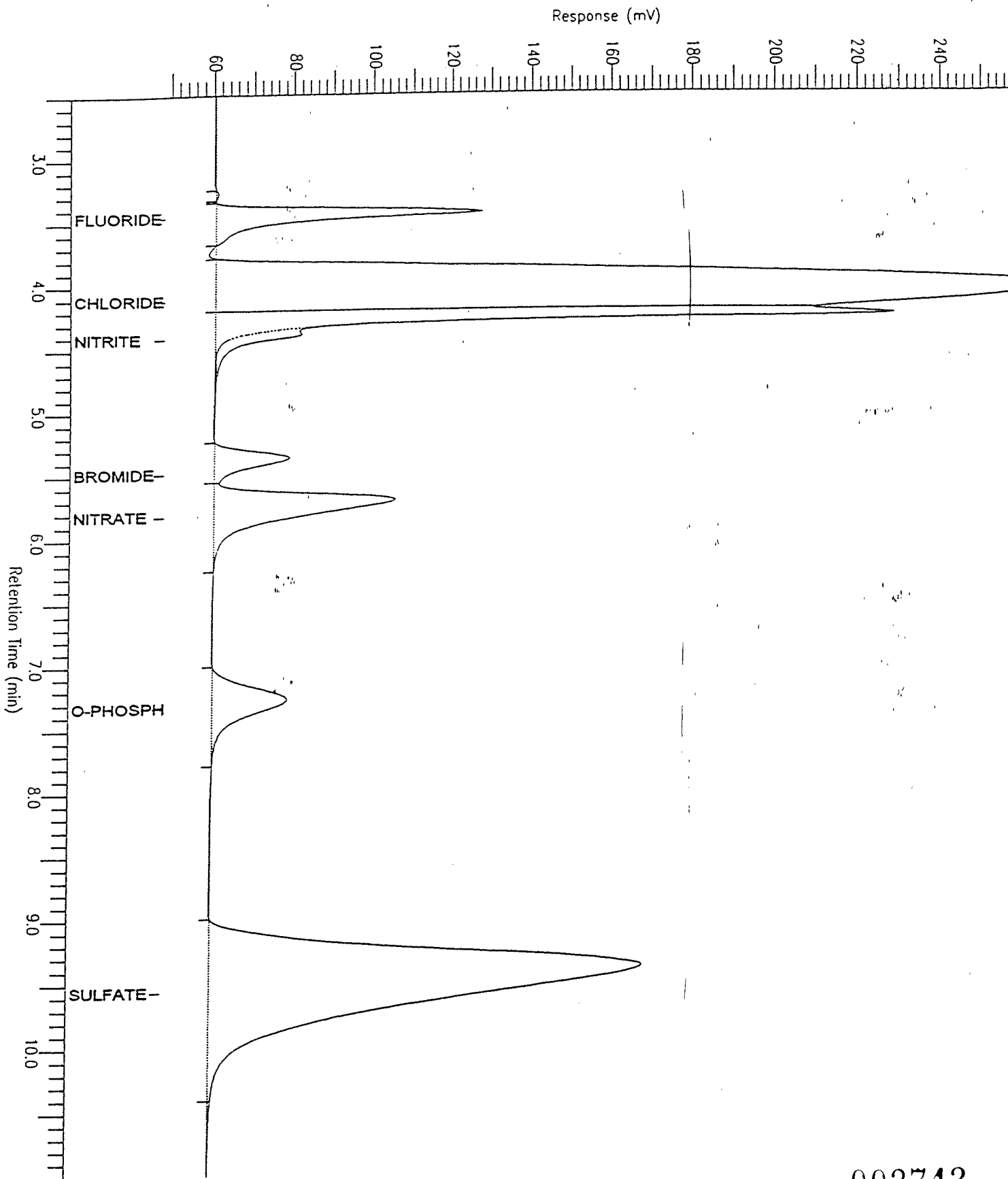
002741

Standard Anions by IC

Sample Name : 9607228-2-S1
 FileName : C:\TC4\DATA\JUL\0711029.raw
 Method : 0711
 Start Time : 2.50 min
 Scale Factor: 1.0

End Time : 11.00 min
 Plot Offset: 48 mV

Sample #: 29
 Date : 7/11/96 06:04 PM
 Time of Injection: 7/11/96 05:54 PM
 Low Point : 48.29 mV
 Plot Scale: 220.6 mV
 High Point : 268.94 mV



002742

Software Version: 4.0<1C29>
 Date: 7/11/96 06:15 PM
 Sample Name : 9607228*2*S2
 Data File : C:\TC4\DATA\JUL\0711030.RAW Date: 7/11/96 06:05 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 30 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	392625.50	5.811	1.00	5.811
Chloride	4.03	3802298.00	72.848	1.00	72.848
Nitrite	4.39	106596.50	3.114	1.00	3.114
Bromide	5.37	159350.00	8.363	1.00	8.363 105% T=8.00
Nitrate	5.70	542931.00	19.893	1.00	19.893 104% T=20.0
o-Phosphate	7.27	285863.50	30.230	1.00	30.230 124% T=24.0
Sulfate	9.36	2987190.00	77.849	1.00	77.849 110% T=73.0

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

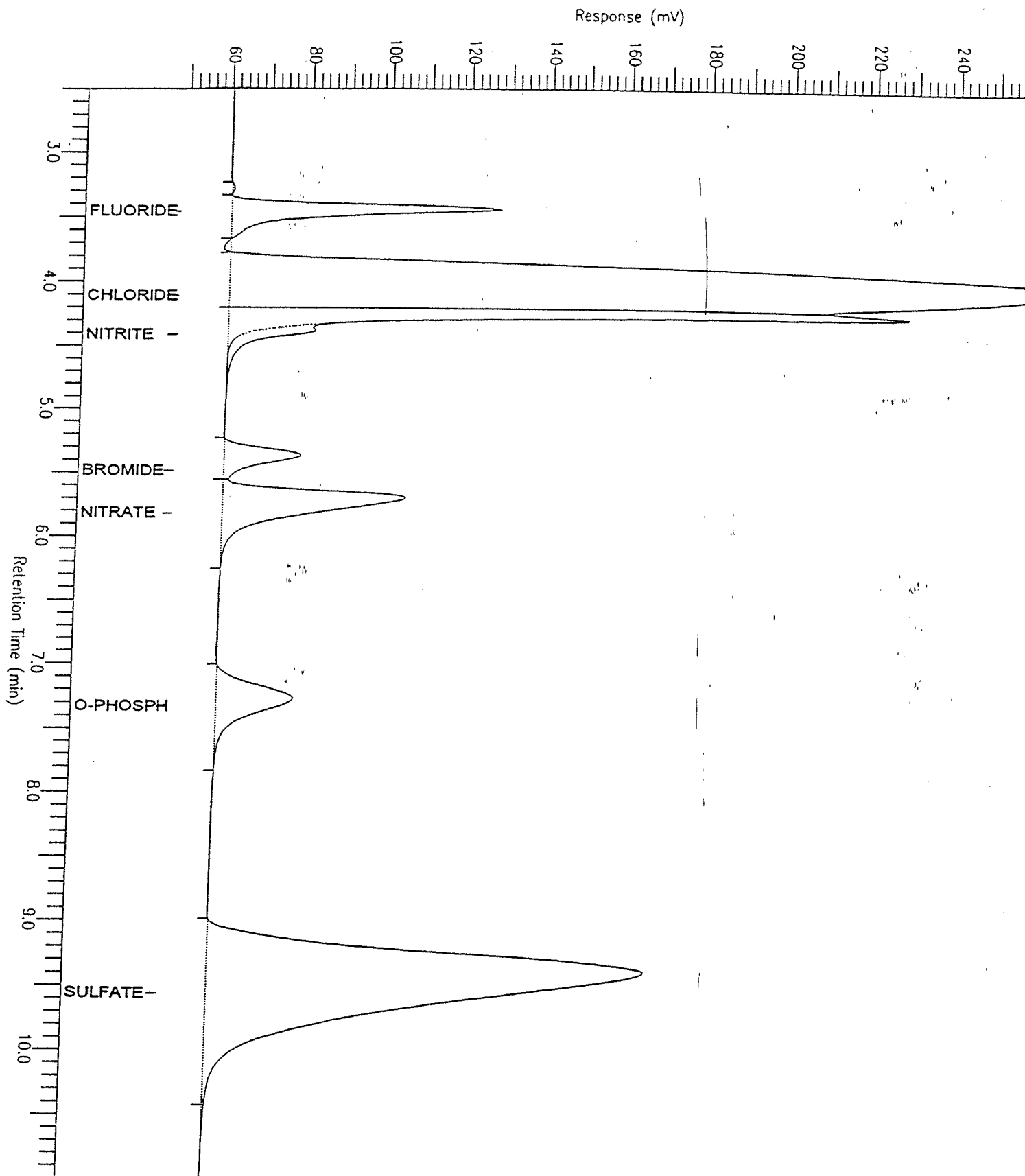
Report stored in ASCII file: C:\TC4\DATA\JUL\0711030.TX0

Standard Anions by IC

Sample Name : 9607228-2-S2
FileName : C:\TC4\DATA\JUL\0711030.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0
End Time : 11.00 min
Plot Offset: 48 mV

Sample #: 30
Date : 7/11/96 06:15 PM
Time of Injection: 7/11/96 06:05 PM
Low Point : 48.29 mV
Plot Scale: 220.4 mV
High Point : 268.73 mV

Page 1 of 1



002744

Software Version: 4.0<1C29>

Date: 7/11/96 06:26 PM

Sample Name : 9607228*2*R1

Data File : C:\TC4\DATA\JUL\0711031.RAW Date: 7/11/96 06:16 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 31 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.06	315997.00	6.430	10.00	64.303
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.62	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.78	113321.50	3.862	10.00	38.622

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=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711031.TX0

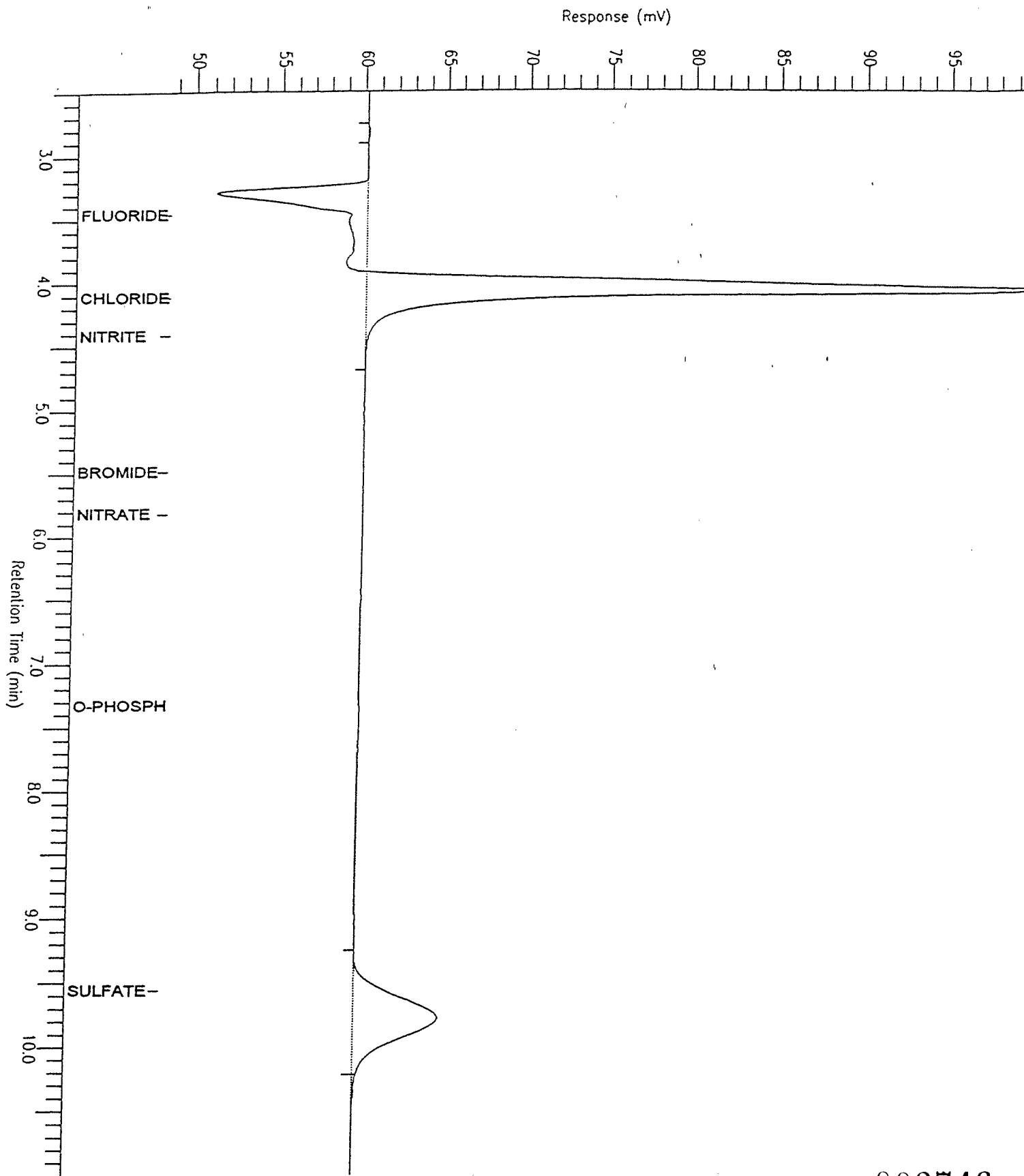
Standard Anions by IC

Sample Name : 9607228-2-R1
FileName : C:\TC4\DATA\JUL\0711031.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 49 mV

Sample #: 31
Date : 7/11/96 06:26 PM
Time of Injection: 7/11/96 06:16 PM
Low Point : 48.57 mV
Plot Scale: 53.0 mV
High Point : 101.61 mV

Page 1 of 1



002746

Software Version: 4.0<1C29>
 Date: 7/11/96 06:37 PM
 Sample Name : 9607228*2*S1
 Data File : C:\TC4\DATA\JUL\0711032.RAW Date: 7/11/96 06:27 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 32 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	310555.50	4.636	10.00	46.356
Chloride	4.09	963642.00	19.150	10.00	191.496 ^{106%}
Nitrite	4.36	75253.00	2.220	10.00	22.203 ^{8%}
Bromide	5.37	154941.50	8.134	10.00	81.343
Nitrate	5.70	531237.50	19.476	10.00	194.763
o-Phosphate	7.28	278663.50	29.473	10.00	294.729
Sulfate	9.50	1626450.00	42.817	10.00	428.171

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711032.TXT

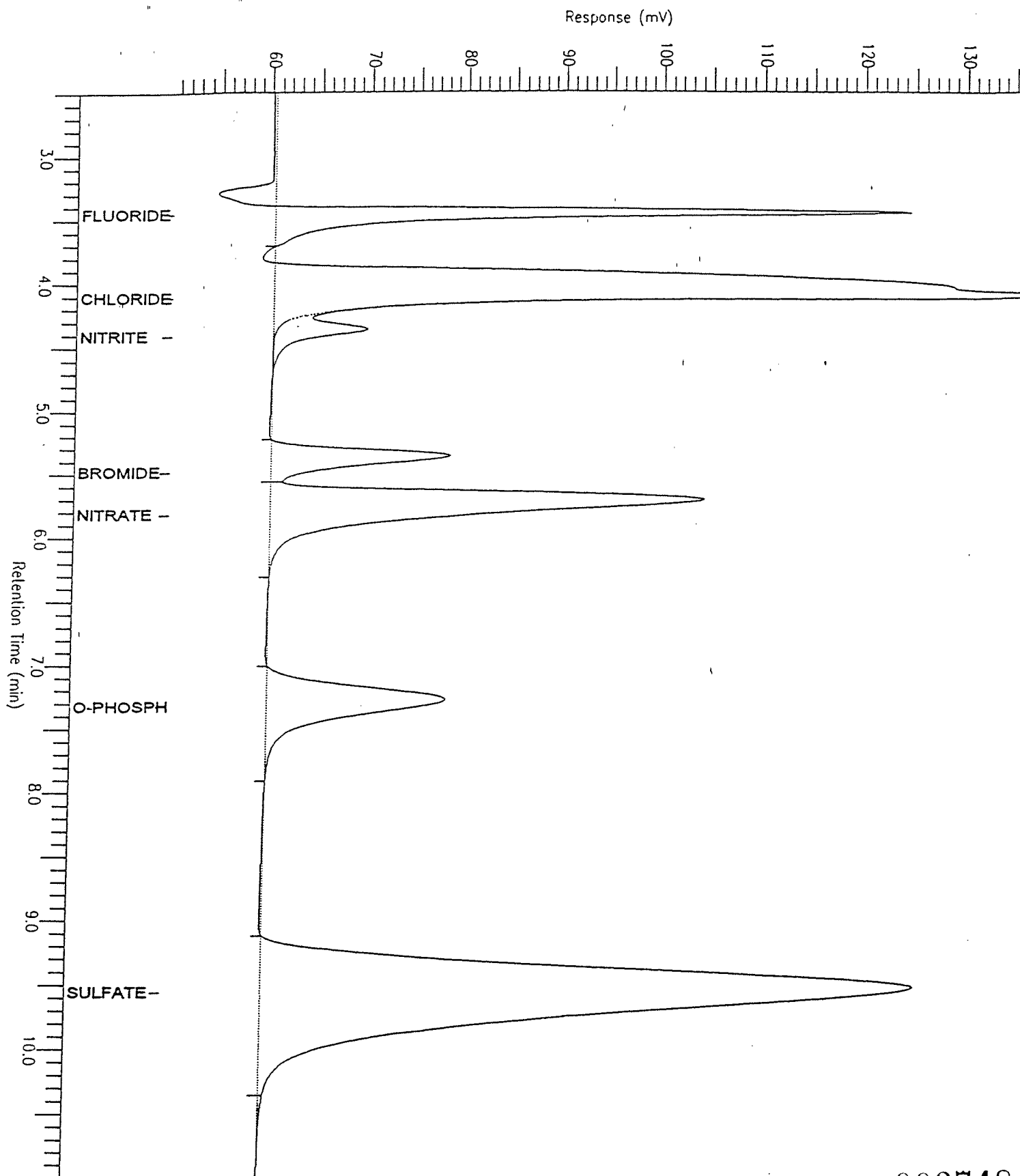
Standard Anions by IC

Sample Name : 9607228-2-S1
FileName : C:\ATC4\DATA\JUL\0711032.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 32
Date : 7/11/96 06:37 PM
Time of Injection: 7/11/96 06:27 PM
Low Point : 50.34 mV
Plot Scale: 89.6 mV
High Point : 139.98 mV

Page 1 of 1



002748

Software Version: 4.0<1C29>

Date: 7/11/96 06:48 PM

Sample Name : 9607228*2*S2

Data File : C:\TC4\DATA\JUL\0711033.RAW Date: 7/11/96 06:38 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 33 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
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=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	312410.00	4.662	10.00	46.621
Chloride	4.09	986706.00	19.208	10.00	192.080
Nitrite	4.36	77726.00	2.291	10.00	22.908
Bromide	5.37	155886.50	8.183	10.00	81.834
Nitrate	5.71	533344.50	19.551	10.00	195.514
o-Phosphate	7.28	283009.50	29.930	10.00	299.297
Sulfate	9.50	1637569.50	43.103	10.00	431.034

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711033.TX0

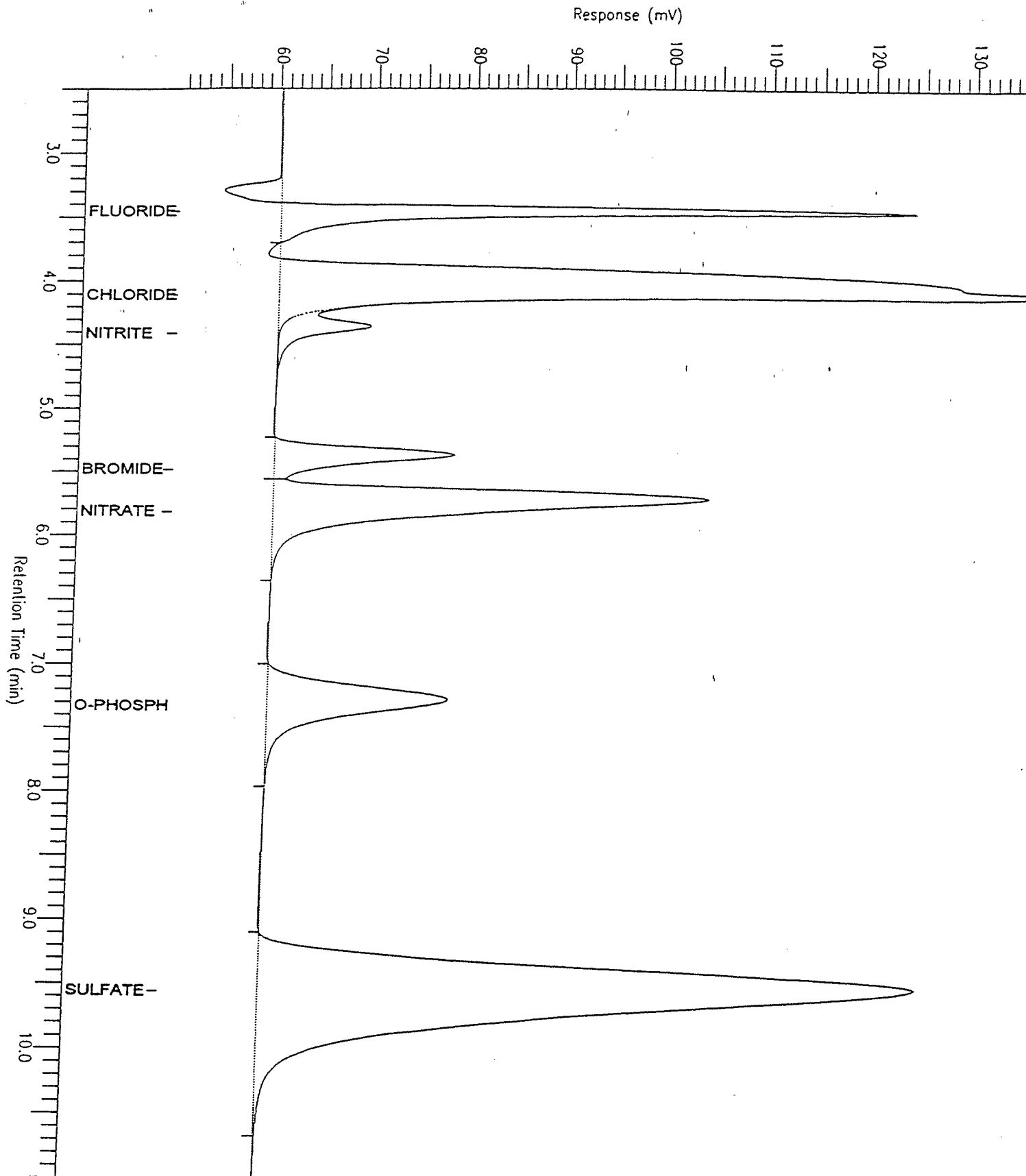
Standard Anions by IC

Sample Name : 960722E-2-S2
FileName : C:\TC4\DATA\JUL\0711033.raw
Method : .0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 33
Date : 7/11/96 06:48 PM
Time of Injection: 7/11/96 06:38 PM
Low Point : 50.35 mV
Plot Scale: 89.5 mV
High Point : 139.88 mV

Page 1 of 1



002750

Software Version: 4.0<1C29>

Date: 7/11/96 06:59 PM

Sample Name : 9607228*2*R1

Data File : C:\TC4\DATA\JUL\0711034.RAW Date: 7/11/96 06:49 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 34 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.04	115999.00	2.620	25.00	65.502
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.79	44334.00	2.086	25.00	52.153

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711034.TX0

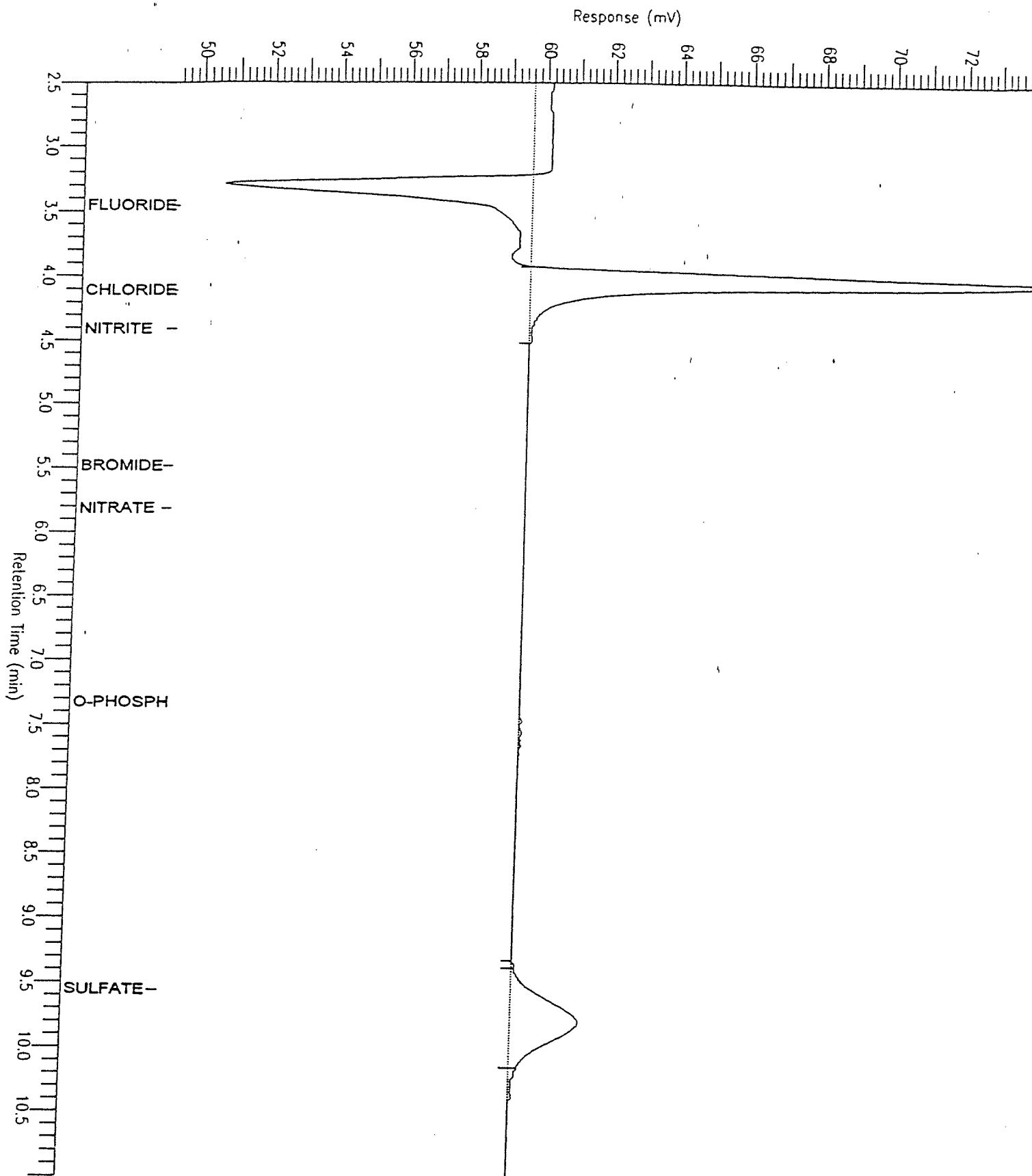
002751

Standard Anions by IC

Sample Name : 9607228-2-R1
FileName : C:\ATC4\DATA\JUL\0711034.raw
Method : 0711
Start Time : 2:50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 49 mV

Sample #: 34
Date : 7/11/96 06:59 PM
Time of Injection: 7/11/96 06:49 PM
Low Point : 49.36 mV
Plot Scale: 25.8 mV
Page 1 of 1
High Point : 75.12 mV



002752

Software Version: 4.0<1C29>

Date: 7/11/96 07:10 PM

Sample Name : 9607228*2*S1

Data File : C:\TC4\DATA\JUL\0711035.RAW Date: 7/11/96 07:00 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 35 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23

Analyst _____

Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	305890.50	4.569	25.00	114.219
Chloride	4.07	762538.50	14.937	25.00	373.434
Nitrite	4.36	72610.00	2.145	25.00	53.624
Bromide	5.37	155244.50	8.150	25.00	203.752
Nitrate	5.71	532914.00	19.536	25.00	488.400
o-Phosphate	7.28	280953.00	29.714	25.00	742.839
Sulfate	9.51	1544819.50	40.716	25.00	1017.889

=====

=====
Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711035.TX0

002753

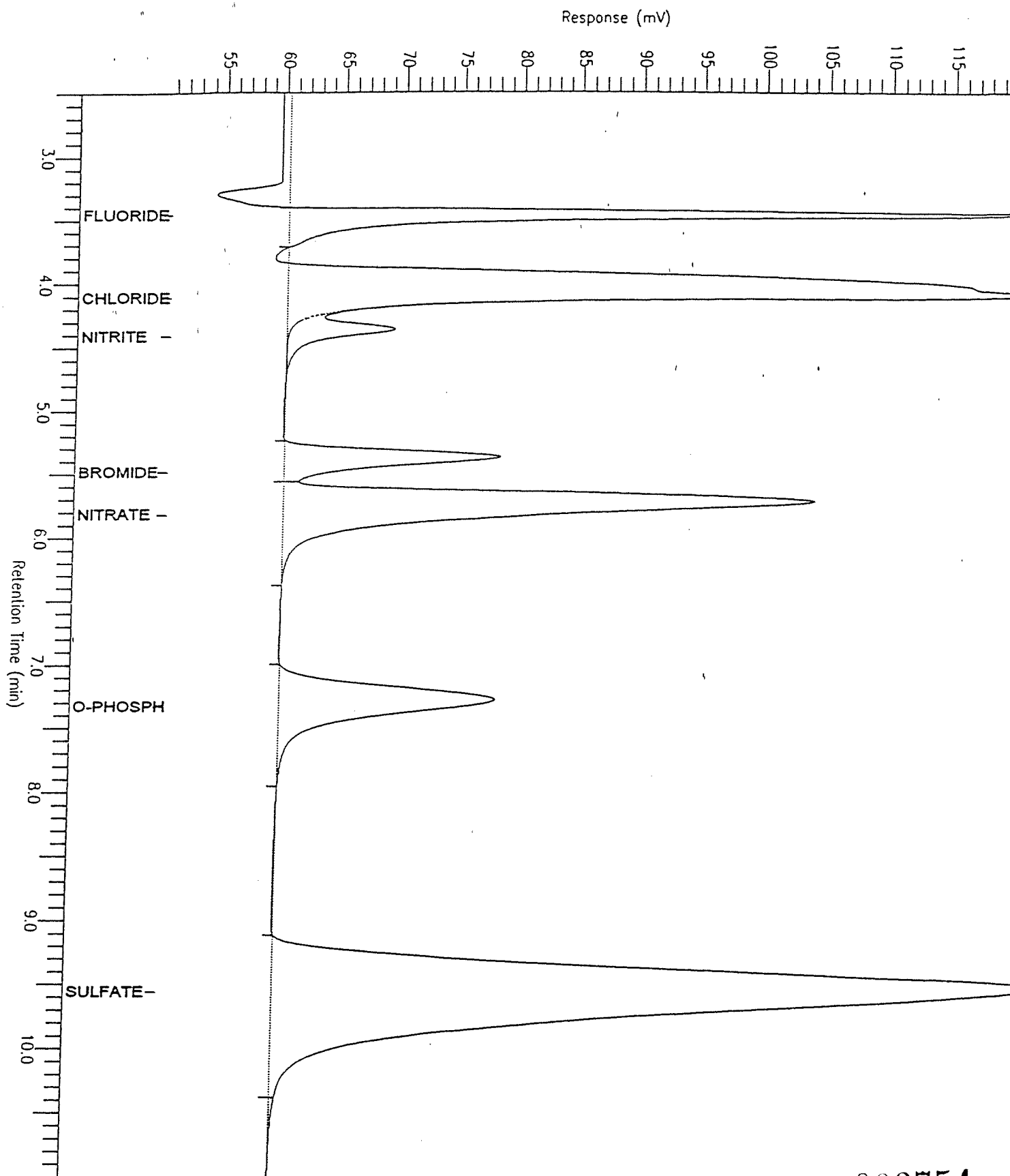
Standard Anions by IC

Sample Name : 9607228*2*S1
FileName : C:\TC4\DATA\JUL\0711035.raw
Method : 0711
Start Time : 2:50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 51 mV

Sample #: 35
Date : 7/11/96 07:10 PM
Time of Injection: 7/11/96 07:00 PM
Low Point : 50.71 mV
Plot Scale: 73.5 mV
High Point : 124.23 mV

Page 1 of 1



002754

Software Version: 4.0<1C29>

Date: 7/11/96 07:21 PM

Sample Name : 9607228*2*S2

Data File : C:\TC4\DATA\JUL\0711036.RAW Date: 7/11/96 07:11 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 36 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	306616.00	4.579	25.00	114.479
Chloride	4.07	764992.00	14.964	25.00	374.602
Nitrite	4.36	72901.00	2.153	25.00	53.831
Bromide	5.37	155726.50	8.175	25.00	204.378
Nitrate	5.70	533411.00	19.554	25.00	488.843
o-Phosphate	7.28	281838.50	29.807	25.00	745.165
Sulfate	9.50	1549742.00	40.842	25.00	1021.058

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0711036.TX0
=====

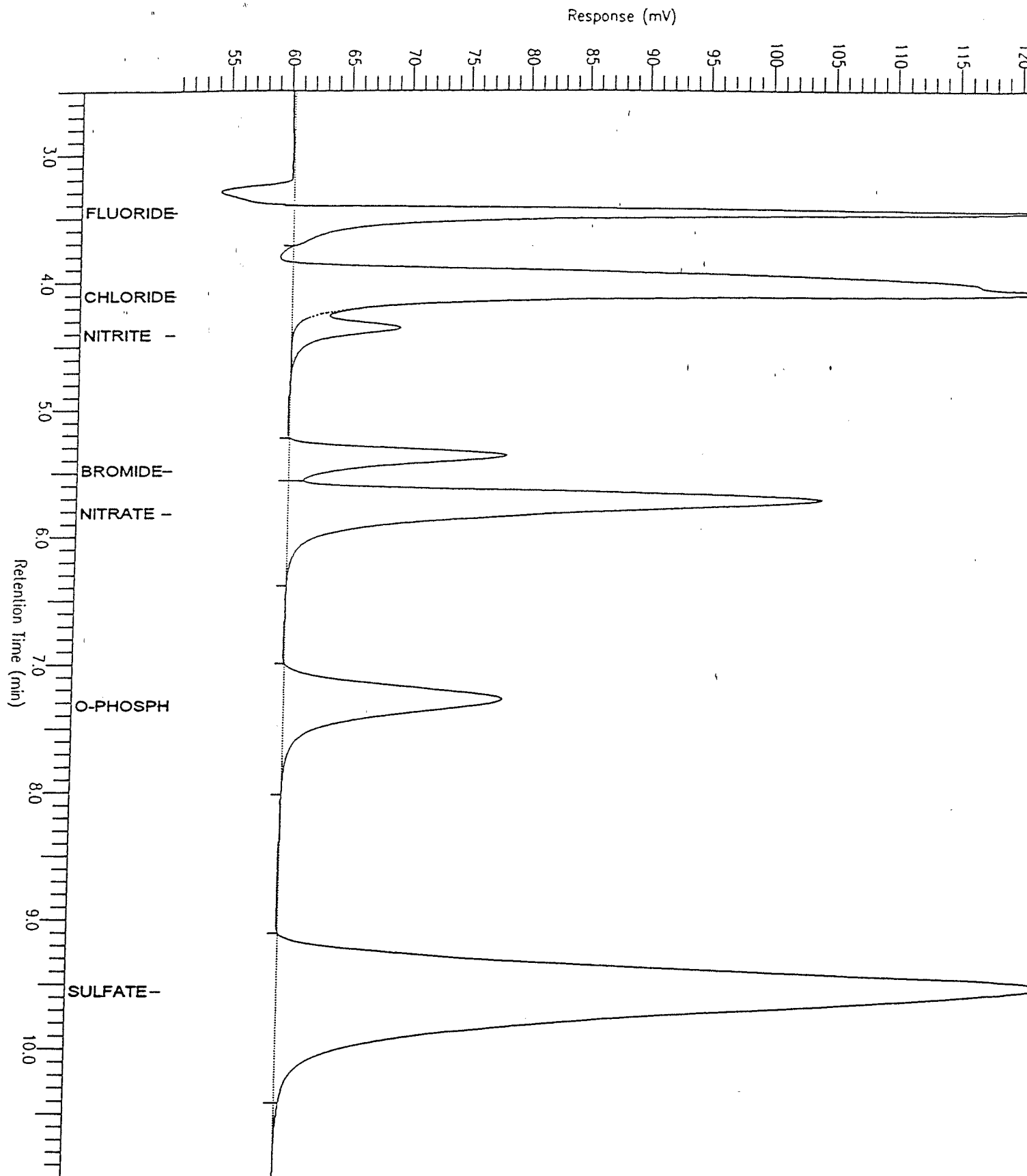
Standard Anions by IC

Sample Name : 9607228*2*S2
FileName : C:\TC4\DATA\JUL\0711036.rew
Method : 0711
Start Time : 2450 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 51 mV

Sample #: 36
Date : 7/11/96 07:21 PM
Time of Injection: 7/11/96 07:11 PM
Low Point : 50.72 mV
Plot Scale: 73.4 mV
High Point : 124.13 mV

Page 1 of 1



002756

Software Version: 4.0<1C29>

Date: 7/11/96 07:32 PM

Sample Name : CCV

Data File : C:\TC4\DATA\JUL\0711037.RAW Date: 7/11/96 07:22 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 37 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	328689.50	4.895	1.00	4.895
Chloride	4.08	941779.50	18.352	1.00	18.352
Nitrite	4.36	160511.50	4.652	1.00	4.652
Bromide	5.36	179864.50	9.430	1.00	9.430
Nitrate	5.68	647688.00	23.627	1.00	23.627
o-Phosphate	7.29	117562.00	12.541	1.00	12.541
Sulfate	9.47	1803651.00	47.379	1.00	47.379

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711037.TX0

002757

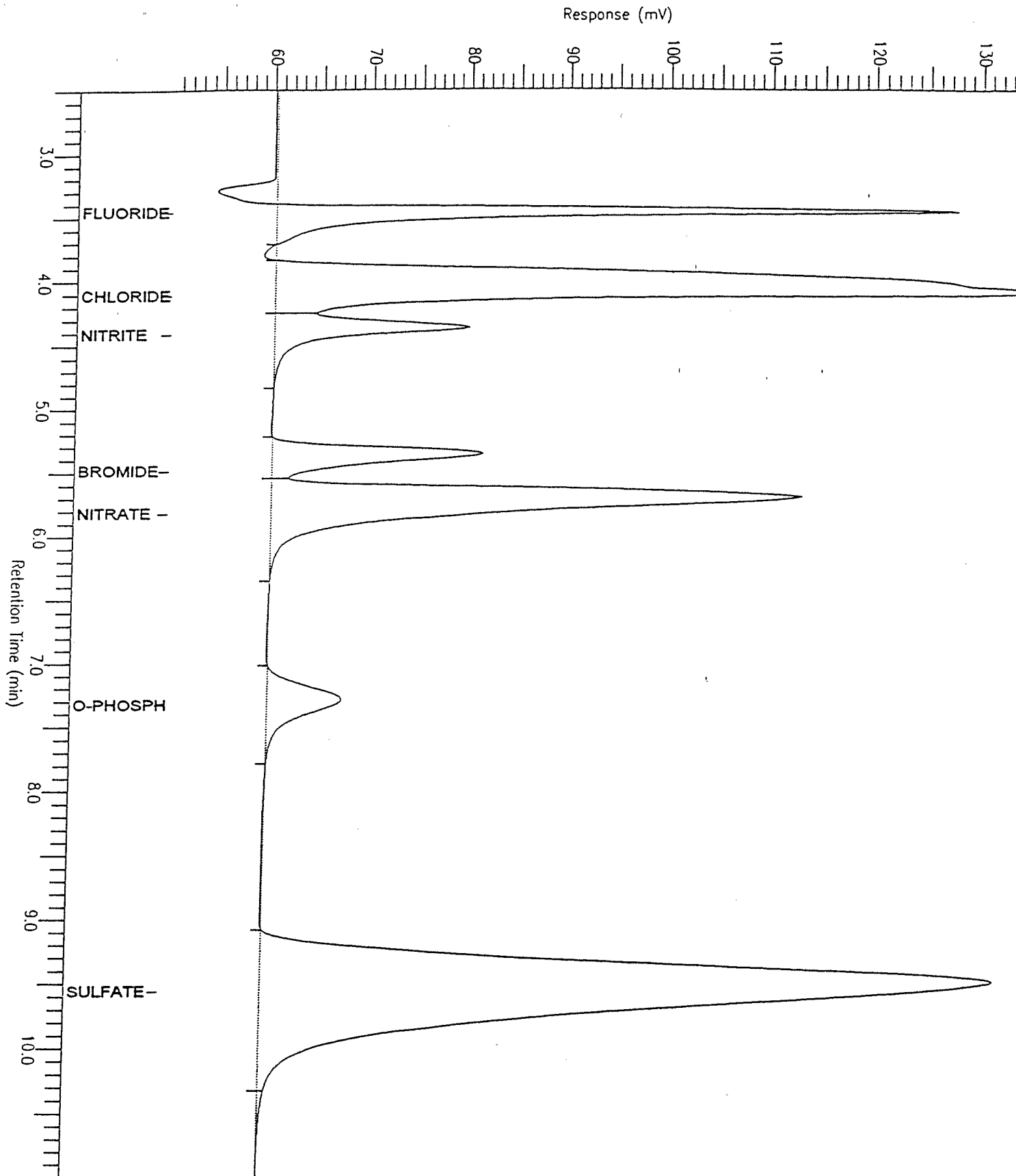
Standard Anions by IC

Sample Name : CCV
FileName : C:\TC4\DATA\JUL\0711037.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 37
Date : 7/11/96 07:32 PM
Time of Injection: 7/11/96 07:22 PM
Low Point : 50.11 mV
Plot Scale: 88.7 mV
High Point : 138.61 mV

Page 1 of 1



002758

Software Version: 4.0<1C29>

Date: 7/11/96 07:43 PM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0711038.RAW Date: 7/11/96 07:33 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 38 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

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Version Kyoko	Instrument 533-23	Analyst	Batch
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Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.12	0.00	0.000	-----	0.000
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000

=====

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

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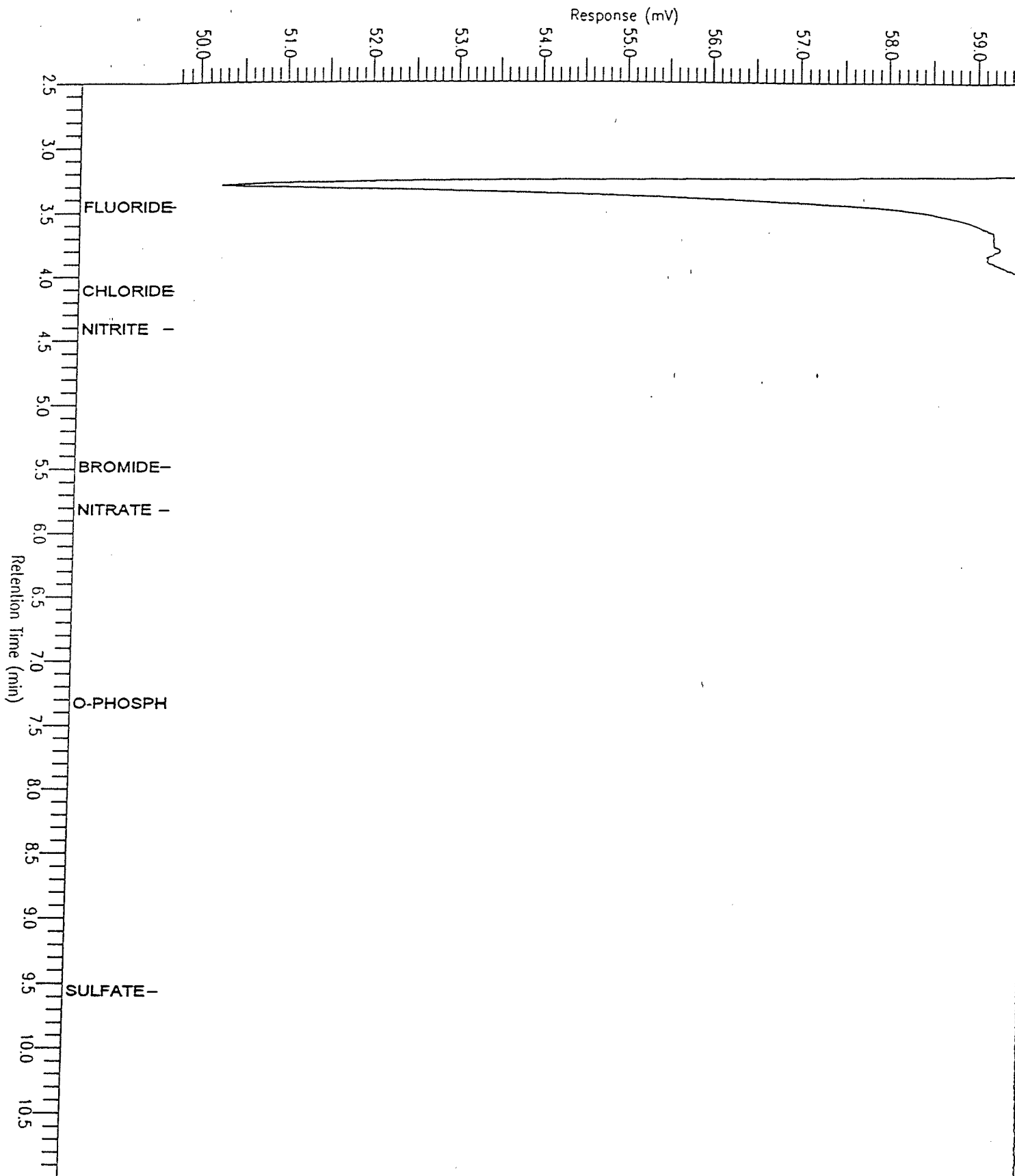
Report stored in ASCII file: C:\TC4\DATA\JUL\0711038.TX0

Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0711038.raw
Method : .0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 38
Date : 7/11/96 07:43 PM
Time of Injection: 7/11/96 07:33 PM
Low Point : 49.75 mV
Plot Scale: 10.4 mV
High Point : 60.12 mV



002760

Software Version: 4.0<1C29>

Date: 7/11/96 07:54 PM

Sample Name : 9607228*3

Data File : C:\TC4\DATA\JUL\0711039.RAW Date: 7/11/96 07:44 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 39 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.31	359315.50	5.334	1.00	5.334
Chloride	4.12	0.00	0.000	-----	0.000
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

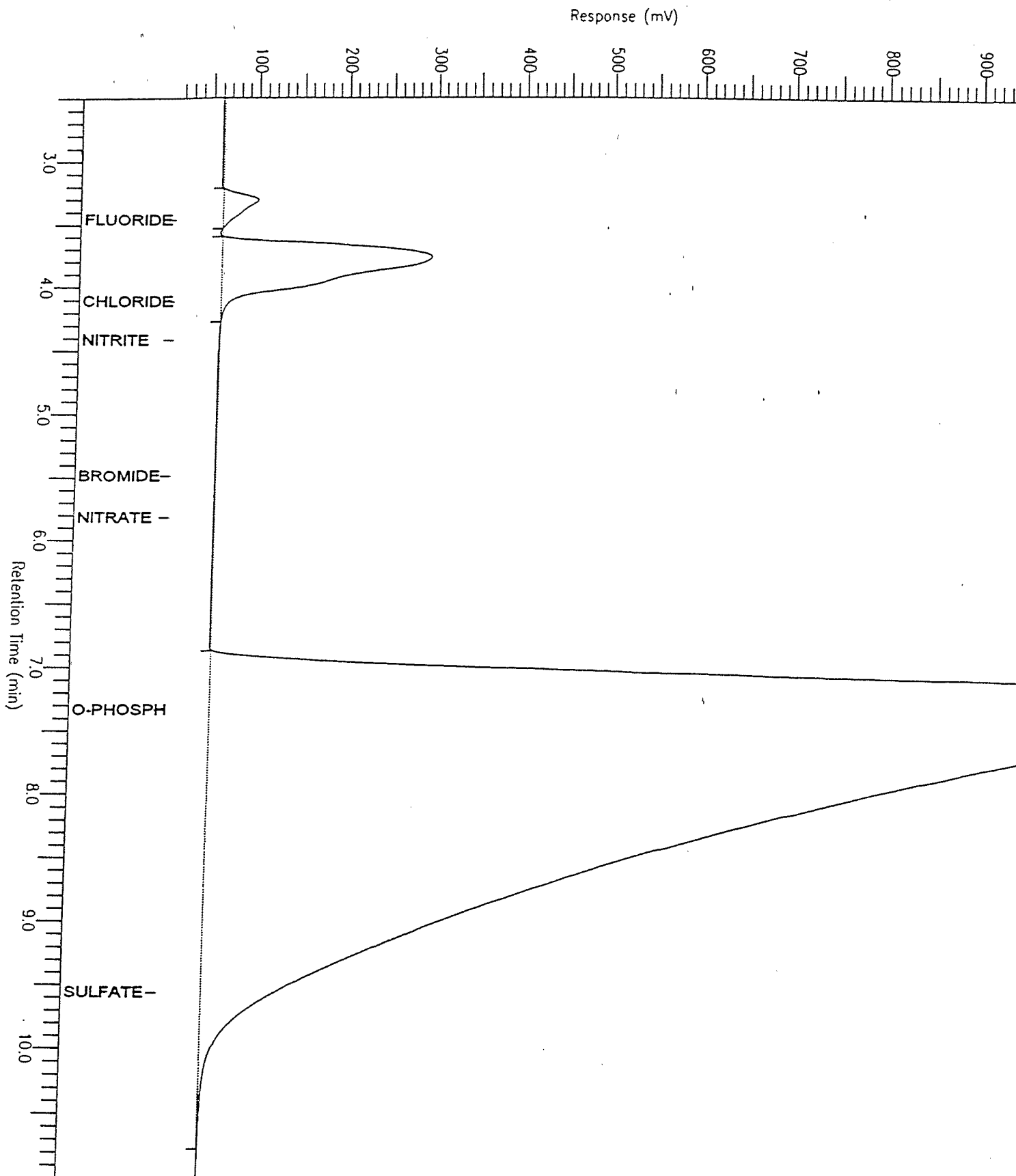
Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0711039.TX0

Standard Anions by IC

Sample Name : 9607226*3
FileName : C:\TC4\DATA\JUL\0711039.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0
End Time : 11.00 min
Plot Offset : 12 mV

Sample #: 39
Date : 7/11/96 07:54 PM
Time of Injection: 7/11/96 07:44 PM
Low Point : 12.11 mV
Plot Scale: 987.9 mV
Page 1 of 1
High Point : 1000.00 mV



002762

Software Version: 4.0<1C29>

Date: 7/11/96 08:05 PM

Sample Name : 9607228*3

Data File : C:\TC4\DATA\JUL\0711040.RAW Date: 7/11/96 07:55 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 40 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

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Version Kyoko	Instrument 533-23	Analyst	Batch
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=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	3.98	307233.50	6.263	10.00	62.633
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000 bR

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=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711040.TX0

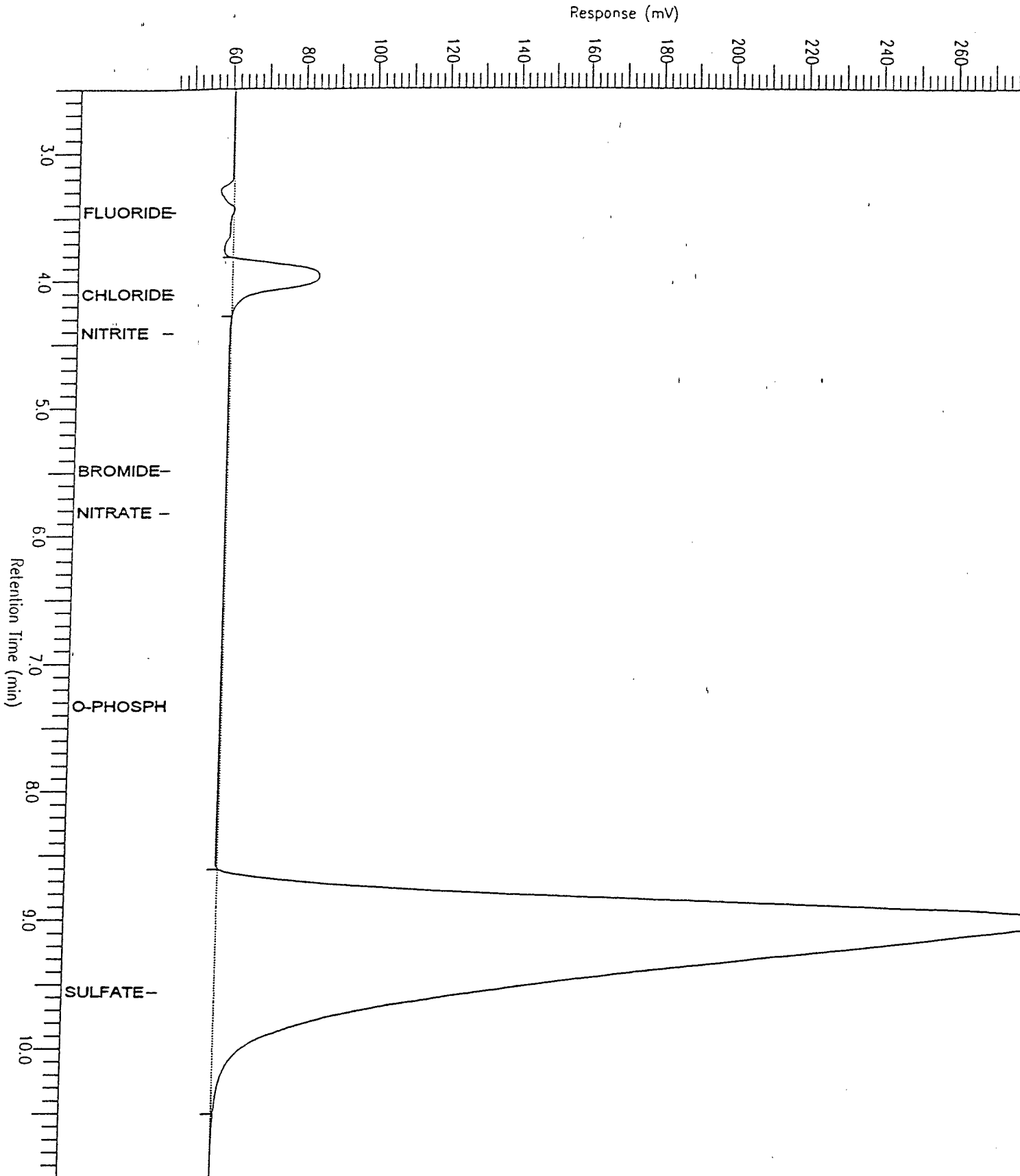
Standard Anions by IC

Sample Name : 9607228-3
FileName : C:\TC4\DATA\JUL\0711040.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 45 mV

Sample #: 40
Date : 7/11/96 06:05 PM
Time of Injection: 7/11/96 07:55 PM
Low Point : 45.28 mV
Plot Scale: 246.1 mV
High Point : 291.35 mV

Page 1 of 1



002764

Software Version: 4.0<1C29>

Date: 7/11/96 08:16 PM

Sample Name : 9607228*3

Data File : C:\TC4\DATA\JUL\0711041.RAW Date: 7/11/96 08:06 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 41 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
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=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.00	104010.00	2.392	25.00	59.792
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.32	3038440.50	79.168	25.00	1979.208

=====

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Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711041.TX0

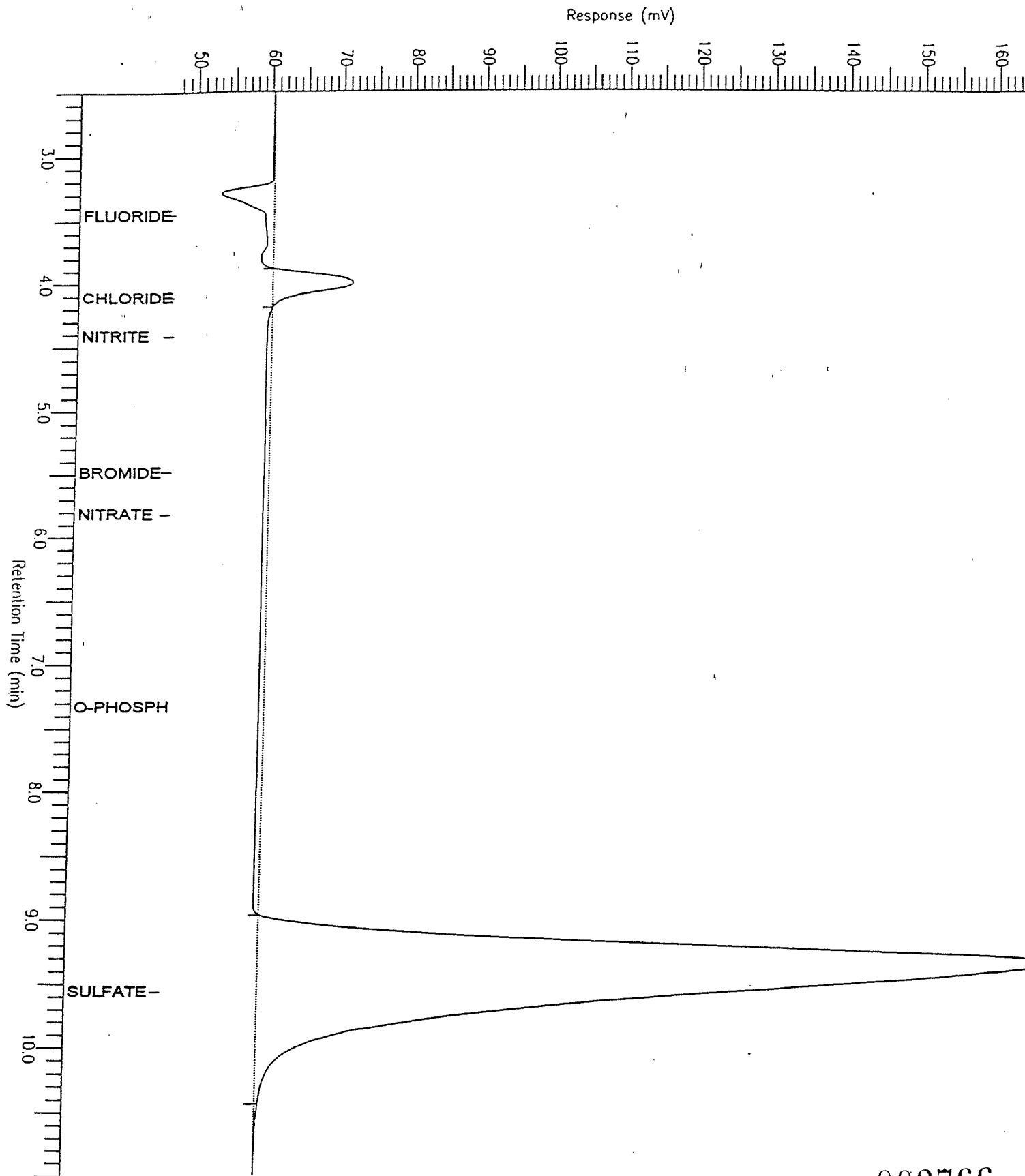
Standard Anions by IC

Sample Name : 9607228*3
FileName : C:\TC4\DATA\JUL\0711041.raw
Method : 0711
Start Time : 2450 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 47 mV

Sample #: 41
Date : 7/11/96 08:16 PM
Time of Injection: 7/11/96 08:06 PM
Low Point : 47.14 mV
Plot Scale: 122.5 mV
High Point : 169.64 mV

Page 1 of 1



002766

Software Version: 4.0<1C29>

Date: 7/11/96 08:27 PM

Sample Name : 9607228*4

Data File : C:\TC4\DATA\JUL\0711042.RAW Date: 7/11/96 08:17 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 42 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.31	186487.00	2.887	1.00	2.887
Chloride	3.98	2.62e+07	500.420	1.00	500.420
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.40	4730.50	0.330	1.00	0.330
Nitrate	5.60	1985614.00	71.313	1.00	71.313 <i>OR</i>
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000 <i>OR</i>

=====

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0711042.TX0
=====

002767

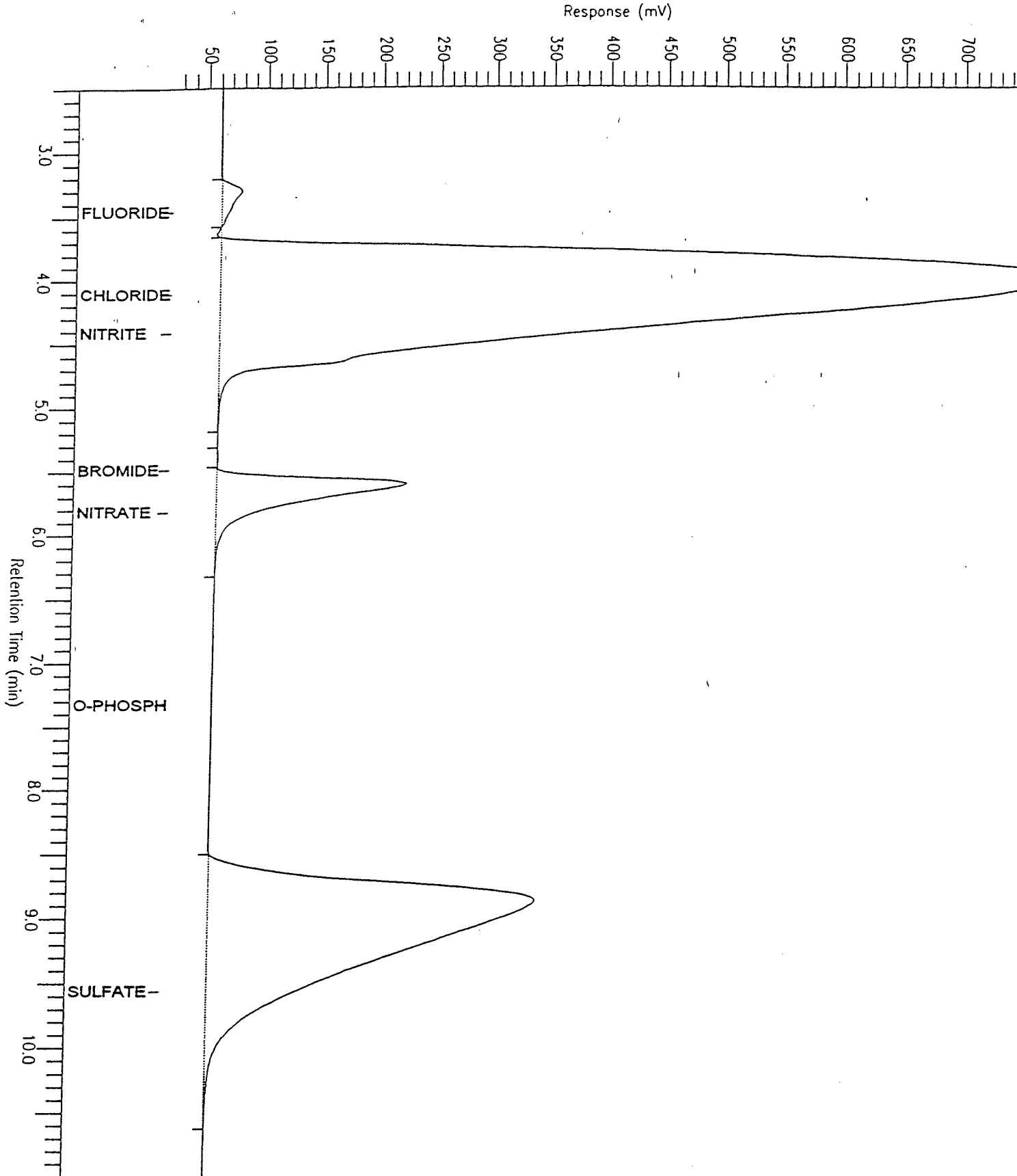
Standard Anions by IC

Sample Name : 9607228*4
FileName : C:\TC4\DATA\JUL\0711042.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 11.00 min
Plot Offset: 21 mV

Sample #: 42
Date : 7/11/96 08:27 PM
Time of Injection: 7/11/96 08:17 PM
Low Point : 20.81 mV
Plot Scale: 766.2 mV
High Point : 786.99 mV

Page 1 of 1



002768

Software Version: 4.0<1C29>

Date: 7/11/96 08:38 PM

Sample Name : 9607228*4

Data File : C:\TC4\DATA\JUL\0711043.RAW Date: 7/11/96 08:28 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 43 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
---------------	-------------------	---------	-------

=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.18	846990.00	16.546	10.00	165.462
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.77	162044.00	6.317	10.00	63.174
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.58	920889.50	24.653	10.00	246.527

=====

bad Resolution See 1:25

=====

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711043.TX0

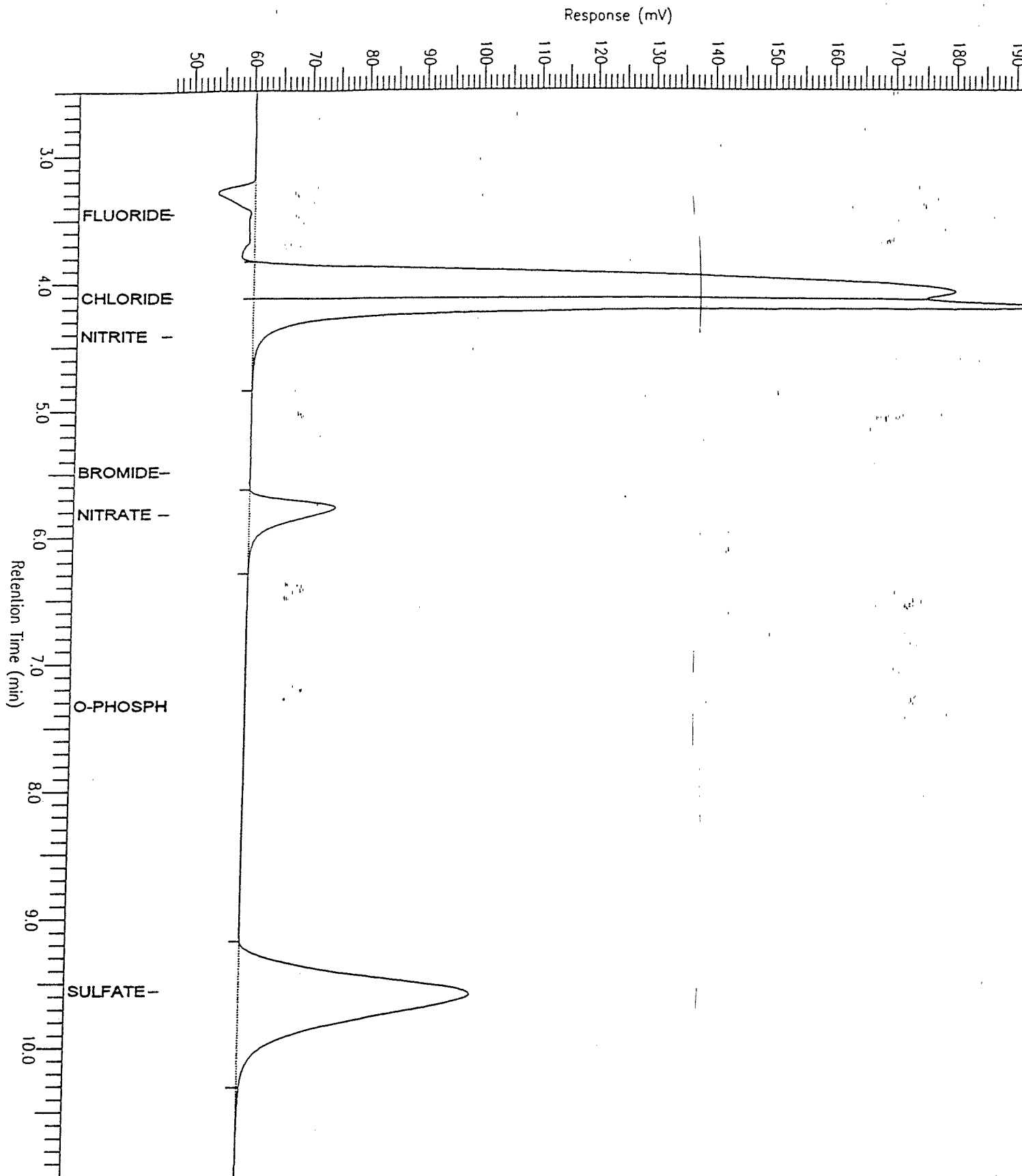
Standard Anions by IC

Sample Name : 9607228*4
FileName : C:\TC4\DATA\JUL\0711043.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 47 mV

Sample #: 43
Date : 7/11/96 08:38 PM
Time of Injection: 7/11/96 08:28 PM
Low Point : 46.69 mV
Plot Scale: 152.5 mV
High Point : 199.24 mV

Page 1 of 1



002770

Software Version: 4.0<1C29>

Date: 7/11/96 08:49 PM

Sample Name : 9607228*4

Data File : C:\TC4\DATA\JUL\0711044.RAW Date: 7/11/96 08:39 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 44 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.10	796660.50	15.591	25.00	389.781
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.81	60753.00	2.707	25.00	67.680
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.69	334641.00	9.560	25.00	238.999

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711044.TX0

002771

Standard Anions by IC

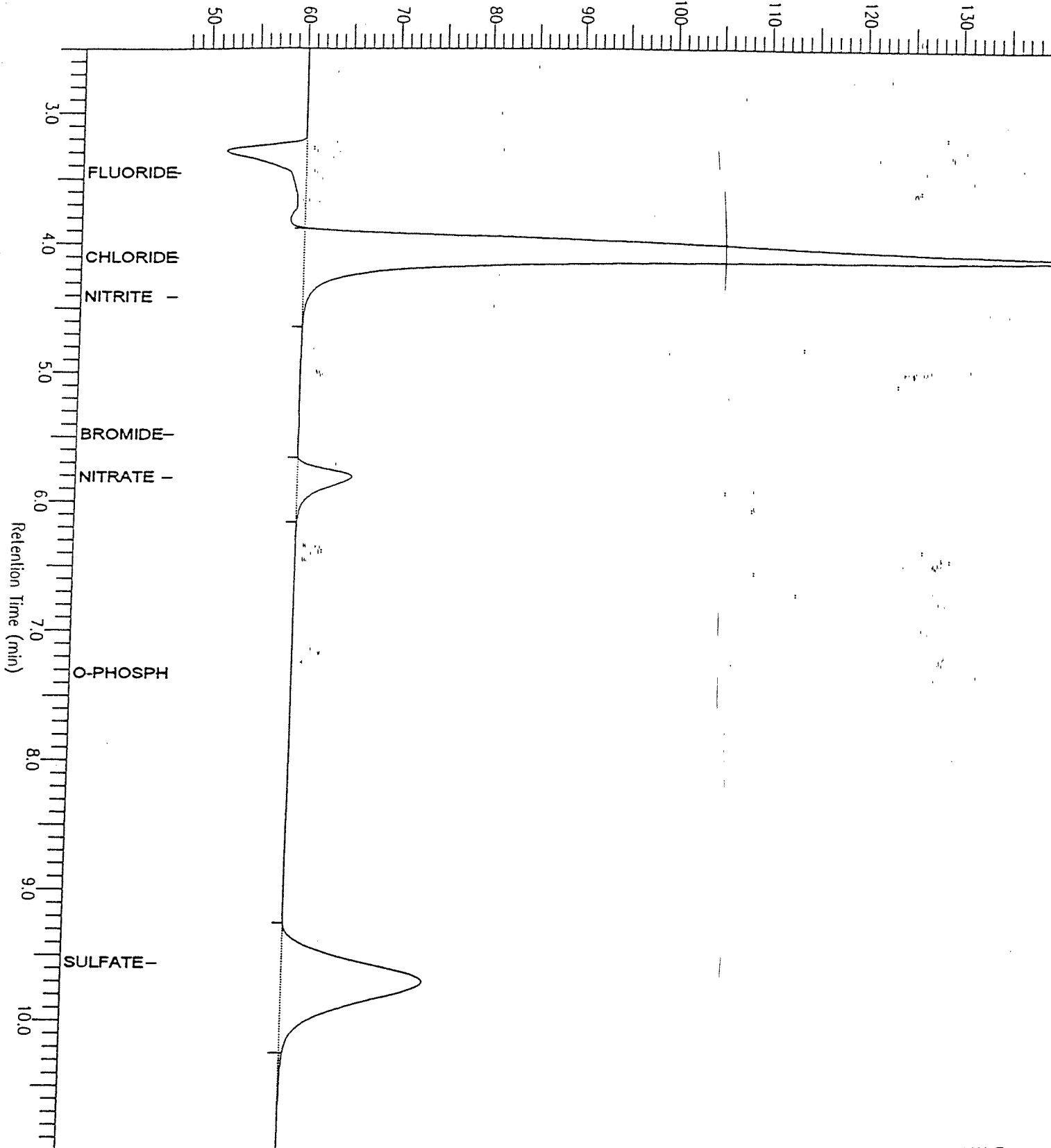
Sample Name : 9607228-4
FileName : C:\TC4\DATA\JUL\0711044.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 47 mV

Sample #: 44
Date : 7/11/96 08:49 PM
Time of Injection: 7/11/96 08:39 PM
Low Point : 47.08 mV
Plot Scale: 96.3 mV
High Point : 143.36 mV

Page 1 of 1

Response (mV)



002772

Software Version: 4.0<1C29>
 Date: 7/11/96 09:00 PM
 Sample Name : 9607228*5
 Data File : C:\TC4\DATA\JUL\0711045.RAW Date: 7/11/96 08:50 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 45 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.30	195479.50	2.988	1.00	2.988
Chloride	3.96	3.03e+07	576.906	1.00	576.906
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.59	2266554.50	117.841	1.00	117.841
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711045.TX0

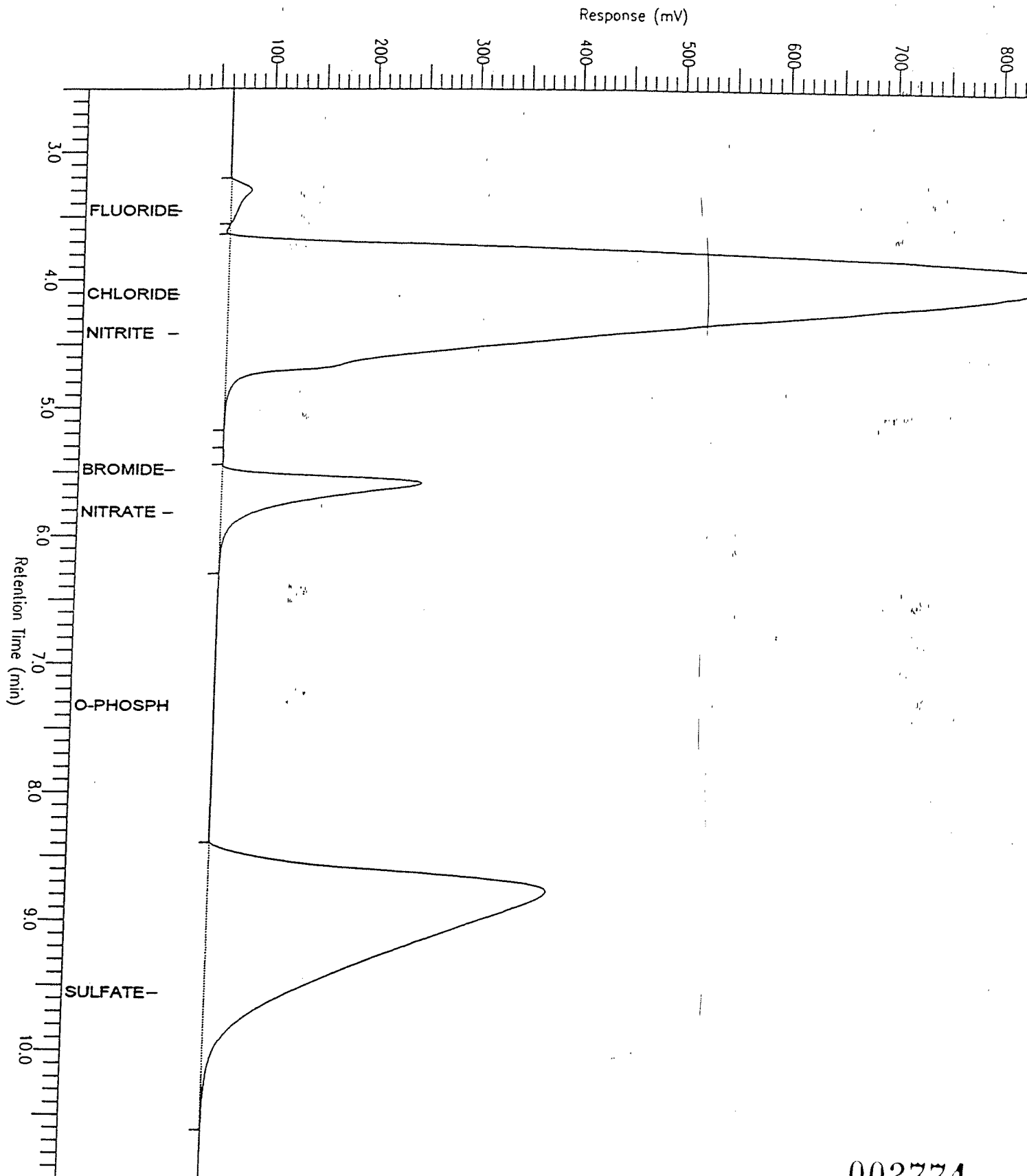
Standard Anions by IC

Sample Name : 9607228*5
FileName : C:\TC4\DATA\JUL\0711045.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 16 mV

Sample #: 45
Date : 7/11/96 09:00 PM
Time of Injection: 7/11/96 08:50 PM
Low Point : 16.40 mV
Plot Scale: 859.8 mV
High Point : 876.19 mV

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002774

Software Version: 4.0<1C29>

Date: 7/11/96 09:11 PM

Sample Name : 9607228*5

Data File : C:\TC4\DATA\JUL\0711046.RAW Date: 7/11/96 09:01 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 46 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.19	920630.00	17.949	10.00	179.492
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.77	180929.50	6.991	10.00	69.905
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.55	1132215.50	30.093	10.00	300.932

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0711046.TX0

002775

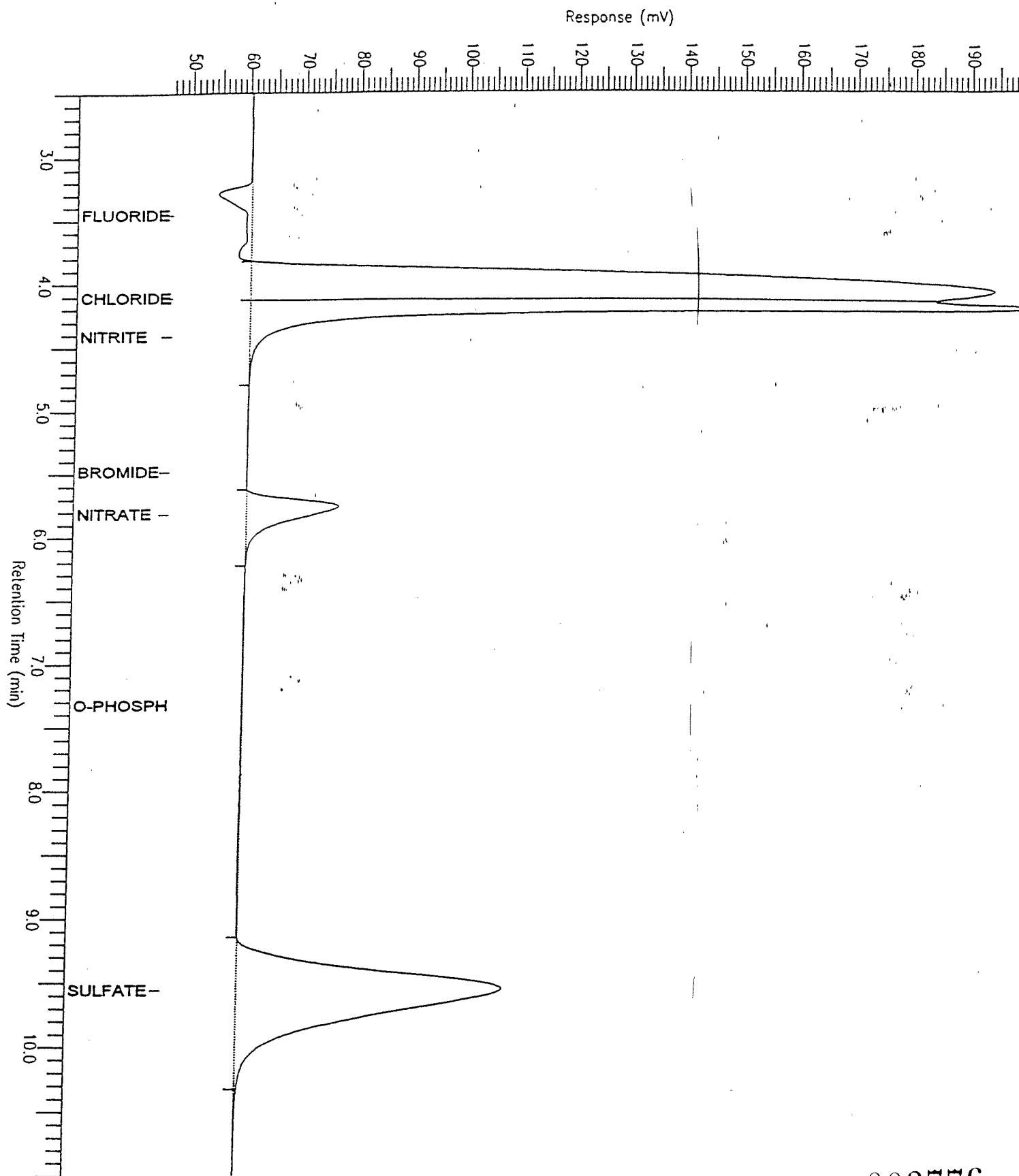
Standard Anions by IC

Sample Name : 9607228-5
FileName : C:\TC4\DATA\JUL\0711046.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 47 mV

Sample #: 46
Date : 7/11/96 09:11 PM
Time of Injection: 7/11/96 09:01 PM
Low Point : 46.72 mV
Plot Scale: 160.5 mV
High Point : 207.22 mV

Page 1 of 1



002776

Software Version: 4.0<1C29>

Date: 7/11/96 09:22 PM

Sample Name : 9607228*5

Data File : C:\TC4\DATA\JUL\0711047.RAW Date: 7/11/96 09:12 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 47 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.11	937462.50	18.270	25.00	456.746
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.80	70401.50	3.051	25.00	76.277
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.67	418851.00	11.728	25.00	293.198

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711047.TX0

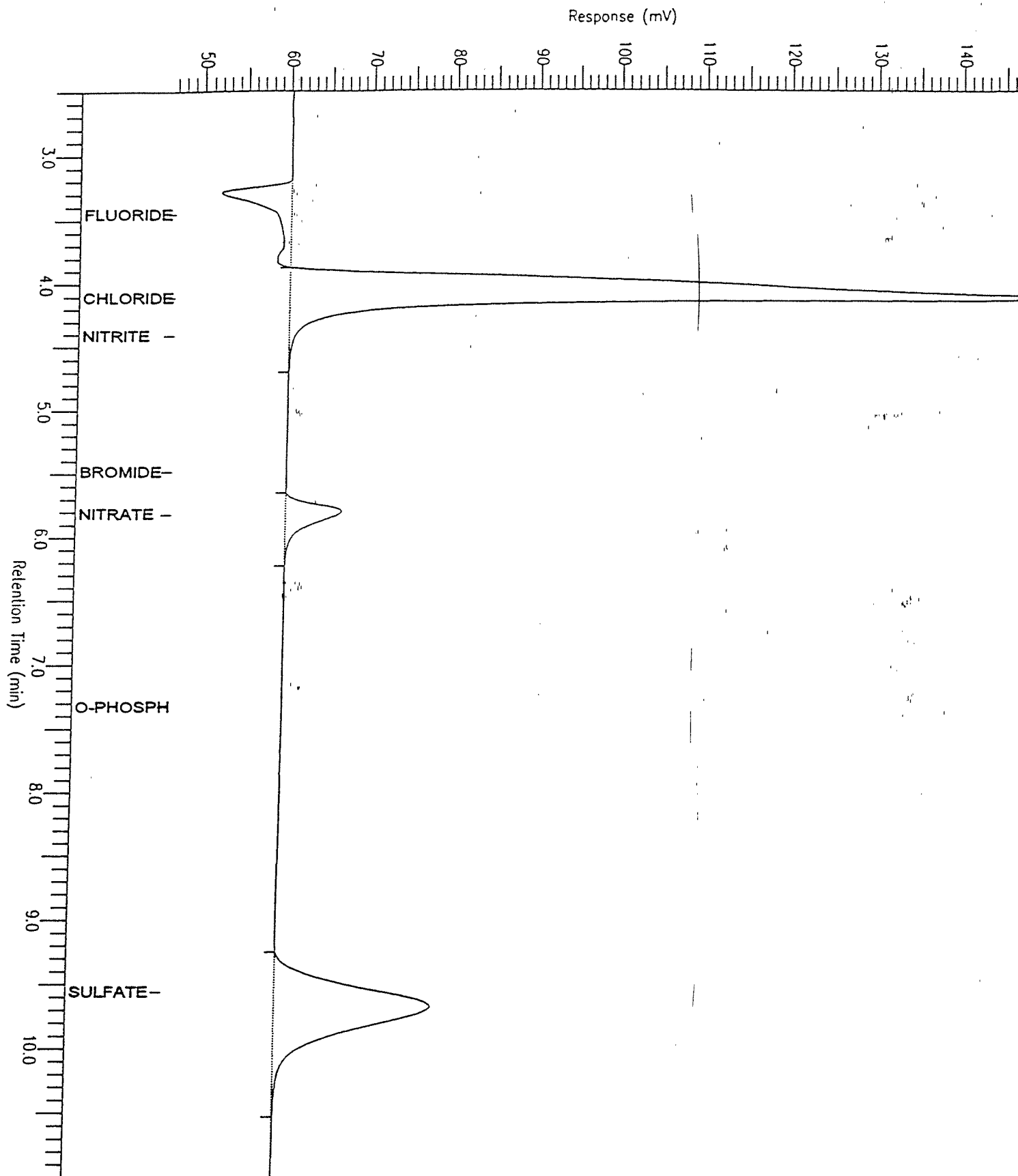
002777

Standard Anions by IC

Sample Name : 9607228*5
FileName : C:\TC4\DATA\JUL\0711047.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

Sample #: 47
Date : 7/11/96 09:22 PM
Time of Injection: 7/11/96 09:12 PM
Low Point : 46.85 mV
Plot Scale: 105.6 mV

Page 1 of 1



002778

Software Version: 4.0<1C29>
 Date: 7/11/96 09:33 PM
 Sample Name : 9607228*6
 Data File : C:\TC4\DATA\JUL\0711048.RAW Date: 7/11/96 09:23 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 48 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret. Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.31	196231.50	2.998	1.00	2.998
Chloride	3.96	3.01e+07	574.643	1.00	574.643
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.58	2251385.50	117.053	1.00	117.053
Nitrate	5.82	0.00	0.000	-----	0.000 ^R
c-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000 ^{OR}

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

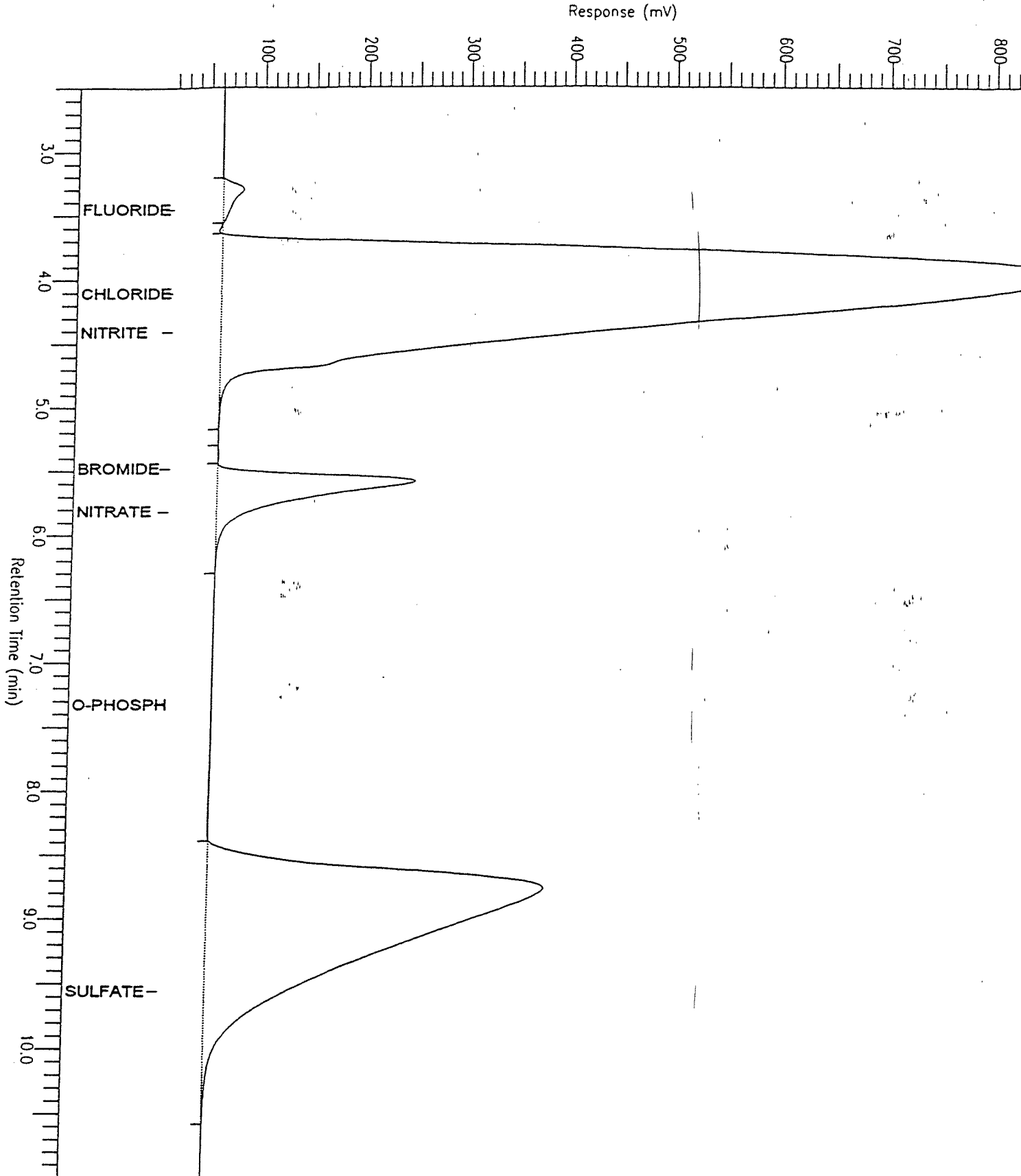
Report stored in ASCII file: C:\TC4\DATA\JUL\0711048.TX0

Standard Anions by IC

Sample Name : 9607228-6
FileName : C:\IC4\DATA\JUL\0711048.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

Sample #: 48
Date : 7/11/96 09:33 PM
Time of Injection: 7/11/96 09:23 PM
Low Point : 16.57 mV
Plot Scale: 856.5 mV

Page 1 of 1



002780

Software Version: 4.0<1C29>

Date: 7/11/96 09:44 PM

Sample Name : CCV

Data File : C:\TC4\DATA\JUL\0711049.RAW Date: 7/11/96 09:34 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 49 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret. Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	324437.50	4.834	1.00	4.834
Chloride	4.07	933792.00	18.200	1.00	18.200
Nitrite	4.36	157994.00	4.580	1.00	4.580
Bromide	5.36	178012.50	9.333	1.00	9.333
Nitrate	5.69	640205.50	23.360	1.00	23.360
o-Phosphate	7.29	109804.50	11.726	1.00	11.726
Sulfate	9.46	1783225.00	46.853	1.00	46.853

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711049.TX0

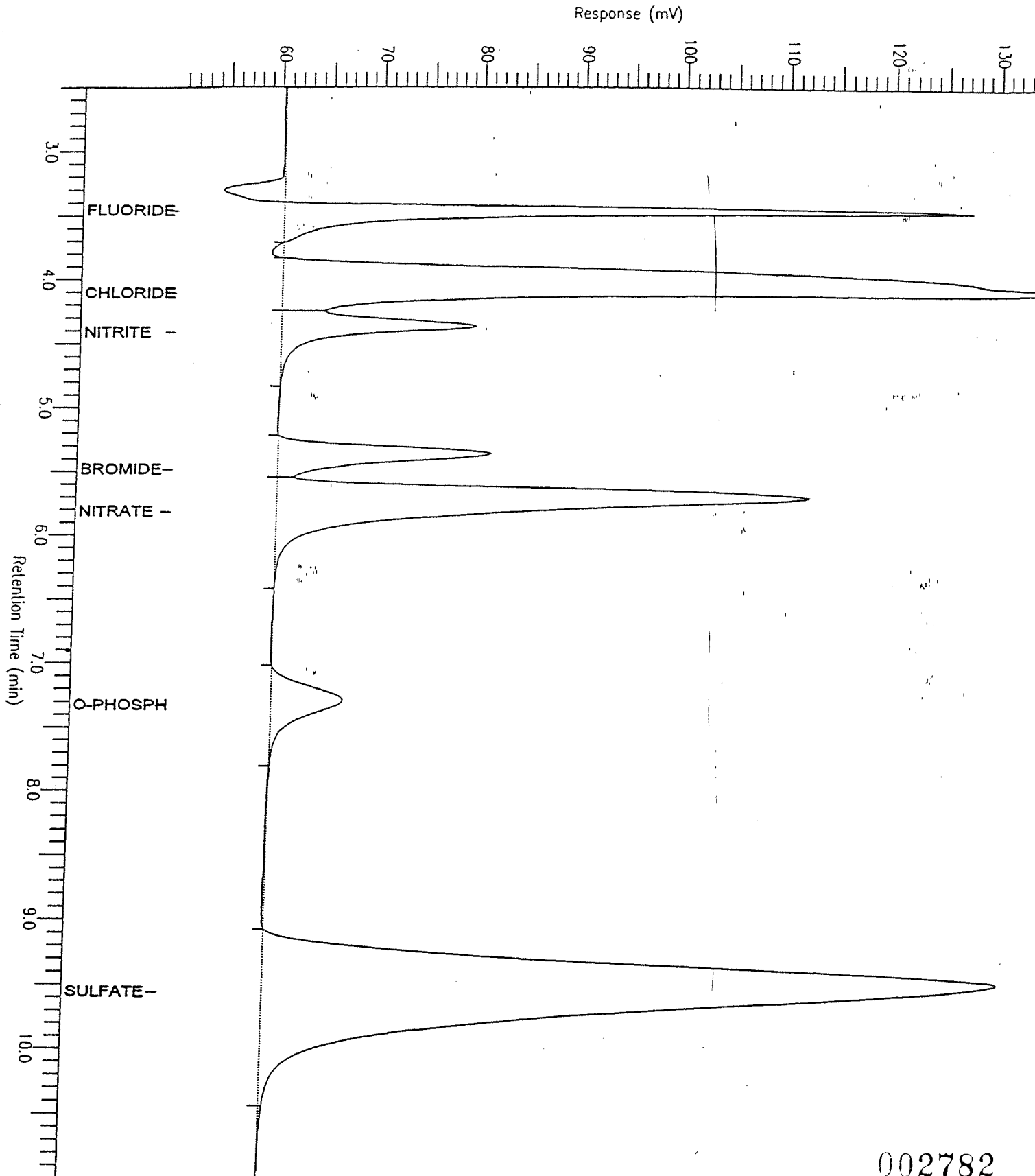
Standard Anions by IC

Sample Name : CCV
FileName : C:\TC4\DATA\JUL\0711049.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 49
Date : 7/11/96 09:44 PM
Time of Injection: 7/11/96 09:34 PM
Low Point : 50.22 mV
Plot Scale: 67.4 mV
High Point : 137.62 mV

Page 1 of 1



002782

Software Version: 4.0<1C29>

Date: 7/11/96 09:55 PM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0711050.RAW Date: 7/11/96 09:45 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 50 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.12	0.00	0.000	-----	0.000
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000

=====
Reviewed and Approved by Date
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711050.TX0

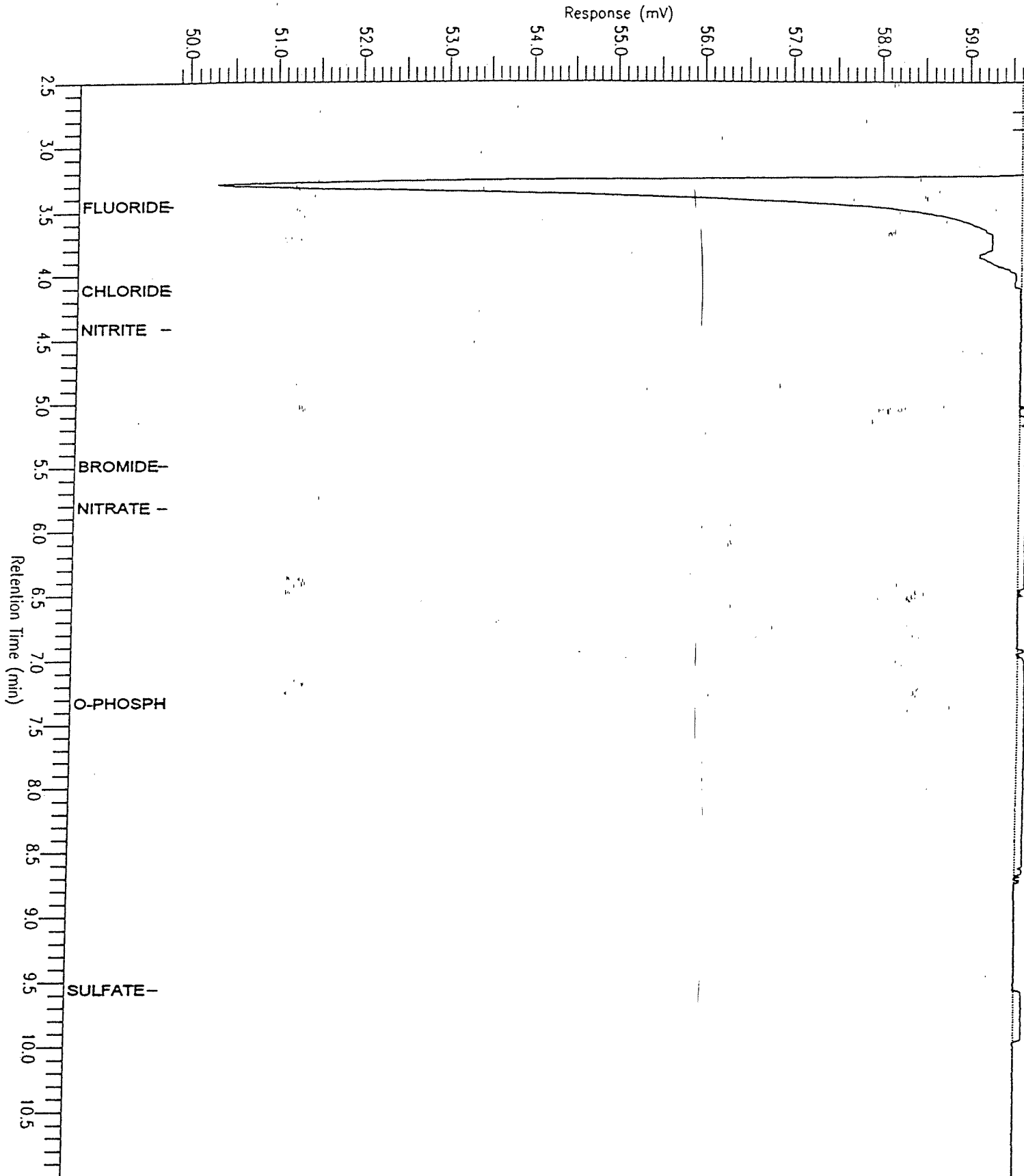
Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0711050.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 50
Date : 7/11/96 09:55 PM
Time of Injection: 7/11/96 09:45 PM
Low Point : 49.82 mV
Plot Scale: 10.3 mV
High Point : 60.14 mV

Page 1 of 1



002784

Software Version: 4.0<1C29>
 Date: 7/11/96 10:06 PM
 Sample Name : 9607228*6
 Data File : C:\TC4\DATA\JUL\0711051.RAW Date: 7/11/96 09:56 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 51 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.19	908048.50	17.709	10.00	177.095
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.76	180331.50	6.969	10.00	69.692
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.54	1132051.50	30.089	10.00	300.890

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

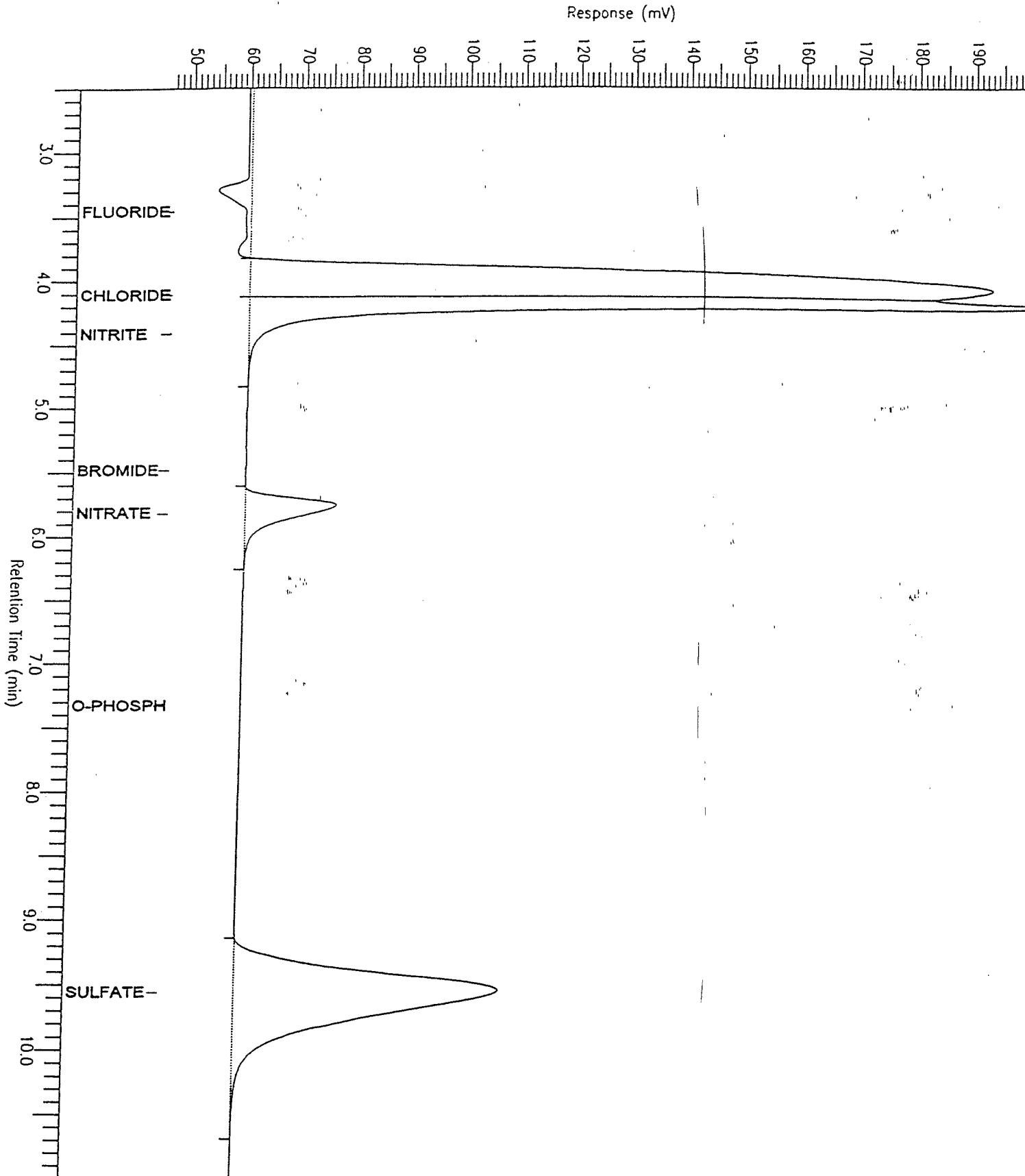
Report stored in ASCII file: C:\TC4\DATA\JUL\0711051.TX0

Standard Anions by IC

Sample Name : 9607226-6
FileName : C:\TC4\DATA\JUL\0711051.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 47 mV

Sample #: 51
Date : 7/11/96 10:06 PM
Time of Injection: 7/11/96 09:56 PM
Low Point : 46.66 mV
Plot Scale: 160.4 mV
High Point : 207.01 mV



002786

Software Version: 4.0<1C29>

Date: 7/11/96 10:17 PM

Sample Name : 9607228*6

Data File : C:\TC4\DATA\JUL\0711052.RAW Date: 7/11/96 10:07 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 52 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.11	937267.00	18.266	25.00	456.662
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.80	67858.50	2.960	25.00	74.011
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.66	414097.50	11.606	25.00	290.139

=====

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711052.TX0

002787

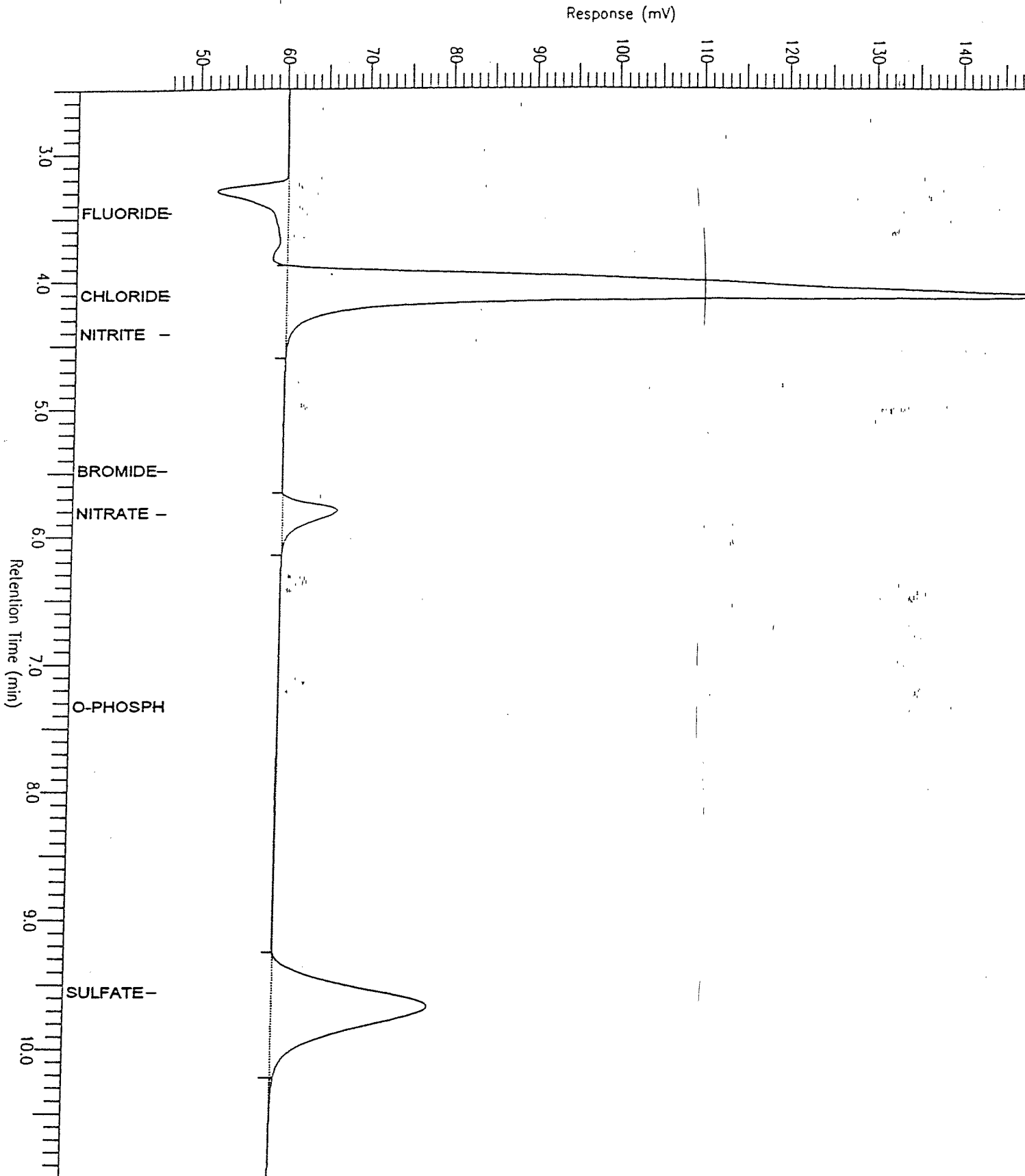
Standard Anions by IC

Sample Name : 9607228*6
FileName : C:\TC4\DATA\JUL\0711052.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 47 mV

Sample #: 52
Date : 7/11/96 10:17 PM
Time of Injection: 7/11/96 10:07 PM
Low Point : 46.64 mV
Plot Scale: 105.9 mV
High Point : 152.78 mV

Page 1 of 1



002788

Software Version: 4.0<1C29>

Date: 7/11/96 10:28 PM

Sample Name : 9607228*7

Data File : C:\TC4\DATA\JUL\0711053.RAW Date: 7/11/96 10:18 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 53 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	42928.50	0.803	1.00	0.803
Chloride	4.06	6804985.50	130.052	1.00	130.052
Nitrite	4.38	770213.00	22.040	1.00	22.040
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.84	20931.50	1.288	1.00	1.288
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.38	2461065.00	64.304	1.00	64.304

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

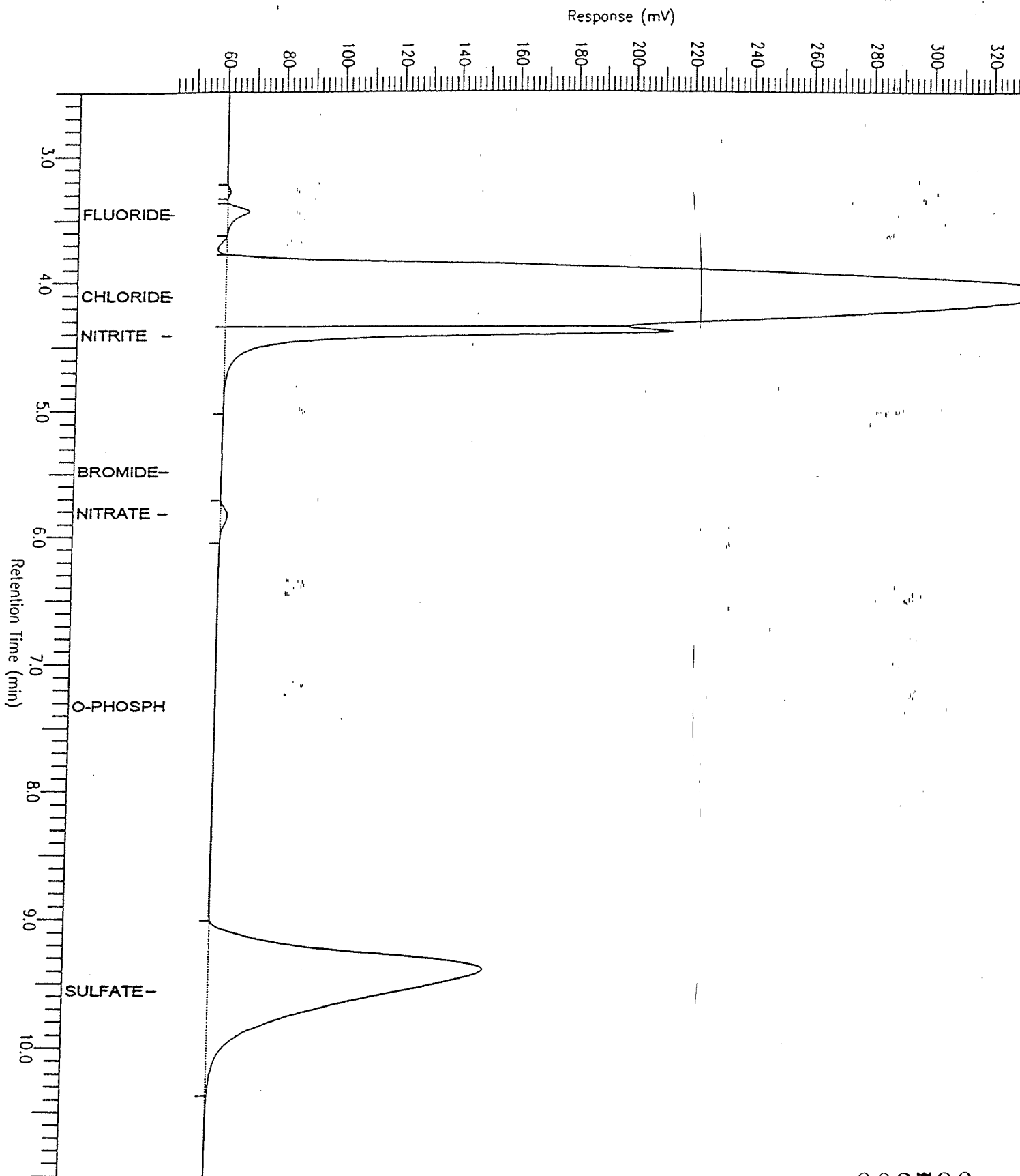
Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711053.TX0

Standard Anions by IC

Sample Name : 9607226*7
FileName : C:\TC4\DATA\JUL\0711053.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0
End Time : 11.00 min
Plot Offset: 43 mV

Sample #: 53
Date : 7/11/96 10:28 PM
Time of Injection: 7/11/96 10:18 PM
Low Point : 43.01 mV
Plot Scale: 301.6 mV
High Point : 344.59 mV



002790

Software Version: 4.0<1C29>
 Date: 7/11/96 10:39 PM
 Sample Name : 9607228*7
 Data File : C:\TC4\DATA\JUL\0711054.RAW Date: 7/11/96 10:29 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 54 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions, by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.10	622694.50	12.273	10.00	122.732
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.71	212022.00	6.403	10.00	64.032

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711054.TX0

Standard Anions by IC

Sample Name : 9607228-7

FileName : C:\TC4\DATA\JUL\0711054.raw

Method : 0711

Start Time : 2.50 min

Scale Factor: 1.0

End Time : 11.00 min

Plot Offset: 48 mV

Sample #: 54

Date : 7/11/96 10:39 PM

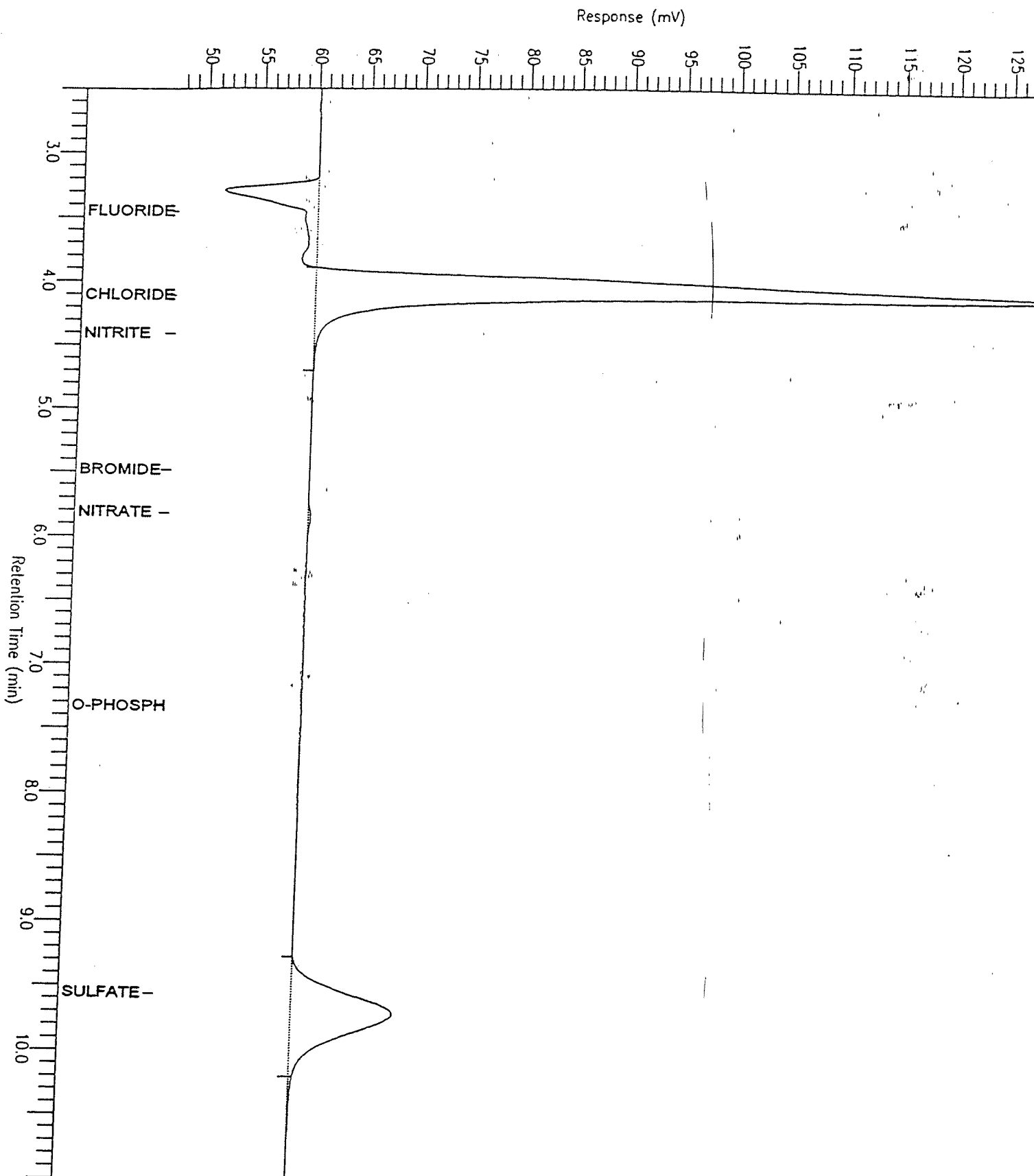
Time of Injection: 7/11/96 10:29 PM

Low Point : 47.51 mV

Plot Scale: 63.5 mV

Page 1 of 1

High Point : 131.04 mV



002792

Software Version: 4.0<1C29>

Date: 7/11/96 10:50 PM

Sample Name : 9607228*7

Data File : C:\TC4\DATA\JUL\0711055.RAW Date: 7/11/96 10:40 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 55 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.05	220045.00	4.602	25.00	115.057
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.75	80943.00	3.029	25.00	75.715

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711055.TX0

Software Version: 4.0<1C29>

Date: 7/11/96 11:01 PM

Sample Name : 9607228*8

Data File : C:\TC4\DATA\JUL\0711056.RAW Date: 7/11/96 10:51 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 56 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.30	184725.00	2.833	1.00	2.833
Chloride	3.97	2.89e+07	550.367	1.00	550.367
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.39	4818.50	0.335	1.00	0.335
Nitrate	5.59	1994177.50	71.619	1.00	71.619
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

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Report stored in ASCII file: C:\TC4\DATA\JUL\0711056.TX0

002794

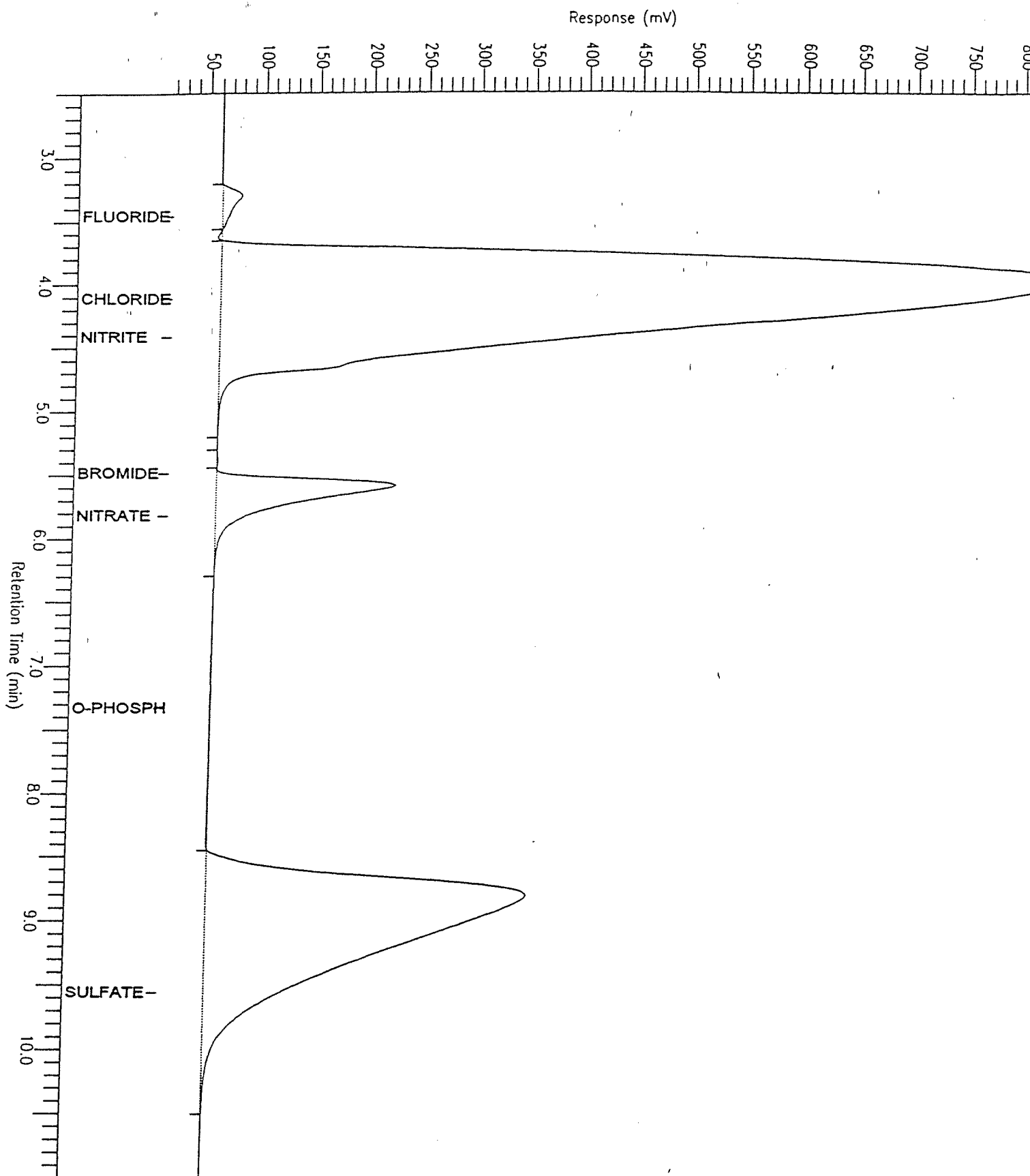
Standard Anions by IC

Sample Name : 9607226*8
FileName : C:\TC4\DATA\JUL\0711056.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 11.00 min
Plot Offset : 18 mV

Sample #: 56
Date : 7/11/96 11:01 PM
Time of Injection: 7/11/96 10:51 PM
Low Point : 18.02 mV
Plot Scale: 621.7 mV
High Point : 839.75 mV

Page 1 of 1



002795

Software Version: 4.0<1C29>

Date: 7/11/96 11:12 PM

Sample Name : 9607228*8

Data File : C:\TC4\DATA\JUL\0711057.RAW Date: 7/11/96 11:02 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 57 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst Batch
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000		0.000
Chloride	4.19	887164.00	17.312	10.00	173.116
Nitrite	4.42	0.00	0.000		0.000
Bromide	5.49	0.00	0.000		0.000
Nitrate	5.77	162872.50	6.347	10.00	63.469
o-Phosphate	7.33	0.00	0.000		0.000
Sulfate	9.55	981280.00	26.207	10.00	262.075

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=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

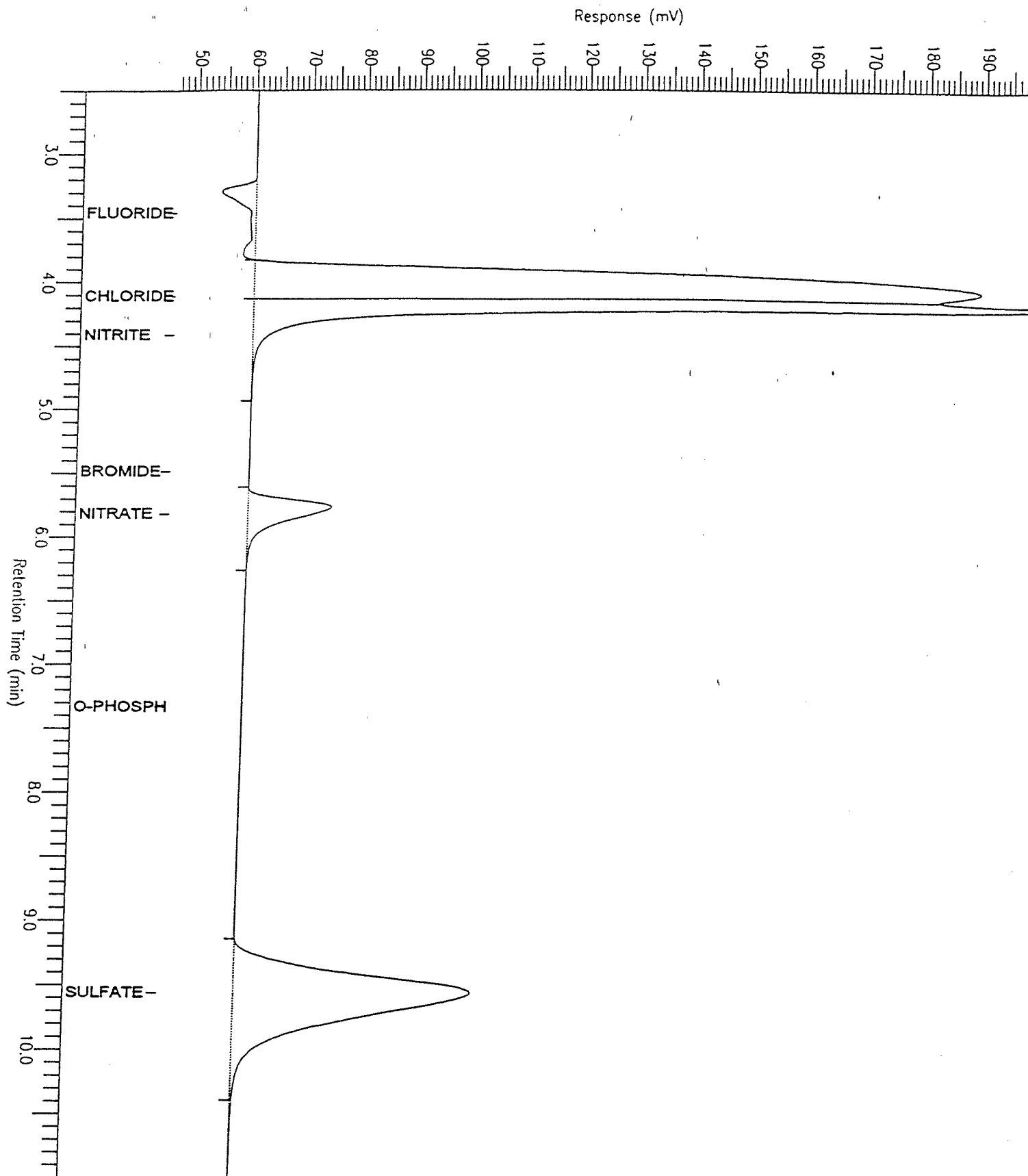
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Report stored in ASCII file: C:\TC4\DATA\JUL\0711057.TX0
=====

Standard Anions by IC

Sample Name : 9607228-8
FileName : C:\TC4\DATA\JUL\0711057.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 11.00 min
Plot Offset : 47 mV

Sample #: 57
Date : 7/11/96 11:12 PM
Time of Injection: 7/11/96 11:02 PM
Low Point : 46.51 mV
Plot Scale: 159.8 mV
Page 1 of 1
High Point : 206.34 mV



002797

Software Version: 4.0<1C29>
 Date: 7/11/96 11:23 PM
 Sample Name : 9607228*8
 Data File : C:\TC4\DATA\JUL\0711058.RAW Date: 7/11/96 11:13 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 58 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

=====
 Version Kyoko Instrument 533-23 Analyst _____ Batch _____
 =====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.11	904843.00	17.648	25.00	441.210
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.81	63484.50	2.805	25.00	70.114
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.67	364649.50	10.333	25.00	258.313

=====
 Reviewed and Approved by _____ Date _____
 =====

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
 =====

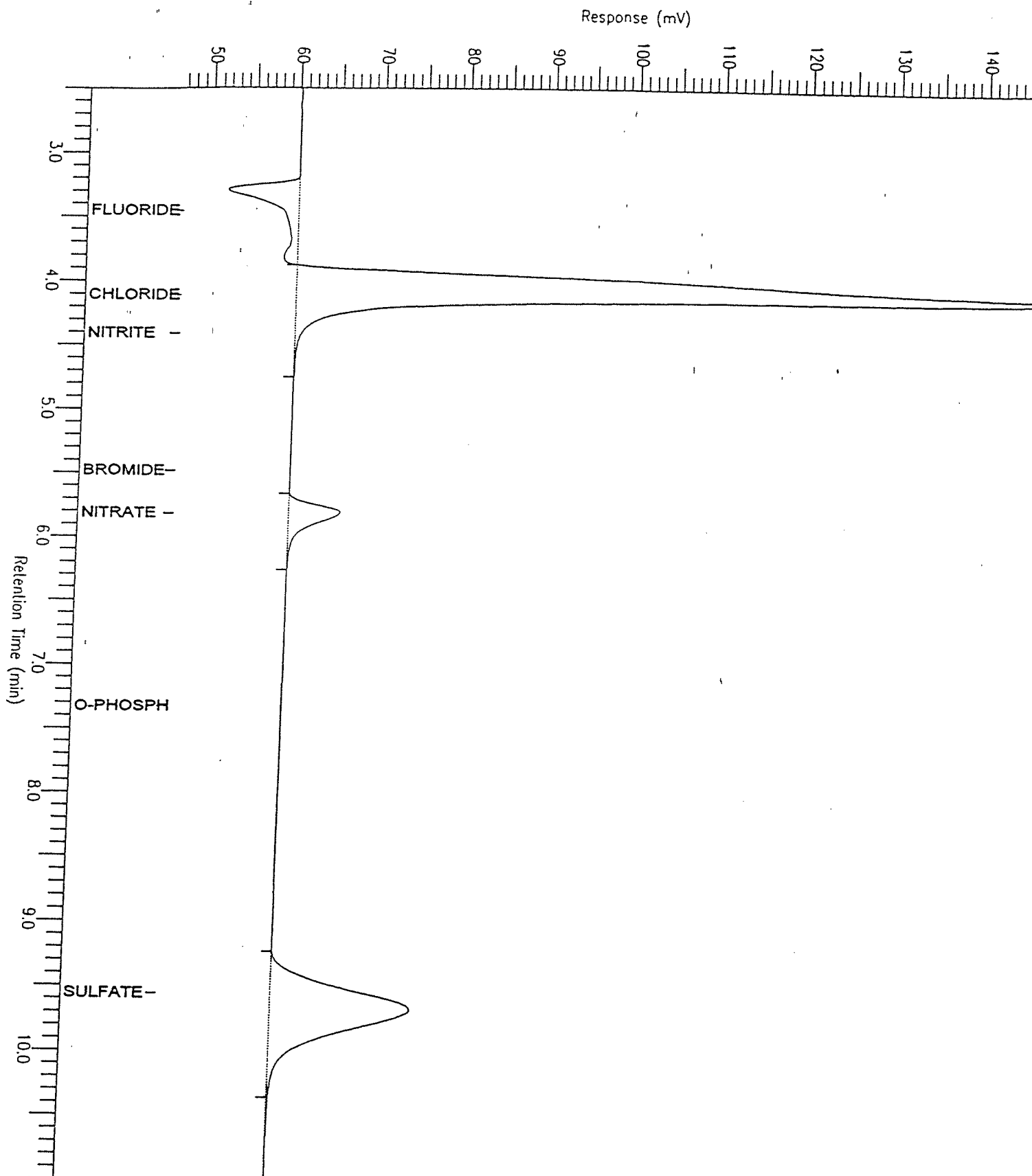
Report stored in ASCII file: C:\TC4\DATA\JUL\0711058.TXT

Standard Anions by IC

Sample Name : 9607228-8
FileName : C:\TC4\DATA\JUL\0711058.raw
Method : 0711
Start Time : 2.50 min
Scale Factor : 1.0

End Time : 11.00 min
Plot Offset : 47 mV

Sample #: 58
Date : 7/11/96 11:23 PM
Time of Injection: 7/11/96 11:13 PM
Low Point : 46.85 mV
Plot Scale: 104.4 mV
Page 1 of 1
High Point : 151.30 mV



Software Version: 4.0<1C29>

Date: 7/11/96 11:34 PM

Sample Name : 9607228*9

Data File : C:\TC4\DATA\JUL\0711059.RAW Date: 7/11/96 11:24 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 59 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.44	28342.50	0.594	1.00	0.594
Chloride	4.06	7021606.00	134.179	1.00	134.179
Nitrite	4.38	795294.00	22.755	1.00	22.755
Bromide	5.41	1010.00	0.137	1.00	0.137
Nitrate	5.83	39258.50	1.941	1.00	1.941
o-Phosphate	7.33	0.00	0.000	1.00	0.000
Sulfate	9.42	1979005.00	51.894	1.00	51.894

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

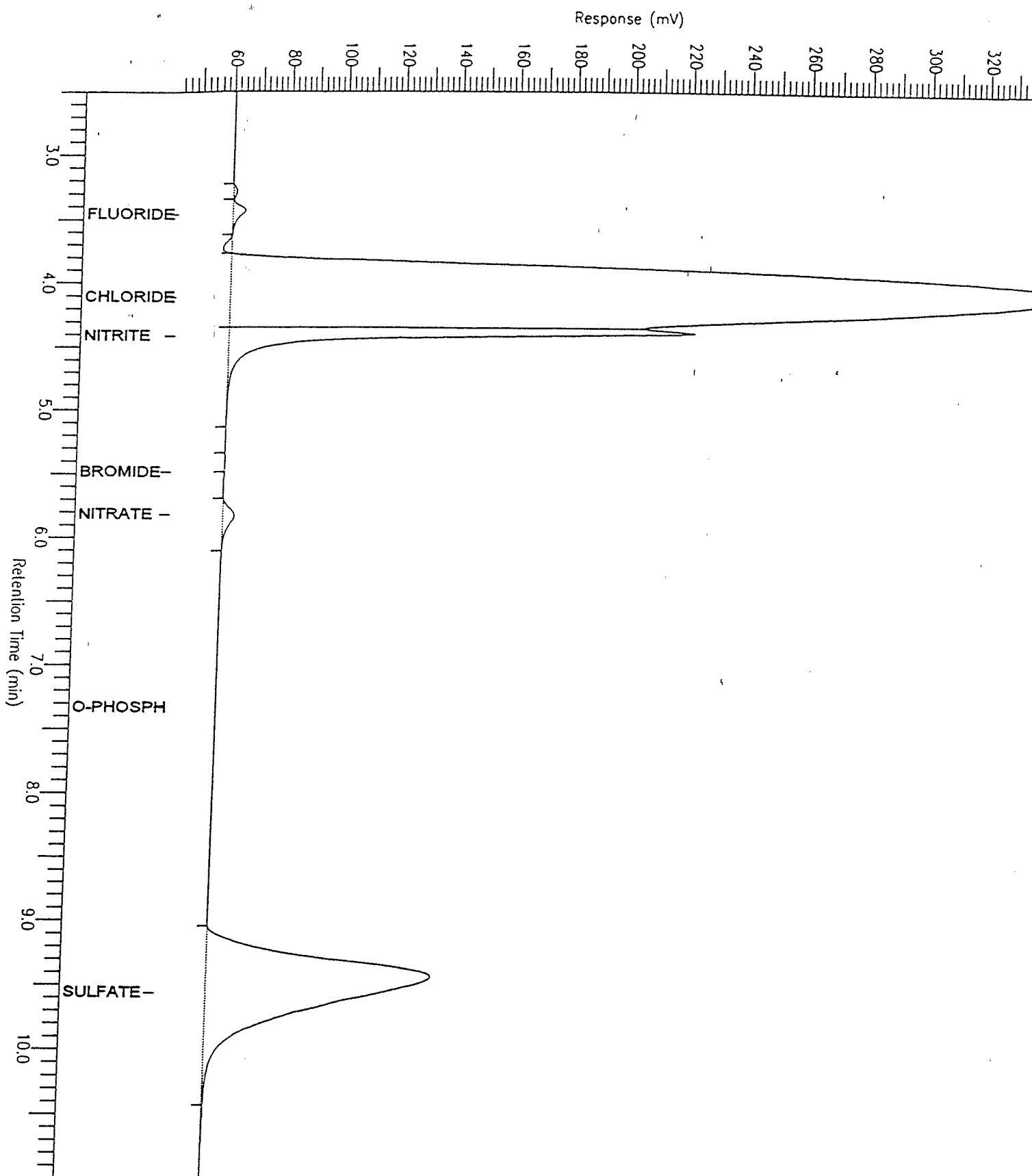
Report stored in ASCII file: C:\TC4\DATA\JUL\0711059.TXD

Standard Anions by IC

Sample Name : 9607228-9
FileName : C:\TC4\DATA\JUL\0711059.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 43 mV

Sample #: 59
Date : 7/11/96 11:34 PM
Time of Injection: 7/11/96 11:24 PM
Low Point : 42.71 mV
Plot Scale: 308.0 mV
Page 1 of 1
High Point : 350.69 mV



002801

Software Version: 4.0<1C29>
 Date: 7/11/96 11:45 PM
 Sample Name : 9607228*9
 Data File : C:\TC4\DATA\JUL\0711060.RAW Date: 7/11/96 11:35 PM
 Sequence File: C:\TC4\0711.SEQ Cycle: 60 Channel : A
 Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ
 Sample Amount : 1.0000 Dilution Factor : 10.00

Standard anions by IC

Version Kyoko Instrument 533-23 Analyst Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000		0.000
Chloride	4.10	646146.50	12.720	10.00	127.200
Nitrite	4.42	0.00	0.000		0.000
Bromide	5.49	0.00	0.000		0.000
Nitrate	5.86	7444.50	0.807	10.00	8.072
o-Phosphate	7.33	0.00	0.000		0.000
Sulfate	9.71	174514.50	5.438	10.00	54.376

Reviewed and Approved by Date

Working Elluent: GE9606011
 LCS: GE9606018 STD CURVE: GE9606017
 Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0711060.TX0

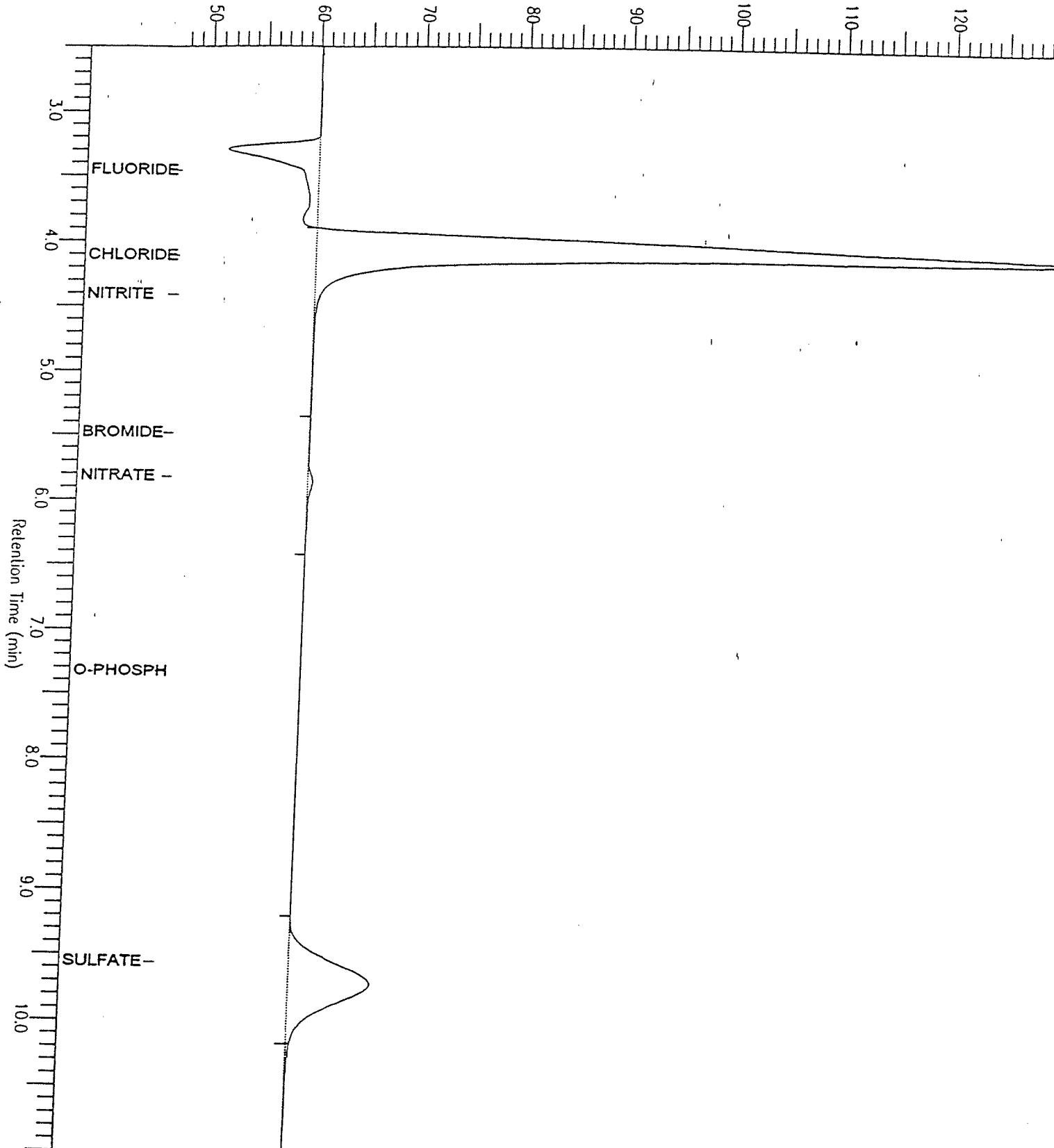
Standard Anions by IC

Sample Name : 9607228*9
FileName : C:\TC4\DATA\JUL\0711060.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 47 mV

Sample #: 60
Date : 7/11/96 11:45 PM
Time of Injection: 7/11/96 11:35 PM
Low Point : 47.45 mV
Plot Scale: 65.8 mV
Page 1 of 1
High Point : 133.23 mV

Response (mV)



002803

Software Version: 4.0<1C29>

Date: 7/11/96 11:56 PM

Sample Name : CCV

Data File : C:\TC4\DATA\JUL\0711061.RAW Date: 7/11/96 11:46 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 61 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====

Version Kyoko	Instrument 533-23	Analyst	Batch
---------------	-------------------	---------	-------

=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	323052.00	4.815	1.00	4.815
Chloride	4.07	930953.50	18.146	1.00	18.146
Nitrite	4.36	156945.50	4.550	1.00	4.550
Bromide	5.36	177087.50	9.285	1.00	9.285
Nitrate	5.69	635227.50	23.183	1.00	23.183
o-Phosphate	7.27	110856.50	11.836	1.00	11.836
Sulfate	9.43	1778989.50	46.744	1.00	46.744

=====

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Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

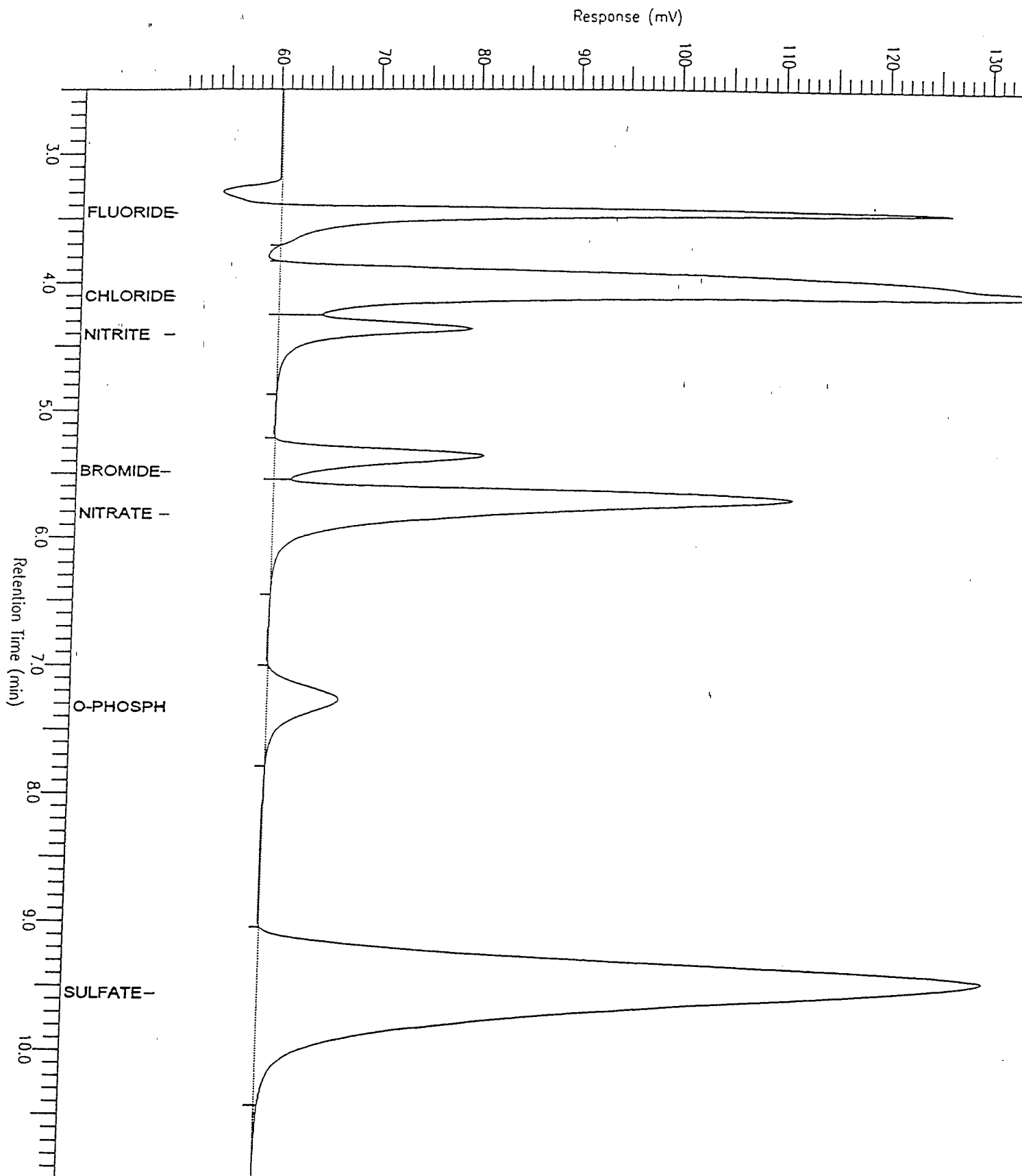
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711061.TX0

Standard Anions by IC

Sample Name : CCV
FileName : G:\TC4\DATA\JUL\0711061.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 41.0
End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 61
Date : 7/11/96 11:56 PM
Time of Injection: 7/11/96 11:46 PM
Low Point : 50.12 mV
Plot Scale: 88.4 mV
Page 1 of 1
High Point : 138.52 mV



002805

Software Version: 4.0<1C29>

Date: 7/12/96 12:07 AM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0711062.RAW Date: 7/11/96 11:57 PM

Sequence File: C:\TC4\0711.SEQ Cycle: 62 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.12	0.00	0.000	-----	0.000
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711062.TX0

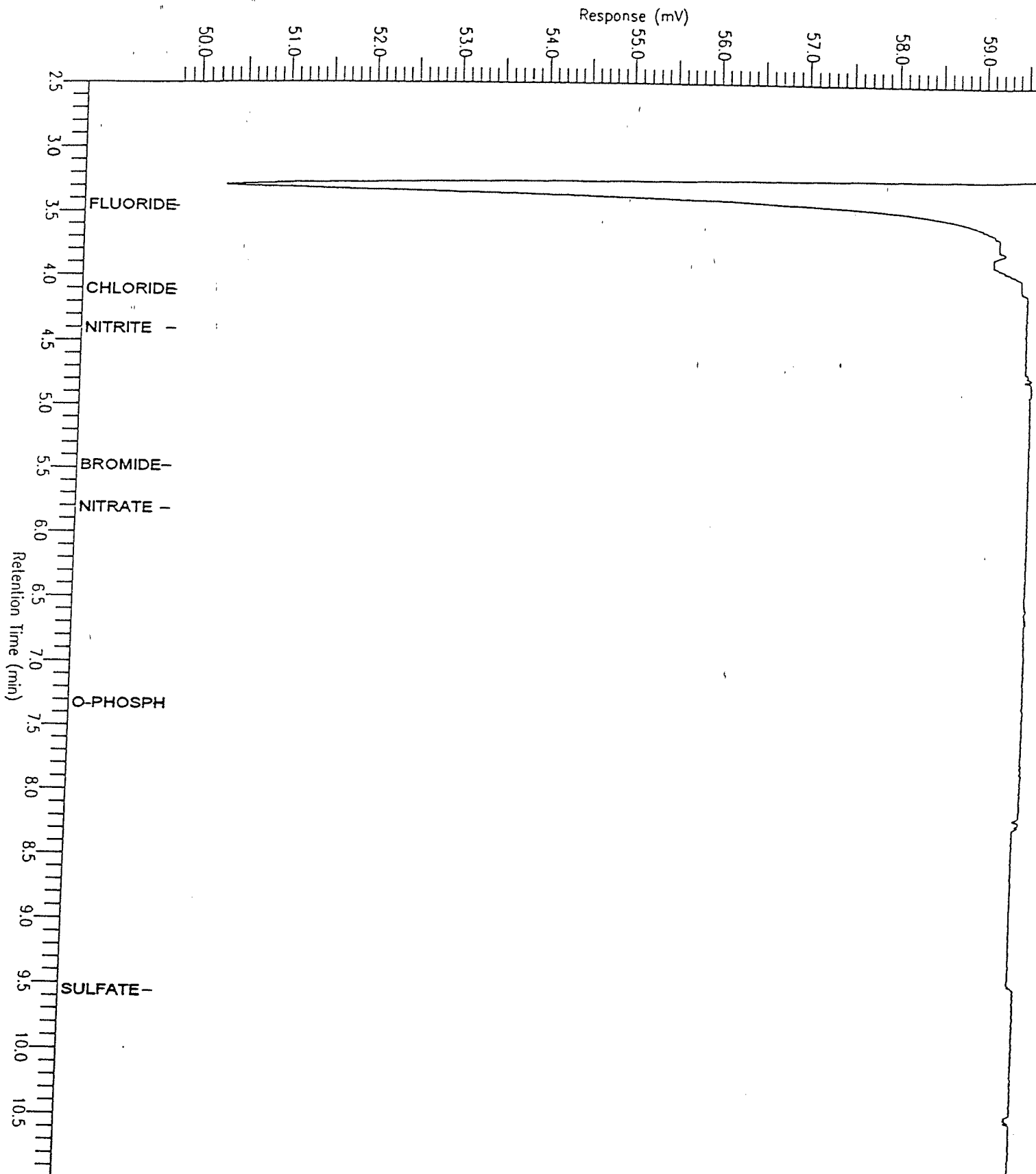
002806

Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0711062.raw
Method : 0711
Start Time : 2.60 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 62
Date : 7/12/96 12:07 AM
Time of Injection: 7/11/96 11:57 PM
Low Point : 49.79 mV
Plot Scale: 10.3 mV
Page 1 of 1
High Point : 60.11 mV



002807

Software Version: 4.0<1C29>

Date: 7/12/96 12:18 AM

Sample Name : 9607228*9

Data File : C:\TC4\DATA\JUL\0711063.RAW Date: 7/12/96 12:08 AM

Sequence File: C:\TC4\0711.SEQ Cycle: 63 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 25.00

Standard anions by IC

Version Kyoko Instrument 533-23

Analyst

Batch

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000		0.000
Chloride	4.06	231060.00	4.812	25.00	120.303
Nitrite	4.42	0.00	0.000		0.000
Bromide	5.49	0.00	0.000		0.000
Nitrate	5.88	1377.00	0.591	25.00	14.773
o-Phosphate	7.33	0.00	0.000		0.000
Sulfate	9.73	66488.50	2.656	25.00	66.412

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

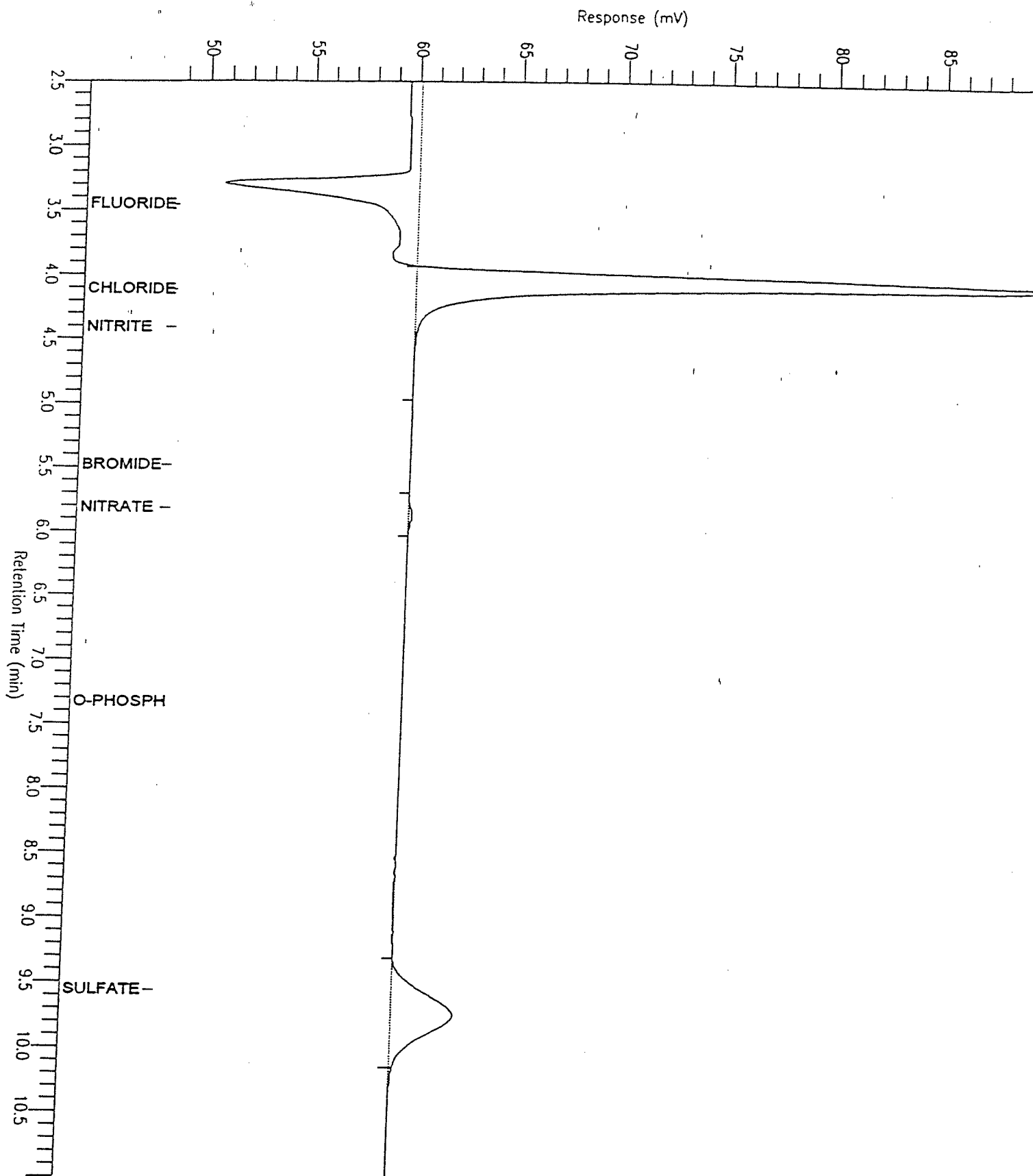
Report stored in ASCII file: C:\TC4\DATA\JUL\0711063.TX0

Standard Anions by IC

Sample Name : 9607228-9
FileName : C:\TC4\DATA\JUL\0711063.raw
Method : Q711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 49 mV

Sample #: 63
Date : 7/12/96 12:18 AM
Time of Injection: 7/12/96 12:08 AM
Low Point : 48.73 mV
Plot Scale: 42.7 mV
Page 1 of 1
High Point : 91.42 mV



002809

Software Version: 4.0<1C29>

Date: 7/12/96 12:40 AM

Sample Name : CCB

Data File : C:\TC4\DATA\JUL\0711065.RAW Date: 7/12/96 12:30 AM

Sequence File: C:\TC4\0711.SEQ Cycle: 65 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version Kyoko		Instrument 533-23		Analyst		Batch	
Component	Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported	Conc
Fluoride		3.46	0.00	0.000	-----	0.000	
Chloride		4.12	0.00	0.000	-----	0.000	
Nitrite		4.42	0.00	0.000	-----	0.000	
Bromide		5.49	0.00	0.000	-----	0.000	
Nitrate		5.82	0.00	0.000	-----	0.000	
o-Phosphate		7.33	0.00	0.000	-----	0.000	
Sulfate		9.56	0.00	0.000	-----	0.000	

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

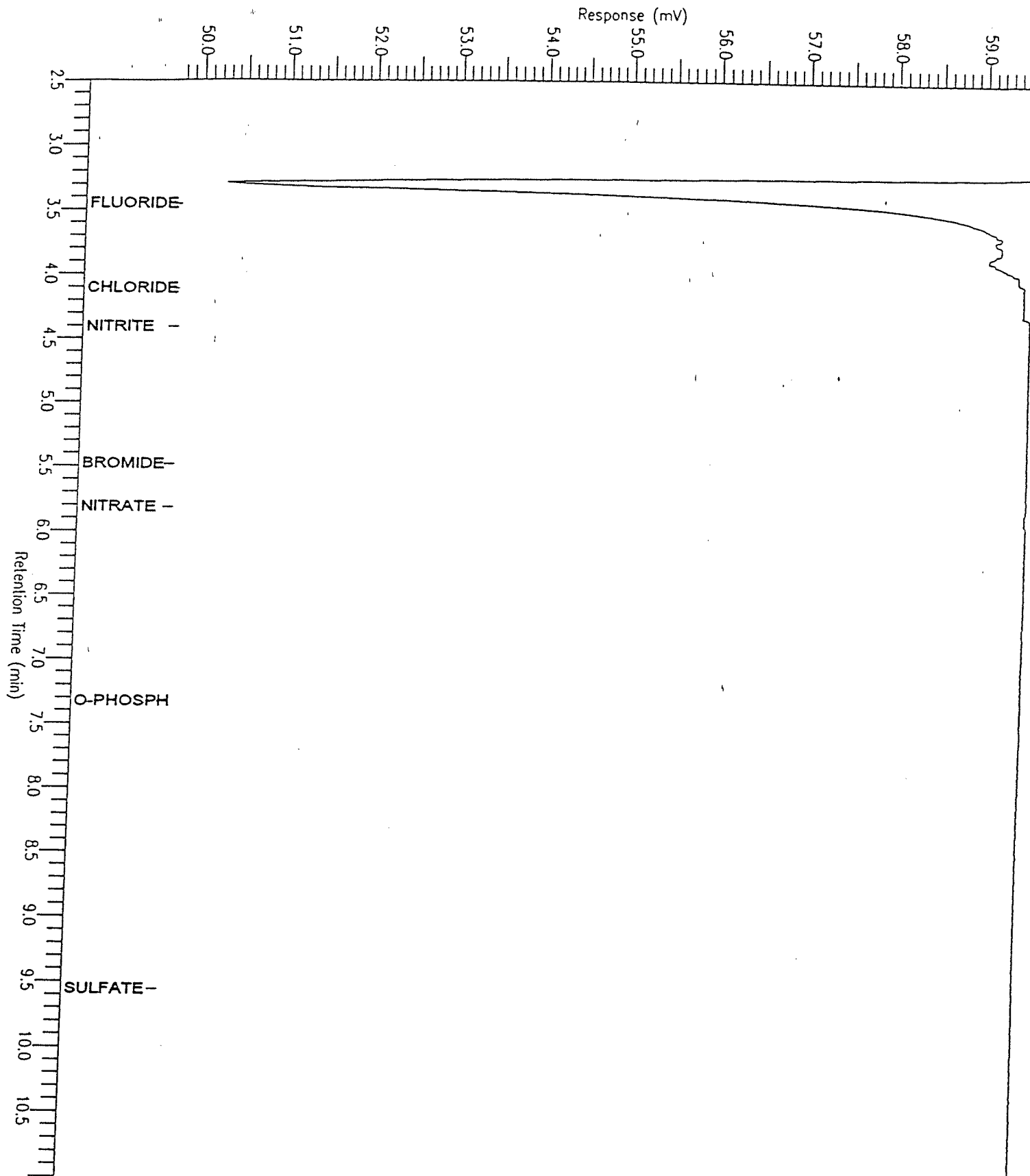
Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0711065.TX0

Standard Anions by IC

Sample Name : CCB
FileName : C:\TC4\DATA\JUL\0711065.raw
Method : 0711
Start Time : 2:50 min
Scale Factor: 11.0
End Time : 11:00 min
Plot Offset: 50 mV

Sample #: 65
Date : 7/12/96 12:40 AM
Time of Injection: 7/12/96 12:30 AM
Low Point : 49.79 mV
Plot Scale: 10.3 mV
High Point : 60.08 mV



002811

Software Version: 4.0<1C29>

Date: 7/12/96 12:51 AM

Sample Name : LCS = GE9607026 Verification

Data File : C:\TC4\DATA\JUL\0711066.RAW Date: 7/12/96 12:41 AM

Sequence File: C:\TC4\0711.SEQ Cycle: 66 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.45	326143.50	4.859	1.00	4.859
Chloride	4.08	969767.50	18.885	1.00	18.885
Nitrite	4.36	159258.50	4.616	1.00	4.616
Bromide	5.37	162403.00	9.561	1.00	9.561
Nitrate	5.69	645118.50	23.535	1.00	23.535
o-Phosphate	7.26	116104.50	12.388	1.00	12.388
Sulfate	9.42	1800258.50	47.292	1.00	47.292

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml
=====

Report stored in ASCII file: C:\TC4\DATA\JUL\0711066.TX0

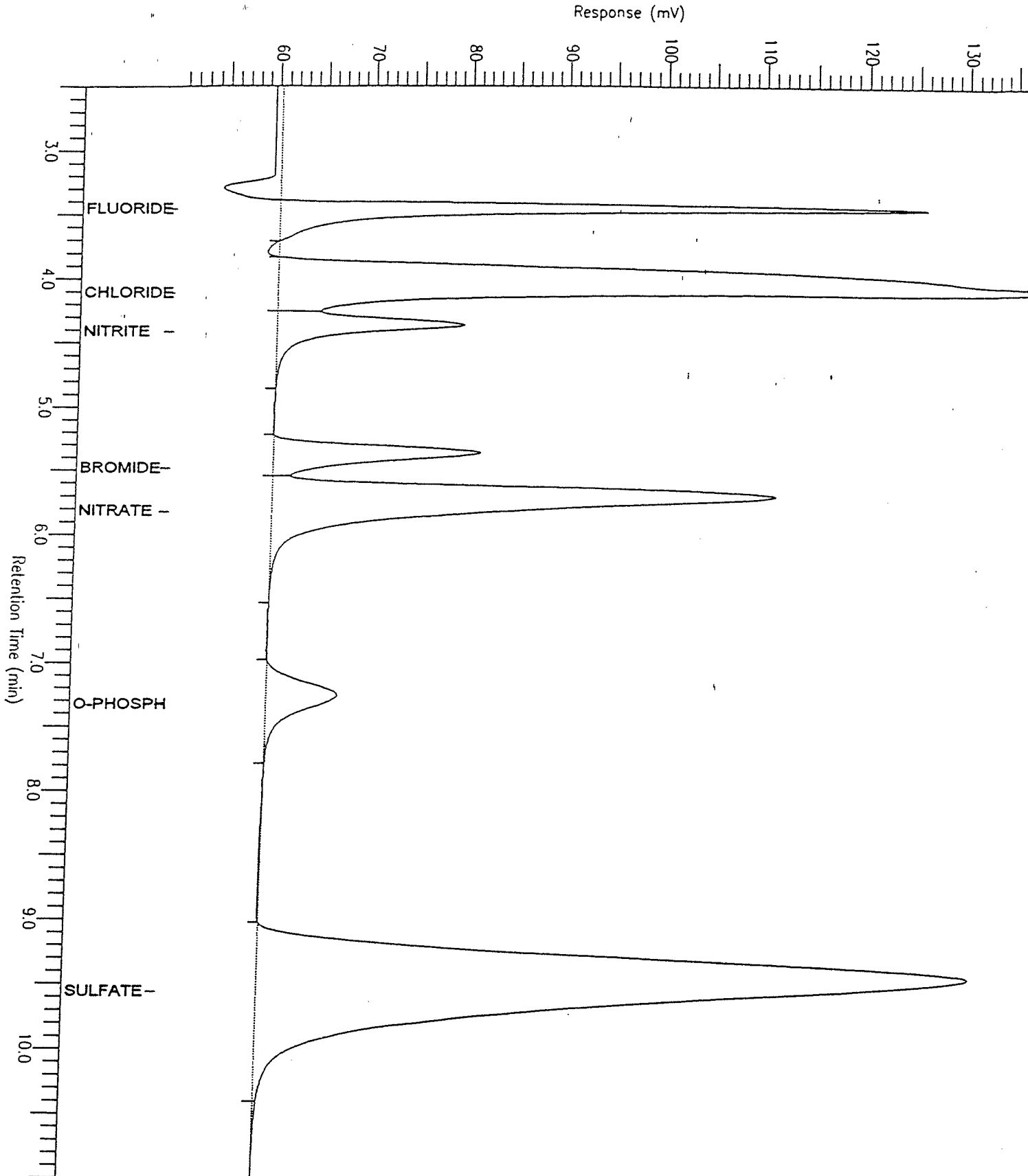
002812

Standard Anions by IC

Sample Name :
FileName : C:\TC4\DATA\JUL\0711066.raw
Method : 0711
Start Time : 2:50 min
Scale Factor: 1.0

Sample #: 66
Date : 7/12/96 12:51 AM
Time of Injection: 7/12/96 12:41 AM
Low Point : 50.04 mV
Plot Scale: 91.4 mV

Page 1 of 1



002813

Software Version: 4.0<1C29>

Date: 7/12/96 01:02 AM

Sample Name : WASH - BLANK

Data File : C:\TC4\DATA\JUL\0711067.RAW Date: 7/12/96 12:52 AM

Sequence File: C:\TC4\0711.SEQ Cycle: 67 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

=====
Version Kyoko Instrument 533-23 Analyst _____ Batch _____
=====

Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	0.00	0.000	-----	0.000
Chloride	4.12	0.00	0.000	-----	0.000
Nitrite	4.42	0.00	0.000	-----	0.000
Bromide	5.49	0.00	0.000	-----	0.000
Nitrate	5.82	0.00	0.000	-----	0.000
o-Phosphate	7.33	0.00	0.000	-----	0.000
Sulfate	9.56	0.00	0.000	-----	0.000

=====

=====
Reviewed and Approved by _____ Date _____
=====

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

=====
Report stored in ASCII file: C:\TC4\DATA\JUL\0711067.TX0
=====

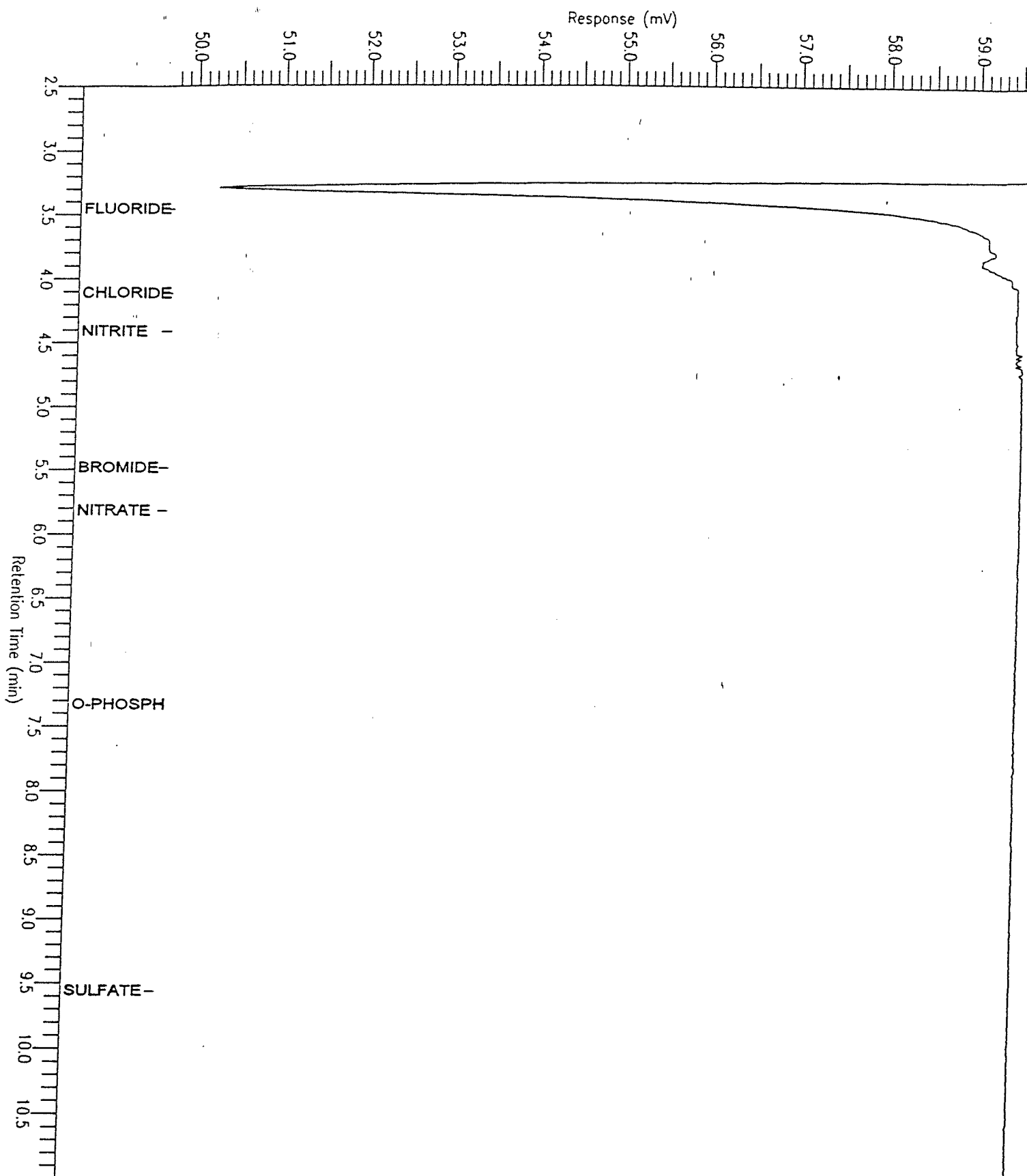
002814

Standard Anions by IC

Sample Name :
FileName : C:\TC4\DATA\JUL\0711067.raw
Method : 0711
Start Time : 2.50 min
Scale Factor: 1.0

End Time : 11.00 min
Plot Offset: 50 mV

Sample #: 67
Date : 7/12/96 01:02 AM
Time of Injection: 7/12/96 12:52 AM
Low Point : 49.75 mV
Plot Scale: 10.3 mV
Page 1 of 1
High Point : 60.07 mV



002815

Software Version: 4.0<1C29>

Date: 7/12/96 12:29 AM

Sample Name : CCV

Data File : C:\TC4\DATA\JUL\0711064.RAW Date: 7/12/96 12:19 AM

Sequence File: C:\TC4\0711.SEQ Cycle: 64 Channel : A

Instrument : DIONEX Rack/Vial: 0/0 Operator: AHQ

Sample Amount : 1.0000 Dilution Factor : 1.00

Standard anions by IC

Version	Kyoko	Instrument	533-23	Analyst	Batch
Component Name	Ret Time	Peak Area	Raw Amount	Dil Factor	Reported Conc
Fluoride	3.46	322719.50	4.810	1.00	4.810 96%
Chloride	4.07	925197.50	18.036	1.00	18.036 96%
Nitrite	4.36	157501.00	4.566	1.00	4.566 96%
Bromide	5.36	176002.00	9.229	1.00	9.229 96%
Nitrate	5.69	632644.00	23.091	1.00	23.091 96%
o-Phosphate	7.27	110850.00	11.836	1.00	11.836 96%
Sulfate	9.42	1776333.00	46.676	1.00	46.676 96%

Reviewed and Approved by _____ Date _____

Working Elluent: GE9606011

LCS: GE9606018 STD CURVE: GE9606017

Spike: 200ul GE9605010/5ml BHP Spike: 100ul GE9603010/5ml

Report stored in ASCII file: C:\TC4\DATA\JUL\0711064.TX0

	(BHP)
<u>0711</u>	<u>0711.1</u>
Cl (07-1543-1)	Br (07-1557-1)
NO ₃ (07-1545-1)	Cl (07-1560-1)
SO ₄ (07-1549-1)	NO ₂ (07-1562-1)
	NO ₃ (07-1564-1)
	SO ₄ (07-1566-1)

002816

Standard Anions by IC

Sample Name : CCV

FileName : C:\TC4\DATA\JUL\0711064.raw

Method : 0711

Start Time : 2:50 min

Scale Factor: 1.0

End Time : 11:00 min

Plot Offset: 50 mV

Sample #: 64

Date : 7/12/96 12:29 AM

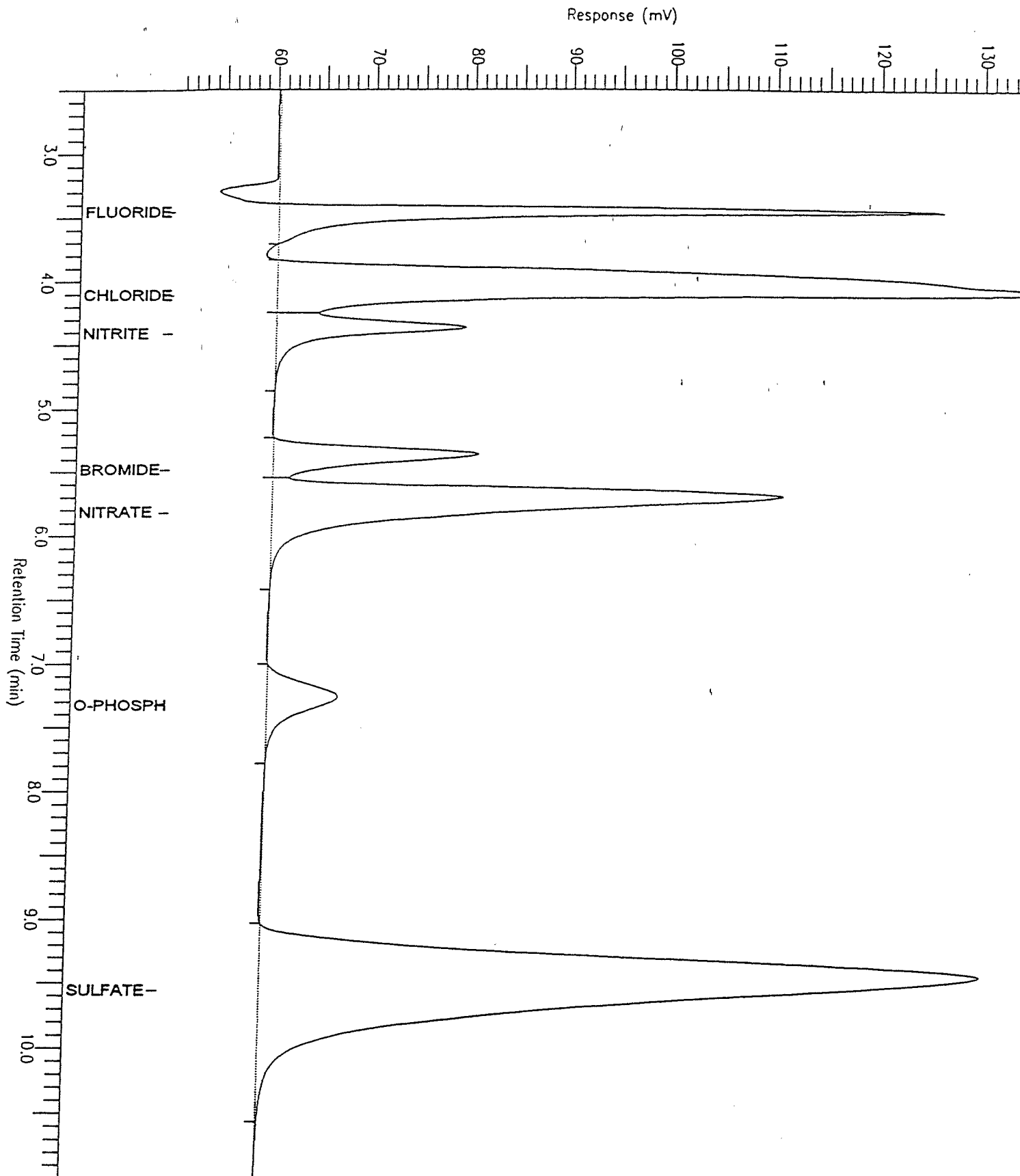
Time of Injection: 7/12/96 12:19 AM

Low Point : 50.08 mV

Plot Scale: 88.9 mV

Page 1 of 1

High Point : 138.96 mV



002817

Project No. _____

Book No. _____

TITLE

Turbidity 1801

533-24

22

From Page No. _____	Client	JZV 7/05/96	JX ID	DIT	Turbid	Turb rptd.	Batch 128
3CA #							QC
MIBL			(07-37.2-1)		0	0	
LCS 8.1			(07-722-1)		8.1	8.1	
LCS 28.1			(07-723-1)		8.1	8.1	
96-07-126-1A1	SBPP		Eff		0.3	0.3	REVIEWED & APPROVED
-1R2					0.3	0.3	BY: AHQ DATE 07/09/96
							KLCS 7/8/96 Batch # 129
MR			(07-491-1)		0	0	
LCS 8.1			(07-951-1)		8.1	8.1	
LCS 8.1			(07-952-1)		8.1	8.1	REVIEWED & APPROVED
96-07-141-1K1	ACMC		Effluent	1	19.5	20	BY: AHQ DATE 07/09/96
-1K2				1	19.4	19	
							Batch # 129 130
MIB			(07-645-1)		0	0	
LCS 8.1			(07-1212-1)		8.1	8.1	
LCS 8.1			(07-1213-1)		8.1	8.1	
96 7-164-1	BHP-Flamco		M12-GU	1	0	<0.2	
-2			M13-GU		0.1	0.1	
-3			M19.0		0.1	0.1	REVIEWED & APPROVED
-4			M14-0		10.3	10	BY: AHQ DATE 07/09/96
-5			M16-GU		2.3	2.3	
-6R1			M18-0		0.7	0.7	
-6R2			M18-0 HAS/RSR		0.7	0.7	
							Batch # 131
MIB			(07-640-1)		0	0	
LCS 8.1			(07-1273-1)		8.2	8.2	
LCS 8.1			(07-1274-1)		8.2	8.2	
96-07-190-1	Alvick Signal		GW-6	1	7.9	7.9	
191-1R1					6.5	6.5	
R2			GW-1		6.5	6.5	REVIEWED & APPROVED
-2			GW-2		3.9	3.9	BY: AHQ DATE 07/11/96
-3			GW-3		21.3	21	
-4			GW-9		2.5	2.5	
196-07-205-1			GW-7		1.7	1.7	
-2			GW-8		24.2	24	

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

002818

711

 TITLE Tw 6 180.1 S33-24 SGA GEO 14376 Project No. _____
 Book No. _____

From Page No. _____

PCA #	Client	SX ID	DIL	Test No. 1	Test No. 2	QC
1-96-07-215-3	Alid Signal	GW-10	1x	0.9	0.9	Batch #131 Co.
1-96-07-216-1	↓	GW-5	↓	12.7	13	
				R2.2	7/11/96	Batch #132
MB		(07-778-1)		0	0	
LCS 8.1		(07-1447-1)		8.1	8.1	
LCS 8.1	4-7/11/96	(07-1448-1)		8.1	8.1	
(1) 96-07-223-1	46-Allied	GW-4	1	26.1	27	
	↓	↓	1	25.5	26	
(2) 96-07-218-2	—	EJH	1	8.2	8.2	
(3) 96-07-228-1	HAGMA	M5-S	1	32.4	32	
(3) ↓ -1R2		↓	1	31.5	32	
(3) ↓ -2		M7-EL	1	1.9	1.9	
(3) ↓ -3		M19-S	1	26.3	26	
(3) ↓ -4		M33-UBF	1	5.6	5.6	
(3) ↓ -5		M32-UBF	1	9.8	9.8	
(3) ↓ -6		M19.1	1	13.1	13	
(3) ↓ -7		M20-0	1	0.3	0.3	REVIEWED & APPROVED
(3) ↓ -8		M21-UBF	1	2.1	2.1	BY <u>AHR</u> DATE 07/16
(3) ↓ -9		M19-UBF	1	20.6	21	
					R2.5 7/12/96	Batch #1
MB		(07-968-1)		0	0	
LCS 8.1		(07-1772-1)		8.1	8.1	
LCS 8.1		(07-1773-1)		8.1	8.1	
(1) 96-07-264-1	HAGMA	M30-0	1	1.6	1.6	
(1) ↓ -2		M31-LBF	1	9.2	9.2	
(1) ↓ -3		M19-2	1	1.3	1.3	
(1) ↓ -4		M25-UBF	1	5.1	5.1	
(1A) ↓ -5R1		M24-0	1	0.2	0.2	
(1A) ↓ -5R2		↓	1	0.2	0.2	
(1) ↓ -6		M16-EU	1	0.9	0.9	
(1) ↓ -7R1		M17-EL	1	3.0	3.0	REVIEWED & APPROVED
(1) ↓ -7R2		↓	1	3.0	3.0	BY <u>AHR</u> DATE 07/16/96

To Page No. _____

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

002819

Project No. _____

Book No. _____

TITLE _____

IG0.1 SOP GE100:82G

From Page No. _____

7/9/96 ML

LAB #	CLIENT	SX ID	VOL	DIL	#	#1 FINAL WT.	#2 FINAL WT
MB		(07-682-1)	100	1	NEVE	78.7135	78.7136
LCS	10ml of 10,000ppm	(07-1262-1)	↓	↓	E21	82.2313	82.2310
LCS	GE9603032	(07-1263-1)	↓	↓	XO	82.4633	82.4630
3 96-07-164-1	BHP-Florence	M2-GU	50	2	OKR	84.1955	84.1955
-2		M3-GU	100	1	P	87.77-8830	77.8828
-3		M19.0	50	2	KT	83.8415	83.8413
-4		M14-D	100	1	ABR	85.8851	85.8850
-5		M16-GU	100	1	10	88.8985	88.8981
3A -6R		M18-D	↓	↓	M1	84.9482	84.9480
3B -6S1		M18-MS/mso	↓	↓	G8	86.6497	86.6495
3B -6S2	10ml of 10,000ppm	M18-MS/mso	↓	↓	OK25	85.7986	85.7985
96-07-126-1 ML							

7/10/96 ML

MB		(07-945-1)	100		G5	85.3214	85.3210
LCS	10ml of 10,000ppm	(07-1728-1)	↓		PK	84.4807	84.4804
LCS	GE9603032	(07-1729-1)	↓		L1	86.3130	86.3129
1 96-07-190-1	Alred Signal	GW-6	100		BA	82.3927	82.3931
1 96-07-191-1		GW-1	↓		LUFY	86.3713	86.3712
-S1	10ml of 10,000ppm	↓			AS	83.2908	83.2910
-S2	LG9603033	↓			AC	84.2812	84.2809
-2		GW-2			OKV	82.3208	82.3207
-3		GW-3			T	82.3053	82.3054
-4		GW-9			OK29	84.1317	84.1319
3 96-07-207-1	Brown & Calbert	GW-05 (M)	↓		PL	83.7778	83.7777

MB			100				
LCS			↓				
LCS							
96-07-186-1	Cancelled ML						
96-07-186-2							
96-07-186-2							
96-07-215-1							
-S1							
-S2							
-3							

To Page No. _____

Witnessed & Understood by me, _____

Date _____

Invented by _____

Date _____

Recorded by _____

002820

TITLE _____

Project No. _____

Book No. _____

Form Page No. _____

INITIAL WT.	mg (calc)	mg/L (calc)	Conductance
78.7138	ND	ND	
82.1289	1024	1020	
82.3613	1020	1020	
84.1529	858	860	1120
77.8110	720	720	920
83.8000	830	830	1115
85.8401	450	450	595
88.8610	375	380	583
84.9117	365	370	530
86.5130	1367	1370	
85.6620	1366	1370	↓

Batch # 68

TV = 1000 102%

↓ 102%

T = 1370

REVIEWED & APPROVED

BY AHR DATE 03/10/96

TV = 1000 1370 - 370 / 1000 = 100

↓ 1370 - 370 / 1000 = 100

85.3211	ND	ND = 3	
84.3778	1029	1030	
86.2104	1026	1030	
82.3592	335	340	467
80.3357	356	360	463
83.1547	1361	1360	↓
84.1428	1384	1380	↓
82.2686	522	520	695
82.2819	234	230	314
84.0814	503	500	652
83.7463	315	320	321

Batch 69

TV = 1000 103%

↓ 103%

TV = 1000 1360 - 360 / 1000 = 100%

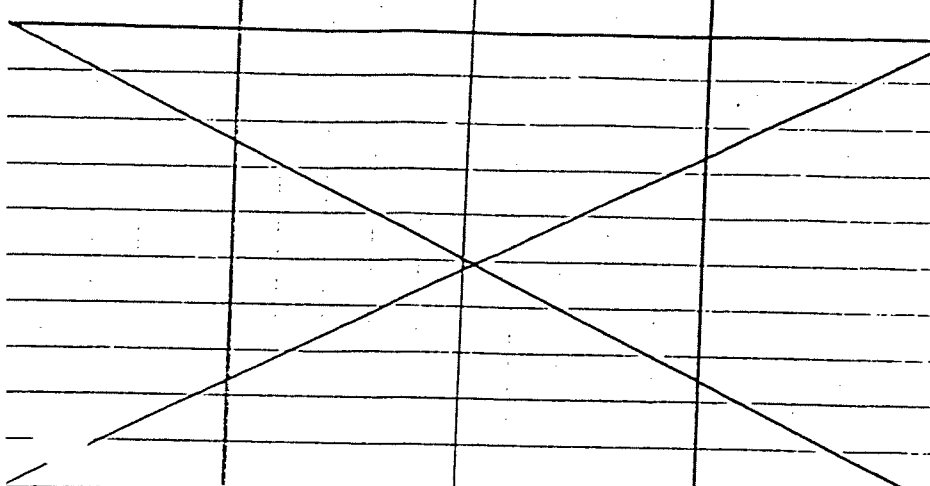
↓ 1380 - 360 / 1000 = 102%

REVIEWED & APPROVED

BY AHR DATE 7/11/96

Cancelled ML

Batch # 70 ML 7/11/96



To Page No. _____

Witnessed & Understood by me, _____

Date _____

Invented by _____

Date _____

Recorded by _____

002821

From Page No. _____

#	Lab #	SX ID Client	SX ID	Vol	D/L	#	#1 Final wt	#2 Final wt
1	96-07-216-1	Seacor SLO	GW-5	100	1	IF	86.3450	86.3451
1	96-07-223-1	allied signal	GW-4			AS	82.3912	82.3910
4	96-07-186-21	Inter. Brands	Permit #1111			16	80.6916	80.6915
1	96-07-215-1	Seacor SLO	GW-7			G2	88.0065	88.0062
	-S1	10ml of 10,000ppm				J	77.4225	77.4221
	-S2	GE960702521				KEI	78.3720	78.3715
	-2	Seacor SLO				S2	85.2369	85.2374
	-3					SS1	83.0900	83.0896
	MB		(07-1120-1)	100	1	S4	84.9168	84.9170
	LCS	10ml of 10,000ppm	(07-2053-1)			S5	81.7125	81.7129
	LCS	GE960702521	(07-2054-1)			00	83.5841	83.5845
	96-07-216-1		GW-5	100	1	01	85.3180	85.3181
#	Lab #	Client	SX ID	Vol	D/L	#	#1 Serial wt	#2 Serial wt
	MB		(7-1125-1)	100	1	DKB	84.9055	84.9053
	LCS	10ml of 10,000ppm	(7-2263-1)			RKS	84.8905	84.8902
	LCS	GE9607027	(7-2269-1)			04	81.3078	81.3077
3	96-07-228-1	P.R. Magiera	M5-S	100		RS	86.1719	86.1719
	-2		M7-G1			GL	85.7451	85.7449
	-S1	10ml of 10,000ppm				XO	82.1340	82.1343
	-S2	GE9607026				-10	80.2335	80.2334
	-3	P.R. Magiera	M9-S	50	2	3	83.3144	83.3140
	-4		M23-UBF	50		03	82.5437	82.5441
	-5		M32-UBF	50		UR	83.3433	83.3438
	-6		M19-1	50		401-1	81.3699	81.3699
	-7		M20-0	100	1	HR	85.3700	85.3707
	-8		M21-UBF	50	2	G13	83.9750	83.9753
	-9		M19-LEF	100	1	X	78.9831	78.9832
2	96-07-254-1	Lockhead	TTU-Implant	100		GR	82.7195	82.7191
2	-2		TTU-Implant	100		V	80.2794	80.2791
3	96-07-218-2	Brown Pearl	-	10	10	OK2	84.0983	84.0985
2	96-07-250-1	-	-	100	1	04	76.4529	76.4526
3	96-07-209-1	Brown + Caldwell	JRF-05 (KA)	100		PA	82.9561	82.9560
	-S1					OKR1	83.5054	83.5054
	-S2					D	82.0917	82.0914

To Page No. _____

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

002822

TITLE _____

Project No. _____

Book No. _____

n Page No. _____

Initial wt	mg (calc)	mg/L Rpt'd	Conductance
86.3448	2.0	2.0	223
82.3647	265	270	293
80.6180	736	740	861
87.9347	1828 718	720	716
77.2398	1827	1830	↓
78.1837	1883	1880	↓
85.1920	449	450	578
83.0293	607	610	462
84.9168	0	0	
81.6097	1028	1030	
83.4825	1016	1020	
85.2966	214	210	319

Batch #70 7/11/96 ~~continued~~ ML
→ Rem below

T = 17.20

TV = 1000 $\frac{1830 - 720}{1000} = 111\%$
↓ $\frac{1880 - 720}{1000} = 116\%$

REVIEWED & APPROVED

BY DN DATE 7/11/96

Initial wt	mg (calc)	mg/L Rpt'd	Conductance
84.9052	3	3	
84.7282	1023	1020	
81.2050	1028	1030	
83.1238	481	480	455
85.7162	289	290	302
82.0056	1284	1280	↓
80.1537	1298	1300	↓
83.1581	3126	3100	2170
82.4711	1452	1500	1294
83.2637	1592	1600	1483
81.2882	1634	1600	1412
85.3201	499	500	453
83.8981	1538	1500	1324
78.9369	462	460	489
82.6927	536	540	500 752
80.2261	533	530	514
83.9048	19350	19,000	16,800
76.3896	633	630	693
82.9242	319	320	321
83.3721	1333	1330	↓
81.9602	1315	1320	↓

Batch #71 ML 7/12/96

TV = 1000 1029% ~~TX~~
↓ 103%

TV = 1000 $\frac{1280 - 290}{1000} = 99\%$
↓ $\frac{1300 - 290}{1000} = 101\%$

T = 13.00 1290

REVIEWED & APPROVED

BY DN DATE 7/11/96

To Page No. _____

Witnessed & Understood by me, _____

Date _____

Invented by _____

Date _____

Recorded by _____

002823

Form Page No. _____

0.1000 N

SCA#	client	Sx ID	Oil	VOL	Initial A	Vol. 8.3	Vol. 4.5
MB			1	50ml	4.9		<0.02
LCS	50ml of 576mg/l				8.4		5.82
LCS	↓ GE9606014				8.4		5.90
2 96-06-385-1	MAGMA	M29-UGF			7.2		2.22
1 -3		M27-LGF			7.7		0.74
2 -4		M19.6			7.6		0.70
2 -5		M28-LGF			8.7	<0.02	0.80
2 -6		M19.1-0			7.8		1.10
2 -7		C19-GL			7.8		1.12
1 96-06-317-6		M21-UGF			7.7		2.16
1 -9		M20-0			7.9		1.10
1 96-06-375-2	James Mamo	GW501582	↓	↓	7.2		6.44
N=0.100 VWR 9505058							
MB		(07-433-1)	1	50ml	5.05		<0.02
LCS	50ml of 576mg/l	(07-843-1)			8.46		5.76
LCS	↓ GE9606014	(07-844-1)			8.48		5.84
5 96-06-655-1	el/sch route	Mw-20			7.53		3.42
2		Mw-14			7.81		3.10
5 -3		Blind			7.71		3.18
5 96-06-681-1A		Mw-16			7.82		4.32
5 -151	10ml of 2358	Mw-16			9.01		8.86
5 -152	↓ GE9605028	Mw-16			8.66		8.92
N=0.100 VWR 9505058							
MB		(07-1647-1)	1	50ml	4.95		<0.02
LCS	50ml of 576mg/l	(07-1932-1)			8.56		5.8
LCS	↓ GE9606014	(07-1933-1)			8.59		5.92
3 96-07-164-1	MAGMA	M2-GU			7.75		2.22
3 -2		M3-GL			7.61		1.46
3 -3		M19.0			7.61		2.26
3 -4		M4-0			7.51		0.88
3 -5		M6-GU			7.93	1	0.48
3 -6R1		M8-0			8.47	<0.02	To Page No. 1.5

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

002824

Project No. _____

Book No. _____

TITLE _____

From Page No. _____

RKS 6/27/96

Tot	Alk	HCO ₃	CO ₃	OH	
0	0	0	0	0	
582	582	0	0	0	Reanalysis of various samples
590	590	0	0	0	
220	220	0	0	<10	
74	74	0	0	<10	
70	70	0	0	<10	
80	80	0	0	<10	
110	110	0	0	<10	
110	110	0	0	<10	
220	220	0	0	<10	
110	110	0	0	<10	
640	640	0	0	<10	
					RKS 7/8/96 Batch #45
0	0	0	0	0	
576	576	0	0	0	576/596 = 97% T=5
584	584	0	0	0	584/596 = 98%
340	340	<10	<10	<10	REVIEWED
310	310	<10	<10	<10	ON
320	320	<10	<10	<10	BY T=902 DATE 7/8/96
432 430	432 430	<10	<10	<10	
886	886	<10	<10	<10	886-430/472 = 96%
892	892	<10	<10	<10	892-430/472 = 98%
					RKS 7/15/96 Batch #46
0	0	0	0	0	
580	580	0	0	0	580/596 = 97% T=59
592	592	0	0	0	592/596 = 99%
220	220	<10	<10	<10	
150	150	<10	<10	<10	
230	230	<10	<10	<10	
88	88	<10	<10	<10	
48	48	<10	<10	<10	
150	150	<10	<10	<10	

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Date _____

Recorded by _____

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N = D.1000N VWR9505058

File #	BCA #	Client	Sx ID	Dr	Vol	Initial #	Vol 8.3	Vol.
3A	96-07-164-651	10ml of 2358	M8-0	1	50	10.13		6.2
	-652	↓ GE9605028	↓			10.02		6.2
3	96-07-223-1	MAGMA	M5-S			10.14		2.0
3	-2		M7-G-L			8.01		2.0
3	-3		M9-S			9.16	<0.02	0.0
3	-4		M33-UBF			10.21	<0.02	0.2
3	-5		M32-UBF			7.47		2.3
3	-6		M19.1			7.44		2.2
3	-7		M20-0			7.54		2.2
3	-8		M21-UBF			7.66		1.02
3	-9		M19-LBF			7.56		2.22
1	96-07-191-1	Allied Signal	GW-1			7.84		1.34
1	-2		GW-2			7.41		1.98
1	-3		GW-3			7.62		2.68
1	-4		GW-9			8.37	<0.02	1.20
						7.72		2.64
N = 0.100N			VWR9505058					
	MB		(07-1100-1)	1	50	4.83		<0.02
	LCS	50ml of 5744	(07-2012-1)			8.61		5.08
	LCS	↓ GE9606014	(07-2013-1)			8.66		5.92
1	96-07-264-1	MAGMA	M30-0			7.73		1.26
1	-2		M31-LBF			7.53		1.98
1	-3		M19.2			7.64		1.22
1A1	-4		M25-UBF			7.55		2.12
1A	-5		M24-0 M5/M10			7.87		0.74
1A	-551	10ml of 2358	↓			9.92		5.44
1A	-552	↓ GE9605028	↓			9.79		5.38
1	-6	MAGMA	M16-GU			7.52		1.28
1	-7		M17-G-L			8.96	0.1	1.06
1	96-07-190-1	Allied Signal	GW-6			7.19		1.68
1	96-07-215-1		GW-7			7.33		4.26
1	-2		GW-8			7.89		2.64
1	-3		GW-10			7.79		3.90
1	96-07-216-1	all 7454	GW-5			7.43		1.12
1	96-07-223-1		GW-4			7.51		1.36

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002826

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TITLE _____

Project No. _____

Book No. _____

1:

Page No. _____

RKS 7/15/96 Batch # 46 cont'd

Tot App	HLO3	CO3	OH	
624	624	<10	<10	$624 - 150/472 = 100\%$ T=6
620	620	<10	<10	$620 - 150/472 = 100\%$
200	200	<10	<10	
98	98	<10	<10	
24	24	<10	<10	
240	240	<10	<10	
220	220	<10	<10	
220	220	<10	<10	
100	100	<10	<10	
220	220	<10	<10	
130	130	<10	<10	
200	200	<10	<10	
270	270	<10	<10	
120	120	<10	<10	
260	260	<10	<10	

REVIEWED & APPROVED

BY DN DATE 7/16/96

				RKS 7/15/96 Batch # 48
0	0	0	0	
608	608	0	0	$608/596 = 102\%$
592	592	0	0	$592/596 = 99\%$
130	130	<10	<10	
+ 200	200	<10	<10	
120	120	<10	<10	
210	210	<10	<10	
74	74	<10	<10	
544	544	<10	<10	$544 - 74/472 = 100\%$ T=546
538	538	<10	<10	$538 - 74/472 = 98\%$
130	130	<10	<10	
110	110	<10	<10	
+ 170	170	<10	<10	
430	430	<10	<10	
260	260	<10	<10	
390	390	<10	<10	
110	110	<10	<10	
140	140	<10	<10	

REVIEWED & APPROVED

BY DN DATE 7/16/96

To Page No. _____

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

002827

CHANNEL NAME: NH3-N
 RUN DATE: 07-11-1996
 SAMPLE TABLE NAME: N96G11-1

NH3-N 350.1 JLV 7/11/96
 NH3-N Dist. 350.2 533-20 Inst
 Batches 172; 174

PEAK/CUP#	SAMPLE ID	DIL	WGT	HEIGHT	CALC VALUE	EF
1	SYNC	1	1	3645	10.07	N
2	W	1	1	0	0.01	b
3	HI	1	1	3653	10.10	
4	S1: 0	1	1	0	0.01	I
5	S2: 1	1	1	363	1.02	
6	S3: 4	1	1	1445	4.00	
7	S4: 7	1	1	2498	6.91	
8	S5: 10	1	1	3641	10.06	

INTERCEPT: -4.786127

LINEAR COEF: 362.315

CORRELATION COEF: .9999074

LCS \Rightarrow 1000 ppm G69411001

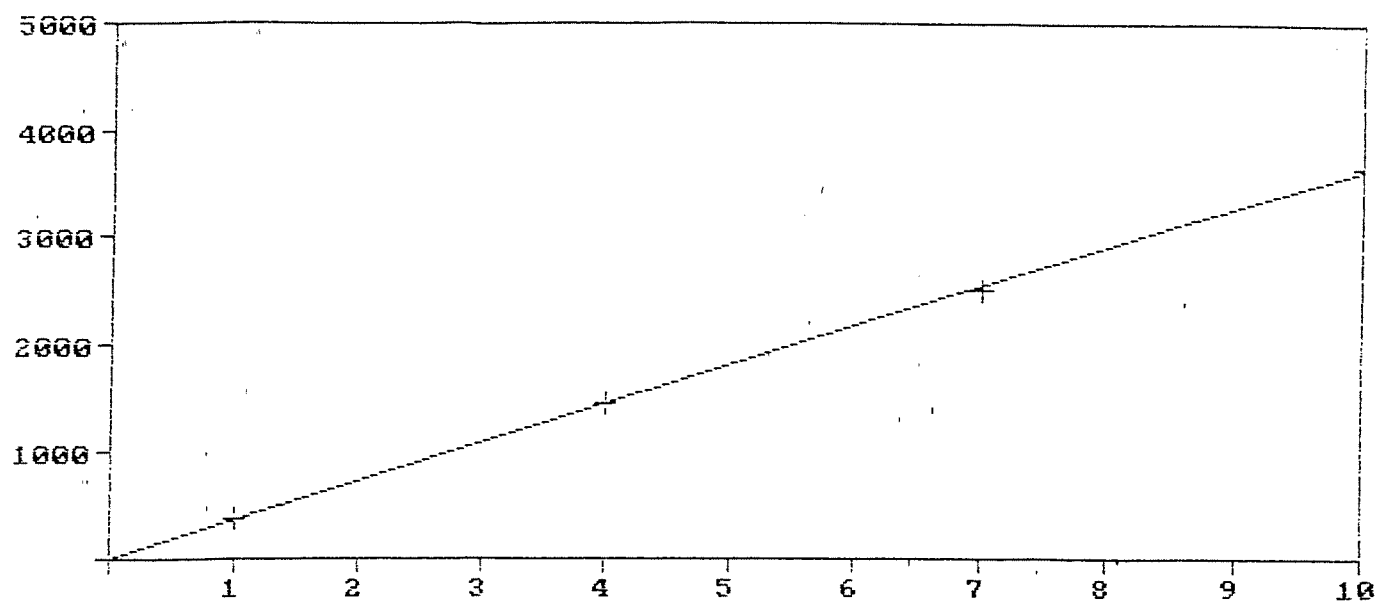
Spk \Rightarrow 1000 ppm G69601035

9	9	W	1	0	0.01	b
10	10	LCS 20 ul / 10 ml (07-1894-1)	1	707	1.96 / 2.0 = 98%	
11	11	MEL (07-962-1)	1	0	0.01	I
12	12	LCS 1 100 ul / 50 ml. (07-1762-1)	1	761	2.11 / 2.0 = 106%	
13	13	LCS 2 (07-1762-1)	1	665	1.85 / 2.0 = 92%	
14	14	07-141-1R1	1	548	1.53 = 1.5	
15	15	07-141-1S1 500 ul / 50 ml.	4	975	S1 = 10.82 - 1.5 / 10 = 93%	
16	16	07-141-1S2	4	911	S2 = 10.11 - 1.5 / 10 = 86%	
17	17	07-141-2	100	1625	449.83 = 450	T = 11.5
18	18	07-218-2	1	305	0.86	
19	19	07-192-1	1	2001	5.54 = 5.5	
20	20	07-204-1	1	0	OVR \rightarrow rerun below	
21	0	W	1	0	0.01	b
22	10	LCS (07-1028-1)	1	717	1.99	
23	21	MEL	1	0	0.01 = 40.0	
24	22	07-190-1	1	0	0.01 = 40.0	
25	23	07-191-1	1	0	0.01 = 40.0	
26	24	07-191-2	1	6	0.03 = 40.0	
27	25	07-191-2S1 20 ul / 4 ml.	1	1932	S1 = 5.35 / 5.0 = 107%	T = 5
28	26	07-191-2S2	1	1959	S2 = 5.42 / 5.0 = 108%	
29	27	07-191-3	1	55	0.17	I
30	28	07-191-4	1	1	0.02 = 40.0	
31	29	07-215-1	1	1	0.02 = 40.0	
32	30	07-215-2	1	1	0.02 = 40.0	
33	0	W	1	0	0.01	b
34	10	LCS	1	741	2.06	
35	31	07-215-3R1	1	7	0.03 = 40.0	
36	32	07-215-3S1 20 ul / 4 ml.	1	1744	S1 = 4.83 / 5.0 = 97%	
37	33	07-215-3S2	1	1796	S2 = 4.97 / 5.0 = 99%	T = 5.0
38	34	07-216-1	1	77	0.23	I
39	35	BLK	1	0	0.01	I
40	36	07-204-1	4	2350	26.00	
41	37	A	1	0	0.01	I
42	38	A	1	0	0.01	I
43	39	A	1	0	0.01	I
44	40	A	1	0	0.01	I
45	0	W	1	0	0.01	b
46	10	LCS (07-1895-1)	1	728	2.02 / 2.0 = 101%	
47	41	A	1	0	0.01	I
48	42	A	1	0	0.01	I

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B# 172; 174

CHANNEL NAME: NH3-N
RUN NAME: N96G11-1
RUN DATE: 07-11-1996
INITIAL⁹ CALIBRATION



PEAK NAME: CF
INTERCEPT = -4.786127

CALIBRATION CODE: 1
SLOPE = 362.315

CORRELATION: .9999074

002829

APPENDIX D
METALS

MDL Summary

Under No.: 69506510
Reported: 11.03.95

REPORT OF MDL RESULTS

Page 1

PARAMETER	CMD	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AVG	SD	MDL	MDL(MD)	MDL(MMD)
Silver 535-02	-0.05	0.0578	0.0547	0.0537	0.0518	0.0559	0.0538	0.0543	0.054857	0.001900	0.005966	0.01 ng/L	1 ng/kg
Aluminum 535-02	0.5	0.593	0.566	0.559	0.555	0.562	0.559	0.559	0.559000	0.004282	0.013445	0.1 ng/L	10 ng/kg
Arsenic 535-02	0.25	0.257	0.263	0.257	0.261	0.263	0.266	0.266	0.261857	0.003761	0.011810	0.05 ng/L	5 ng/kg
Boron 535-02	0.25	0.267	0.270	0.284	0.268	0.272	0.272	0.276	0.272714	0.005794	0.018193	0.2 ng/L	20 ng/kg
Barium 535-02	0.025	0.0271	0.0264	0.0264	0.0262	0.0267	0.0264	0.0262	0.026406	0.000318	0.000999	0.005 ng/L	0.5 ng/kg
Beryllium 535-02	0.025	0.0260	0.0261	0.0266	0.0263	0.0263	0.0264	0.0263	0.026286	0.000195	0.000612	0.001 ng/L	0.1 ng/kg
Calcium 535-02	2.5	2.59	2.60	2.64	2.62	2.63	2.63	2.62	2.618571	0.017728	0.055666	0.5 ng/L	50 ng/kg
Cadmium 535-02	0.025	0.0283	0.0287	0.0280	0.0303	0.0289	0.0295	0.0272	0.028700	0.001011	0.003175	0.01 ng/L	1 ng/kg
Cobalt 535-02	0.2	0.210	0.209	0.212	0.211	0.213	0.213	0.212	0.211429	0.001512	0.004748	0.04 ng/L	4 ng/kg
Chromium 535-02	0.05	0.0601	0.0553	0.0553	0.0546	0.0585	0.0559	0.0566	0.056614	0.001988	0.006242	0.01 ng/L	1 ng/kg
Copper 535-02	0.1	0.106	0.105	0.105	0.102	0.106	0.105	0.104	0.104714	0.001380	0.004333	0.02 ng/L	2 ng/kg
Iron 535-02	0.25	0.277	0.276	0.280	0.280	0.277	0.280	0.278	0.278286	0.001704	0.005351	0.04 ng/L	4 ng/kg
Potassium 535-02	2.5	2.56	2.67	2.54	2.52	2.50	2.55	2.48	2.545714	0.061606	0.193403	0.5 ng/L	50 ng/kg
Magnesium 535-02	0.5	0.606	0.591	0.590	0.569	0.592	0.591	0.588	0.589571	0.010845	0.034053	0.1 ng/L	10 ng/kg
Manganese 535-02	0.05	0.0534	0.0538	0.0536	0.0538	0.0540	0.0542	0.0536	0.053771	0.000268	0.000842	0.01 ng/L	1 ng/kg
Molybdenum 535-02	0.05	0.0519	0.0551	0.0493	0.0468	0.0565	0.0523	0.0528	0.052129	0.003260	0.010236	0.02 ng/L	2 ng/kg
Sodium 535-02	2.5	2.63	2.80	2.75	2.75	2.70	2.71	2.66	2.714286	0.057982	0.182063	0.5 ng/L	50 ng/kg
Nickel 535-02	0.025	0.0296	0.0296	0.0257	0.0224	0.0278	0.0293	0.0283	0.027529	0.002647	0.008312	0.04 ng/L	4 ng/kg
Lead 535-02	0.100	0.107	0.113	0.098	0.120	0.0876	0.0843	0.114	0.103414	0.013764	0.043219	0.05 ng/L	5 ng/kg
Antimony 535-02	0.5	0.518	0.513	0.527	0.515	0.540	0.538	0.533	0.526286	0.011131	0.034951	0.1 ng/L	10 ng/kg
Selenium 535-02	0.5	0.509	0.515	0.500	0.523	0.523	0.503	0.494	0.509571	0.011312	0.035520	0.1 ng/L	10 ng/kg
Silicon 535-02	2.00	1.98	2.01	1.96	1.95	1.96	1.98	1.99	1.975714	0.020702	0.065004	0.5 ng/L	50 ng/kg
Thallium 535-02	0.5	0.567	0.592	0.563	0.547	0.532	0.570	0.557	0.561143	0.018863	0.059230	0.07 ng/L	7 ng/kg
Vanadium 535-02	0.2	0.207	0.207	0.210	0.209	0.211	0.211	0.209	0.209143	0.001676	0.005263	0.04 ng/L	4 ng/kg
Zinc 535-02	0.05	0.0664	0.0674	0.0683	0.0653	0.0692	0.0657	0.0675	0.067114	0.001401	0.004399	0.01 ng/L	1 ng/kg

Standard Operating Procedures

PR00488 Metals - Aqueous Digestion

BCA STANDARD OPERATING PROCEDURE

SOP# PR00488
Tier 4 Rev. 03/15/95
Page 1 of 5

ACID DIGEST OF AQUEOUS SAMPLES FOR TRACE METALS

A. Summary

The following procedure describes the acid digestion of aqueous samples for analysis by flame or graphite furnace atomic absorption spectroscopy, or by inductively coupled argon plasma (ICP). Samples for analysis by graphite furnace are digested with nitric acid. Samples for analysis by flame or ICP are digested with a combination of nitric and hydrochloric acids. This procedure permits the digestion of groundwaters after filtration so that only dissolved metals are determined.

B. Safety

1. Wear gloves for protection from samples and acids.
2. Wear safety glasses.
3. Wear a lab coat.
4. Work with chemicals and samples in a hood.

C. Apparatus

1. Graduated glass beakers
2. Glass watchglasses
3. Graduated cylinders
4. Eppendorf pipets and tips
5. Macro-pipetter and tips, or repipettors
6. Analytical balance (± 0.01 g)
7. Hotplate
8. Whatman 41 or 541 filter paper

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9. Disposable polystyrene funnels
- 10 Metals sample bottles
- 11 Volumetric flasks

D. Reagents

1. Deionized water
2. Concentrated nitric acid, reagent grade or intra-analyzed (J.T. Baker)
3. Concentrated hydrochloric acid, reagent grade (Mallinckrodt) or intra-analyzed (J.T. Baker)
4. Hydrochloric acid, 1:1
5. Spiking solutions: 1000-ppm or 10,000-ppm solutions produced by Baker, Mallinckrodt, Spex Industries, Ricca or AESAR. If a lower concentration must be used for spiking, make the lower concentration by diluting the 1000-ppm or 10,000-ppm solutions. Solutions of mixed elements may be used.

E. Procedure

1. Notebook Preparation

- a. Enter the date and analyst's initials on the first available line. Box in the above information.
- b. Make columns for the log number, sample description, client ID, matrix, initial volume, final volume and COMMENTS.
- c. Enter the log number, sample description, client code, and matrix in the appropriate columns. The sample description should be taken from the sample container. The client code and matrix may be taken from the worksheets.

2. Sample Preparation

- a. Label beakers with log numbers. Be sure to include LCS's, blanks, spikes, and duplicate spikes.
- b. Rinse beakers with deionized water.
- c. If dissolved metals are to be analyzed, filter sample through 0.45-micron filter paper.

- d. Homogenize the sample by shaking it vigorously.
- e. Measure 100-mL (or smaller volume if required by sample availability) in a graduated cylinder and pour into a beaker. Record this initial volume in the prep notebook.
- f. A spike and duplicate spike are required every batch of twenty samples or less. Additional portions of sample must be measured out. For spiked samples refer to the prep worksheet or computer to determine which metals the sample needs to be analyzed for. Refer to the spike chart in the prep section for the amount of spiking solution to add. Adjust Eppendorf to correct amount. Add the correct amount of spiking solution to the sample. Record the amounts, lot numbers, and concentrations of spiking solutions in the prep notebook.
- g. Transfer 100 mL of deionized water to a beaker for the method blank.
- h. Prepare an LCS. Transfer 100 mL of deionized water to a beaker. Refer to the spike chart in the prep section for the amount of spiking solution to add. Adjust Eppendorf to correct amount. Add the correct amount of spiking solution. Record amounts, lot numbers, and concentrations of spiking solutions in the prep notebook.

3. Sample Digestion

- a. Add 3 mL of concentrated nitric acid to each beaker.
- b. Heat without boiling until the volume is about 20 mL. Toward the end, watch the digesting samples very carefully; do not let them go dry! (See I.1.d).
- c. Cool the beakers by removing them from the hot plate.
- d. Add another 3-mL portion of concentrated nitric acid.
- e. Cover beakers with watchglasses and continue to heat until the digestion is complete (the digestate will be clear and the color will be stable). Do not let the samples go dry! (See I.1.d).
- f. Cool the beakers once more by removing them from the hot plate.

- g. If, and only if, the sample is to be analyzed by flame or ICP, add 10 mL of 1:1 hydrochloric acid (or 5 mL of concentrated hydrochloric acid and about 5 mL of deionized water) and heat for another 15 minutes. Do not add hydrochloric acid to samples which will be analyzed by graphite furnace. Cool the beakers by removing them from the hot plate.
- h. Fold a piece of 41 or 541 filter paper into quarters. Put filter paper into a disposable polystyrene funnel. Place funnel on top of a graduated cylinder or volumetric flask. Moisten the filter paper with deionized water. At this stage, the sample may be diluted to a convenient volume less than 100 mL. Pour sample into funnel. Rinse watchglass and beaker with deionized water 2 or 3 times into funnel. After all of sample has gone through funnel, remove funnel and dilute the sample to final volume (100 mL for most samples) with deionized water.
- i. Record the final volume and the type of prep (with or without HCl) in the prep book.
- j. Label a metals bottle with log number, any dilution factor, and indicate if HCl was included in the digestion. Pour sample into metals bottle. Mix well.

F. Quality Control

1. The work consists of two batches if some samples require HCl and others do not.
2. Prep a method blank for each type of prep with each batch of samples.
3. Prep at least one set of duplicate spikes with each batch.
4. Prep a laboratory control standard at a pre-determined concentration with each batch in order to validate the method.

G. Calculations and Data Review

None

H. Interferences

Diverse matrix types

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I. Troubleshooting

1. Poor spike recovery

- a. The spike amount may be inappropriate. The spike should be at least 50% of the concentration of analyte already in the sample.
- b. Be sure that samples do not bump while on the hotplate as this may lead to sample loss. If the sample bumps over, discard and redigest.
- c. For samples that have an unusual matrix, the procedure may need to be modified in order to digest samples properly. See group leader or supervisor if this should occur.
- d. If a sample digest is allowed to go to dryness, low recoveries will result. Should this occur, discard the sample and redigest.

2. Contamination is suspected (refer to SOP# PR01289)

- a. Reagents such as acids and oxidizers can become contaminated during use.
- b. Glassware must be scrupulously clean. Washing and rinsing procedures are established and followed to minimize contamination.
- c. Miscellaneous sources of contamination:

Disposable pipet tips
Pipetters & eppendorfs
Gloves
Hotplate

3. Widely divergent results for duplicates may result from poor homogenization of samples.

J. References

1. Test Methods for Evaluating Solid Waste, EPA Manual SW846, Third Edition, Methods 3010 and 3020.
2. Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Section 200.0.

Reviewed and approved
B. Moore 03/15/95
Issued _____

002839

ME00288 Inductively Coupled Plasma Emission Spectroscopy

BCA STANDARD OPERATING PROCEDURE

SOP# ME00288.G
Tier 4 Rev. 02/02/96
Page 1 of 7

INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPECTROSCOPY

Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Thallium, Vanadium, Zinc, Tin, Strontium, Titanium, and others

A. Summary

Inductively Coupled Plasma (ICP) may be used to determine the elements in the above list. A high temperature plasma is created by a radio frequency (RF) generator. The plasma dissociates aspirated sample into excited ions and atoms. Quantitation is achieved by measuring the amount of light emitted by the excited species. Concentration is related to emission using emission intensity versus concentration calibration curves.

B. Safety

1. Use appropriate caution when dealing with the lighted plasma.
2. Refer to the safety requirements in the instrument manual for the particular instrument you are using.
3. Some working standards are hazardous and should be handled with caution and disposed of accordingly. These include: arsenic, chromium, lead, thallium, and selenium. NOTE: Most concentrated metals standards (1000 mg/L) are hazardous so exercise caution when preparing working standards.

C. Apparatus

1. ICP spectrometer equipped with autosampler and data acquisition computer system.
2. 15 ml disposable test tubes or centrifuge tubes.
3. Argon gas supply.

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4. Volumetric pipets.
5. Volumetric flasks.
6. Eppendorf pipets, 100uL and 1000uL, adjustable.
7. Reservoir for autosampler rinse.

D. Reagents

1. Nitric Acid, Fisher trace metal grade, or equivalent.
2. Hydrochloric Acid, reagent grade (Mallinckrodt), intra-analyzed (J.T. Baker), or equivalent.
3. Argon, welding grade or better.
4. Standard stock solutions for each metal, manufactured by Spex Industries, Baker, Ricca, Mallinckrodt, or equivalent with certificates of traceability to primary reference standards.
5. Calibration standards:

Add about 200 mL of deionized water to a 1-L volumetric flask. Add 60 mL of concentrated nitric acid and 40 mL of concentrated hydrochloric acid. Then add the appropriate amount of the standard stock solutions. Dilute to the mark with deionized water and mix.
6. Calibration blank: A calibration standard prepared without standard stock solutions.
7. Calibration verification: A calibration standard with a concentration near the midpoint of the concentration range. This must be prepared from a different manufacturer and lot number than the standard solutions used for the calibration standards.
8. Interference check sample containing high concentrations of elements with potential for spectral emission interference with target elements.

E. Procedure

1. Instrument Setup

- a. Refer to the instrument manual for specific procedures.
- b. The analyst should set the operating conditions according to the instructions provided by the manufacturer.

instrument's manufacturer. Sensitivity, instrumental detection limit, precision, linear dynamic range, and interference effects must be established for each individual analyte line on that particular instrument. All quantitation measurements must be within instrument linear range. The analyst must (1) verify that the instrument configuration and operating conditions satisfy the analytical requirements and (2) maintain quality control data confirming instrument performance and analytical results.

2. Organizational Steps

- a. Assemble materials and reagents to analyze standards and samples.
- b. Prepare or locate the calibration standards (including the calibration blank), calibration verification, interference check standards, LCS, samples and method blanks.
- c. Prepare the runlog. The file name, analysis date and analyst initials must appear near the top of the page. Create columns for log number, sample ID (Optional), sample weight, and dilution factor. A computer generated printout is acceptable. Note: Sample weight and dilution factor should not be entered unless the instrument software has the capability to show concentration before these factors are applied.

3. Analysis of Samples

- a. The Baird instrument should be calibrated with at least 3 standards and a blank. The correlation coefficient must be greater than 0.995. One standard in the curve should be at the same level as the PQL. Note: PQL is an assigned concentration near the detection limit in which the analyst is fairly confident in the results.

Since the Jarrell Ash instrument can't be calibrated in this manner due to software and linearity limitations, a blank and high standard are used to calibrate the instrument. For any samples requiring EPA method 6010A or Department of Defense (DOD) work, such as Air Force or Army Corp, the Baird instrument must be used unless a waiver is obtained from the client before analysis starts. A PQL verification standard must be analyzed if the Jarrell Ash instrument is used for DOD work.

- b. Verify high end of the calibration curve by aspirating the highest calibration standard (Note: If a very high standard is also used for calibration to increase the

linear range for certain elements, then this standard should not be used for this purpose). The recovery must be within 95-105%. If not, the instrument must be recalibrated and the high standard verified again before proceeding.

- c. Verify that the calibration curve goes through zero by aspirating the calibration blank. The concentration must be less than 3 standard deviations of the mean blank value (Note: 3 standard deviations of the mean blank value cannot be determined until the end of the run). If not, the instrument must be recalibrated and the calibration blank verified again before proceeding.
- d. Verify absence of spectral interference by analyzing 2 interference check standards similar to those found in tables 1 and 2.

Although there is no criteria for standard 1, the analyst should make every attempt to adjust the interelement correction factors to insure that target elements (non-interfering elements) are less than 5 times the RDL.

Recovery for standard 2 must be within 80-120%. If not, the interelement correction factors (1 or more) should be adjusted and then verified that the changes are correct. It is very important to recalibrate the instrument after changing interelement correction factors before proceeding with analysis.

- d. Verify instrument sensitivity by analyzing the PQL standard. Although there is no recovery criteria for the PQL standard, the analyst should make every attempt to achieve a 50-200% recovery.
- e. Aspirate samples, method blanks, laboratory control standards, matrix spikes and duplicates (duplicates can be duplicate samples or duplicate matrix spikes).
- f. Run the calibration verification and the calibration blank every ten samples. The calibration verification standard must be within 90-110%. If not, the instrument should be recalibrated, and the samples back to the last good CV reanalyzed for the element(s) affected. The calibration blank must be less than 3 standard deviations of the mean blank value (Note: 3 standard deviations of the mean blank value cannot be determined until the end of the run).
- g. Flush the system with calibration blank solution between samples.

- h. Any sample which has an emission intensity greater than that of the highest standard must be diluted. Use an eppendorf pipet to dilute the necessary volume in the calibration blank solution. Enter the dilution factor in the runlog as the amount of sample you used divided by the total volume.

4. Instrument shut-down and clean-up procedures

- a. After all the samples have been aspirated, run the PQL standard, both interference check standards, calibration verification, and calibration blank again to verify instrument conditions.
- b. Return the instrument to its initial state, either power off or the recommended wait state as defined in the instrument manual.
- c. Put away samples, standards, eppendorfs and clean the work area.

F. Quality Control

- 1. Each of the following QC samples should be run at a frequency of one for every batch of twenty samples or less.
 - a. Matrix spike - the concentration of analyte added is generally at least 50% of the concentration in the sample or ten times the detection limit, which ever is greater. CLP spike levels may be used. If the matrix spike or matrix spike duplicate recovery falls out of the control limits, document the fact. Check the LCS and LCSD recovery. If the LCS and LCSD recoveries are in control then matrix interferences may be assumed and the data reported.
 - b. Matrix spike duplicates - two separate digests must be prepared. The RPD must fall within control limits. If the RPD is out of control, document the fact. Check the LCS and LCSD RPD. If the LCS and LCSD RPD is in control then matrix interferences may be assumed and the data reported.
 - c. Laboratory control standard. If both the LCS and LCSD recovery or LCS and LCSD RPD falls out of the control limits then the entire batch must be reprepared and reanalyzed.
 - d. Method blank. All elements should be below the RDL. If not, document the fact. Report any samples less than the RDL or greater than ten times the method

blank. Reprep all other samples requiring the element in question.

G. Calculations and Data Review

1. Obtain sample results through the software provided by the manufacturer or created in-house.
2. Relative percent difference is calculated as follows:

$$\%RPD = \frac{S1 - S2}{(S1 + S2)/2} \times 100$$

where:

S1 = result of the matrix spike

S2 = result of the matrix spike duplicate

3. Spike recovery is calculated as follows:

$$\%REC = \frac{S - R}{T - R} \times 100$$

where:

S = average of duplicate spike results

R = original sample result

T = concentration of the spike added plus the original sample result

H. Interference

Refer to section 3.0 of method 6010 in Volume 1A, Test Methods for Evaluating Solid Waste, EPA SW-846, November, 1986. Spectral, physical, and chemical interferences are discussed along with element by element wavelength interference equivalents.

I. References

1. Test Methods for Evaluating Solid Waste, Volume 1A, USEPA SW-846, Third Edition, November 1986, Method 6010.
2. Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 200.7.

Table 1

Interference Check Standard 1

Element	Concentration
Al	500 mg/L
Ca	500
Mg	500
Fe	200

Table 2

Interelement Check Standard 2

Element	Concentration
Al	500 mg/L
Ca	500
Mg	500
Fe	200
Ag	0.5 - 1.0
As	1.0 - 2.0
Ba	0.5 - 1.0
Be	0.5 - 1.0
Cd	0.5 - 1.0
Co	0.5 - 1.0
Cr	0.5 - 1.0
Cu	0.5 - 1.0
Mn	0.5 - 1.0
Mo	0.5 - 1.0
Ni	0.5 - 1.0
Pb	0.5 - 2.0
Sb	0.5 - 1.0
Se	1.0 - 2.0
Tl	0.5 - 2.0
V	0.5 - 1.0
Zn	0.5 - 1.0

Reviewed and approved
L. Geddes 02/02/96
Issued _____

Standards Documentation

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:01:11 16 JAN 1997 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ETPQL
Date Prepared: 04/05/96
Prepared by: Ebrahim Tavasolian
Type:

Reference #: ME9604013
Expiration Date: 04/05/97
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
HCL	BAKER		5
HN03	FISHER		2

Source	Amount	Component	Final Concentration
ME9505001	0.2000 ML	Silver	0.0400 MG/L
		Barium	0.2000 MG/L
		Beryllium	0.0800 MG/L
		Cadmium	0.1000 MG/L
		Cobalt	0.2000 MG/L
		Copper	0.2000 MG/L
		Iron	0.2000 MG/L
		Manganese	0.2000 MG/L
		Nickel	0.2000 MG/L
		Lead	0.2000 MG/L
		Thallium	0.2000 MG/L
		Zinc	0.2000 MG/L
ME9505002	0.2000 ML	Aluminum	0.2000 MG/L
		Arsenic	0.2000 MG/L
		Calcium	2.0000 MG/L
		Chromium	0.2000 MG/L
		Potassium	2.0000 MG/L
		Magnesium	2.0000 MG/L
		Sodium	2.0000 MG/L
		Antimony	0.2000 MG/L
		Selenium	0.2000 MG/L
		Vanadium	0.2000 MG/L
ME9508002	0.2000 ML	Molybdenum	0.2000 PPM
ME9509002	0.2000 ML	Boron	0.2000 PPM
ME9507001	0.2000 ML	Tin	0.2000 MG/L
ME9601011	0.2000 ML	Strontium	0.2000 PPM
ME9603004	0.2000 ML	Titanium	0.2000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:01:14 16 JAN 1997 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ET LOW
Date Prepared: 04/05/96
Prepared by: Ebrahim Tavasolian
Type: Calibration Standard

Reference #: ME9604012
Expiration Date: 04/05/97
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
HCL	BAKER	H14032	5
HN03	FISHER	11404	2

Source	Amount	Component	Final Concentration
ME9505001	1.0000 ML	Silver	0.2000 MG/L
		Barium	1.0000 MG/L
		Beryllium	0.4000 MG/L
		Cadmium	0.5000 MG/L
		Cobalt	1.0000 MG/L
		Copper	1.0000 MG/L
		Iron	1.0000 MG/L
		Manganese	1.0000 MG/L
		Nickel	1.0000 MG/L
		Lead	1.0000 MG/L
		Thallium	1.0000 MG/L
		Zinc	1.0000 MG/L
ME9505002	1.0000 ML	Aluminum	1.0000 MG/L
		Arsenic	1.0000 MG/L
		Calcium	10.0000 MG/L
		Chromium	1.0000 MG/L
		Potassium	10.0000 MG/L
		Magnesium	10.0000 MG/L
		Sodium	10.0000 MG/L
		Antimony	1.0000 MG/L
		Selenium	1.0000 MG/L
		Vanadium	1.0000 MG/L
ME9508002	1.0000 ML	Molybdenum	1.0000 PPM
ME9509002	1.0000 ML	Boron	1.0000 PPM
ME9507001	1.0000 ML	Tin	1.0000 MG/L
ME9601011	1.0000 ML	Strontium	1.0000 PPM
ME9603004	1.0000 ML	Titanium	1.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:01:16 16 JAN 1997 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ET HIGH
Date Prepared: 04/05/96
Prepared by: Ebrahim Tavasolian
Type: Calibration Standard

Reference #: ME9604011
Expiration Date: 04/05/97
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
HCL	BAKER	H14032	5
HN03	FISHER	11404	2

Source	Amount	Component	Final Concentration
ME9602004	10.0000 ML	Silver	2.0000 MG/L
		Barium	10.0000 MG/L
		Beryllium	4.0000 MG/L
		Cadmium	5.0000 MG/L
		Cobalt	10.0000 MG/L
		Copper	10.0000 MG/L
		Iron	10.0000 MG/L
		Manganese	10.0000 MG/L
		Nickel	10.0000 MG/L
		Lead	10.0000 MG/L
		Thallium	10.0000 MG/L
		Zinc	10.0000 MG/L
ME9602005	10.0000 ML	Aluminum	10.0000 MG/L
		Arsenic	10.0000 MG/L
		Calcium	100.0000 MG/L
		Chromium	10.0000 MG/L
		Potassium	100.0000 MG/L
		Magnesium	100.0000 MG/L
		Sodium	100.0000 MG/L
		Antimony	10.0000 MG/L
		Selenium	10.0000 MG/L
		Vanadium	10.0000 MG/L
ME9511033	10.0000 ML	Boron	10.0000 PPM
ME9601008	10.0000 ML	Molybdenum	10.0000 PPM
ME9507001	10.0000 ML	Tin	10.0000 MG/L
ME9601011	10.0000 ML	Strontium	10.0000 PPM
ME9603004	10.0000 ML	Titanium	10.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:01:18 16 JAN 1997 - P. 1 :

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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: LINEAR RANGE SAMPLE
Date Prepared: 11/13/95
Prepared by: Ebrahim Tavasolian
Type:

Reference #: ME9511030
Expiration Date: 11/13/96
Total Volume: 500 ML

Solvent	Manufacturer	Lot#	%
HCL	BAKER	H14032	5
HNO3	FISHER	11404	2

Source	Amount	Component	Final Concentration
ME9508020	30.0000 ML	Aluminum	300.0000 PPM
		Calcium	300.0000 PPM
		Magnesium	300.0000 PPM
		Iron	120.0000 PPM
ME9504008	15.0000 ML	Copper	30.0000 MG/L
ME9509021	15.0000 ML	Potassium	300.0000 PPM
ME9509022	15.0000 ML	Sodium	300.0000 PPM
ME9511020	15.0000 ML	Lead	30.0000 PPM
ME9509007	15.0000 ML	Zinc	30.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :
 : BC ANALYTICAL : GLEN LAB : 15:01:23 16 JAN 1997 - P. 1 :
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Reviewed Init: _____
 Date: _____

STANDARDS DOCUMENTATION

Name: CCV
 Date Prepared: 04/05/96
 Prepared by: Ebrahim Tavasolian
 Type:

Reference #: ME9604014
 Expiration Date: 04/05/97
 Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
HCL	BAKER	H14032	5
HN03	FISHER	11404	2

Source	Amount	Component	Final Concentration
ME9508008	5.0000 ML	Silver	1.0000 PPM
		Barium	5.0000 PPM
		Beryllium	2.0000 PPM
		Cadmium	2.5000 PPM
		Cobalt	5.0000 PPM
		Copper	5.0000 PPM
		Iron	5.0000 PPM
		Manganese	5.0000 PPM
		Nickel	5.0000 PPM
		Lead	5.0000 PPM
		Thallium	5.0000 PPM
ME9508009	5.0000 ML	Zinc	5.0000 PPM
		Aluminum	5.0000 PPM
		Arsenic	5.0000 PPM
		Calcium	50.0000 PPM
		Chromium	5.0000 PPM
		Potassium	50.0000 PPM
		Magnesium	50.0000 PPM
		Sodium	50.0000 PPM
		Antimony	5.0000 PPM
		Selenium	5.0000 PPM
		Vanadium	5.0000 PPM
ME9509018	5.0000 ML	Molybdenum	5.0000 PPM
ME9504002	0.5000 ML	Boron	5.0000 PPM
ME9507001	5.0000 ML	Tin	5.0000 MG/L
ME9601011	5.0000 ML	Strontium	5.0000 PPM
ME9603004	5.0000 ML	Titanium	5.0000 PPM

Disposal Method:
 Verification Date:
 Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:01:25 16 JAN 1997 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ICSA
Date Prepared: 10/18/95
Prepared by: Ebrahim Tavasolian
Type: Interference Check Standard

Reference #: ME9510008
Expiration Date: 10/18/96
Total Volume: 2000 ML

Solvent	Manufacturer	Lot#	%
HN03			2
HCL			5

Source	Amount	Component	Final Concentration
ME9508020	200.0000 ML	Aluminum	500.0000 PPM
		Calcium	500.0000 PPM
		Magnesium	500.0000 PPM
		Iron	200.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:01:26 16 JAN 1997 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ETAFPL
Date Prepared: 07/02/96
Prepared by: Ebrahim Tavasolian
Type: Stock Solution

Reference #: ME9607007
Expiration Date: 07/02/97
Total Volume: 500 ML

Solvent	Manufacturer	Lot#	%
HN03	JT BAKER		5
HCL	JT BAKER		5

Source	Amount	Component	Final Concentration
ME9607002	50.0000 ML	<-- Prepared Source. Level 1 -->	
.ME9607001	0.5000 ML	Silver	0.0500 PPM
.ME9511023	0.5000 ML	Aluminum	0.5000 PPM
.ME9601005	0.3000 ML	Arsenic	0.3000 PPM
.ME9509002	1.0000 ML	Boron	0.1000 PPM
.ME9501015	0.2000 ML	Barium	0.0200 PPM
.ME9509015	0.0300 ML	Beryllium	0.0030 PPM
.ME9602007	1.0000 ML	Calcium	1.0000 PPM
.ME9508001	0.0500 ML	Cadmium	0.0050 PPM
.ME9501014	0.5000 ML	Cobalt	0.0500 PPM
.ME9509020	0.5000 ML	Chromium	0.0500 PPM
.ME9604021	0.5000 ML	Copper	0.0500 PPM
.ME9509010	0.0500 ML	Iron	0.0500 PPM
.ME9605007	5.0000 ML	Potassium	5.0000 PPM
.ME9511021	1.0000 ML	Magnesium	1.0000 PPM
.ME9509006	0.2000 ML	Manganese	0.0200 PPM
.ME9605012	1.0000 ML	Molybdenum	0.1000 PPM
.ME9601006	1.0000 ML	Sodium	1.0000 PPM
.ME9509003	1.0000 ML	Nickel	0.1000 PPM
.ME9509005	2.0000 ML	Lead	0.2000 PPM
.ME9509001	4.0000 ML	Antimony	0.4000 PPM
.ME9601004	1.0000 ML	Selenium	1.0000 PPM
.ME9511002	4.0000 ML	Thallium	0.4000 PPM
.ME9501017	1.0000 ML	Vanadium	0.1000 PPM
.ME9509007	0.2000 ML	Zinc	0.0200 PPM

Disposal Method:
Verification Date: 07/02/96
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:01:29 16 JAN 1997 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ICSAB
Date Prepared: 10/18/95
Prepared by: Ebrahim Tavasolian
Type:

Reference #: ME9510007
Expiration Date: 10/18/96
Total Volume: 2000 ML

Solvent	Manufacturer	Lot#	%
HCL	BAKER		5
HNO3	FISHER		2

Source	Amount	Component	Final Concentration
ME9505013	20.0000 ML	Silver	1.0000 PPM
		Beryllium	0.5000 PPM
		Cadmium	1.0000 PPM
		Cobalt	0.5000 PPM
		Copper	0.5000 PPM
		Manganese	0.5000 PPM
		Nickel	1.0000 PPM
		Lead	1.0000 PPM
		Zinc	1.0000 PPM
ME9505014	20.0000 ML	Barium	0.5000 PPM
		Chromium	0.5000 PPM
		Vanadium	0.5000 PPM
ME9506002	2.0000 ML	Arsenic	1.0000 MG/L
ME9509002	1.0000 ML	Boron	0.5000 PPM
ME9509023	2.0000 ML	Molybdenum	1.0000 PPM
ME9507004	2.0000 ML	Antimony	1.0000 MG/L
ME9507007	4.0000 ML	Selenium	2.0000 MG/L
ME9501016	2.0000 ML	Thallium	1.0000 PPM
ME9508003	1.0000 ML	Sodium	5.0000 PPM
ME9507005	1.0000 ML	Potassium	5.0000 MG/L
ME9508020	200.0000 ML	Aluminum	500.0000 PPM
		Calcium	500.0000 PPM
		Magnesium	500.0000 PPM
		Iron	200.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

002856

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 11:31:24 28 JAN 1997 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ET HIGH
Date Prepared: 04/05/96
Prepared by: Ebrahim Tavasolian
Type: Calibration Standard

Reference #: ME9604011
Expiration Date: 04/05/97
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
HCL	BAKER	H14032	5
HN03	FISHER	11404	2

Source	Amount	Component	Final Concentration
ME9602004	10.0000 ML	Silver	2.0000 MG/L
		Barium	10.0000 MG/L
		Beryllium	4.0000 MG/L
		Cadmium	5.0000 MG/L
		Cobalt	10.0000 MG/L
		Copper	10.0000 MG/L
		Iron	10.0000 MG/L
		Manganese	10.0000 MG/L
		Nickel	10.0000 MG/L
		Lead	10.0000 MG/L
		Thallium	10.0000 MG/L
		Zinc	10.0000 MG/L
ME9602005	10.0000 ML	Aluminum	10.0000 MG/L
		Arsenic	10.0000 MG/L
		Calcium	100.0000 MG/L
		Chromium	10.0000 MG/L
		Potassium	100.0000 MG/L
		Magnesium	100.0000 MG/L
		Sodium	100.0000 MG/L
		Antimony	10.0000 MG/L
		Selenium	10.0000 MG/L
		Vanadium	10.0000 MG/L
ME9511033	10.0000 ML	Boron	10.0000 PPM
ME9601008	10.0000 ML	Molybdenum	10.0000 PPM
ME9507001	10.0000 ML	Tin	10.0000 MG/L
ME9601011	10.0000 ML	Strontium	10.0000 PPM
ME9603004	10.0000 ML	Titanium	10.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

002857

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 11:37:58 28 JAN 1997 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: LCS HCL
Date Prepared: 06/24/96
Prepared by: Dat Nguyen
Type: Lab Control Standard

Reference #: ME9606007
Expiration Date: 06/24/97
Total Volume: 2000 ML

Solvent	Manufacturer	Lot#	%
HNO3	JT BAKER		5
HCL	JT BAKER		5

Source	Amount	Component	Final Concentration
ME9602004	20.0000 ML	Silver	2.0000 MG/L
		Barium	10.0000 MG/L
		Beryllium	4.0000 MG/L
		Cadmium	5.0000 MG/L
		Cobalt	10.0000 MG/L
		Copper	10.0000 MG/L
		Iron	10.0000 MG/L
		Manganese	10.0000 MG/L
		Nickel	10.0000 MG/L
		Lead	10.0000 MG/L
		Thallium	10.0000 MG/L
		Zinc	10.0000 MG/L
ME9602005	20.0000 ML	Aluminum	10.0000 MG/L
		Arsenic	10.0000 MG/L
		Calcium	100.0000 MG/L
		Chromium	10.0000 MG/L
		Potassium	100.0000 MG/L
		Magnesium	100.0000 MG/L
		Sodium	100.0000 MG/L
		Antimony	10.0000 MG/L
		Selenium	10.0000 MG/L
		Vanadium	10.0000 MG/L
ME9605012	20.0000 ML	Molybdenum	10.0000 PPM
ME9601007	20.0000 ML	Boron	10.0000 PPM
ME9601011	20.0000 ML	Strontium	10.0000 PPM
ME9604023	20.0000 ML	Titanium	10.0000 PPM
ME9601003	10.0000 ML	Tin	50.0000 PPM
ME9602007	80.0000 ML	Calcium	400.0000 PPM
ME9602009	80.0000 ML	Magnesium	400.0000 PPM
ME9605007	80.0000 ML	Potassium	400.0000 PPM
ME9601006	80.0000 ML	Sodium	400.0000 PPM
ME9601005	8.0000 ML	Arsenic	40.0000 PPM
ME9601004	8.0000 ML	Selenium	40.0000 PPM

Disposal Method:
Verification Date: 06/24/96
Hazard Class:

Disposal Date:

NA-500 PPM K-500 PPM CA-500 PPM MG-500 PPM AS-50 PPM SE-50 PPM

002858

End of Report

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 11:38:02 28 JAN 1997 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: AQ SPIKE HCL
Date Prepared: 07/10/96
Prepared by: Dat Nguyen
Type: Spike Solution

Reference #: ME9607014
Expiration Date: 07/10/97
Total Volume: 2000 ML

Solvent	Manufacturer	Lot#	%
HN03			5
HCL			5

Source	Amount	Component	Final Concentration
ME9602009	100.0000 ML	Magnesium	500.0000 PPM
ME9511024	100.0000 ML	Calcium	500.0000 PPM
ME9511022	100.0000 ML	Sodium	500.0000 PPM
ME9512003	20.0000 ML	Potassium	100.0000 UG/ML
ME9601004	6.0000 ML	Selenium	30.0000 PPM
ME9601005	6.0000 ML	Arsenic	30.0000 PPM
ME9512005	6.0000 ML	Thallium	30.0000 UG/ML
ME9511020	60.0000 ML	Lead	30.0000 PPM
ME9511038	60.0000 ML	Molybdenum	30.0000 UG/ML
ME9508001	10.0000 ML	Cadmium	5.0000 PPM
ME9509007	10.0000 ML	Zinc	5.0000 PPM
ME9509004	10.0000 ML	Copper	5.0000 PPM
ME9501017	10.0000 ML	Vanadium	5.0000 PPM
ME9501015	10.0000 ML	Barium	5.0000 PPM
ME9509003	10.0000 ML	Nickel	5.0000 PPM
ME9501014	10.0000 ML	Cobalt	5.0000 PPM
ME9509006	2.0000 ML	Manganese	1.0000 PPM
ME9509015	2.0000 ML	Beryllium	1.0000 PPM
ME9509020	4.0000 ML	Chromium	2.0000 PPM
ME9509010	2.0000 ML	Iron	10.0000 PPM
ME9508016	3.0000 ML	Aluminum	15.0000 PPM
ME9509002	50.0000 ML	Boron	25.0000 PPM
ME9604023	20.0000 ML	Titanium	10.0000 PPM
ME9405011	60.0000 ML	Strontium	30.0000 PPM
ME9601003	10.0000 ML	Tin	50.0000 PPM
ME9509001	70.0000 ML	Antimony	35.0000 PPM
ME9509011	10.0000 ML	Silver	5.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

002859

Prep Logs for Metals

F.	Page No.	Client	Sample ID	MTX	Volume (mls) In Act. Rpt Date (ED)	Pip fist	Comments
			DIG. AQ. GFA	(3020/PROD488)		07-11-96 (EP)	01578
		Blank	---	DI	✓		
		LCS	---	DI	✓		
		LCS	---	DI	✓		10mls of ME 9601001
		G9607-218-1R Brown-Venue	INF	W.W	✓		
		-1S ₁	↓	↓	✓		
		-1S ₂	↓	↓	✓		1ml of ME 9601002
		-2	EFF	↓	✓		
		G9607-172-1 Levine, Erick	EFF-7296	G.W	✓	0.45ml	
		-2	↓	↓	✓		
		G9607-222-1 Tes. NCAL	INFL	G.W	✓		
		-2	↓	↓	✓		
		Used J. T. BAKER HNO ₃ Lot # K 5025					
			DIG. AQ. HCL	(3010/PROD488)		07-11-96 (EP)	01573
		Blank	---	DI	✓		
		LCS	---	DI	✓		
		LCS	---	DI	✓		10mls of ME 9606007
		G9607-190-1R Sqaech. SLD	GW-6	AQ	✓		
		-1S ₁	↓	↓	✓		
		-1S ₂	↓	↓	✓		10mls of ME 9607014
		G9607-191-1	GW-1	↓	✓		
		-2	GW-2	↓	✓		
		-3	GW-3	↓	✓		
		-4	GW-4	↓	✓		
		G9607-209-1 BC. Denver	INF-05	W.W	✓		
		-2	PVEFF-05	↓	✓		
		-3	SV EFF-05	↓	✓		
		G9607-217-1 BC. Pleasant	24hr Comp	W.W	✓		
		-220-1	24hr Comp	↓	✓		
		-218-1 Brown-Venue	INF	W.W	✓		
		-2	EFF	↓	✓		

Witnessed & Understood by me,

Date

Invented by

Recorded by

Date

To Page No.

002861

Project No. _____

Book No. _____

TITLE _____

Page No. Log #	Client	Sample ID	Matrix	Volume final V=100mls	Pre- filter	Comments	R #
9607-213-4	New Cure	960611M	w.w	✓			3
-5	↓	960612M	↓	✓			4
-6	↓	960613M	↓	✓			3
9607-215-1	Search SLD	GW-7	AQ	✓			L
-2	↓	GW-8	↓	✓			L
-3	↓	GW-10	↓	✓			L
9607-216-1	↓	GW-5	↓	✓			L
9607-190-1	Search SLD	K	K				
Used J.T. BAKER HING lot # K5025							
Used J.T. BAKER HIR lot # J27040							
(4) DIG, AG, HCL (300/1000) 07-12-96 (81) 6179							
C1332 CR20							
BLANK	—	—	DL	✓			
CS	—	—	DL	✓			
CS	—	—	DL	✓			
96-228-1	BC-MALMIT	M5 S	DW	✓			1
-1SPK		↓		✓			1
-101SPK		↓		✓			1
-2		M16L		✓			1
-3		M9 S		✓			1
-4		M34BF		✓			1
-5		M34BF		✓			L
-6		M19 I		✓			1
-7		M20 D		✓			1
-8		M31UBF		✓			1
-9	✓	M17UBF	↓	✓			1
6-67-254-1	LOCKHEED, RY	TH INFLUENT	AQ	✓			1
-2	↓	TH EFFLUENT	↓	✓			1
6-67-192-1	FLAGSTAFF	WCH EFF.	WW	✓			6
6-67-204-1	↓	WCH INF.	↓	✓			4
6-67-193-7						(61) 07-12-96	
6-67-252-1	BENDIX, SYLMR	SAMPLE PT. #1	WW	✓			1
-2		SAMPLE PT. #2	↓	✓			1
-3		SAMPLE PT. #3	↓	✓			1
-4	✓	SAMPLE PT. #4	↓	✓			

To Page No. 1

Witnessed & Understood by me, _____

Date _____

Invented by _____

Date _____

Recorded by _____

002862

Raw Data for Metals

METALS ICP REPORT

Start date analyzed: 07/11/96

Run number: F1931ET

SOP NUMBER: ME00288.G

Equip number: 535-03

Analyst initials: ET

Batch numbers:

961573

STANDARD REFERENCE DOCUMENTATION:

NAME	NUMBER	EXP DATE
ETPQL	ME9604013	04/05/97
ETLOW	ME9604012	04/05/97
ETHIGH	ME9604011	04/05/97
LR	ME9511030	11/13/96
ICV	ME9604011	04/05/97
CCV	ME9604014	04/05/97
ICSA	ME9510008	10/18/96
ETAFPQL	ME9607007	07/02/97
ICSAB	ME9510007	10/18/96

COMMENTS:

Analyst: ET 7/11

Reviewed & Approved: 7/12/96 gw

002864

Element: CA

Run #: F1931ET

Standard Name	Date	Time	Response	Std Conc	
BLANK	07/11/96	20:22	0	0	Autozero
STD-ETHIGH	07/11/96	20:25			
STD-LR	07/11/96	20:28	285.50952	300	R = 1.00000

Sample ID	Date	Time	Dil	Wt	Vol	Read	Reported	Rec	Criteria	RPD	Criteria	Fl
ICV	07/11/96	20:31	1.0			101.56239	102	<u>102</u>	95 - 105			
CCV	07/11/96	20:34	1.0			52.37336	52.4	<u>105</u>	90 - 110			
IC8	07/11/96	20:38	1.0			-0.01479	<0.5		-0.01223 +/-		0.01323	
ICSAI	07/11/96	20:41	1.0			470.87823	471					
ICSA8I	07/11/96	20:44	1.0			473.68197	474	95	80 - 120			
ETPQL+	07/11/96	20:47	1.0			2.18015	2.2					
M8W-961573	07/11/96	20:50	1.0			-0.01377	0					
9607190*1*L	07/11/96	20:53	5.0			17.01330	85		11.2		10	
9607190*1*R1	07/11/96	20:56	1.0			76.07299	76					
9607190*1*S1	07/11/96	20:59	1.0			131.23332	131	110	73 - 122			
9607190*1*S2	07/11/96	21:02	1.0			128.91009	129	106	73 - 122	1.8	20	
9607190*1*T							126					
9607191*1	07/11/96	21:05	1.0			69.66291	70					
9607191*2	07/11/96	21:08	1.0			118.11493	120					
9607191*3	07/11/96	21:11	1.0			43.74862	44					
CCV1	07/11/96	21:15	1.0			52.29597	52.3	<u>105</u>	90 - 110			
CC81	07/11/96	21:18	1.0			-0.01018	<0.5		-0.01223 +/-		0.01323	
9607191*4	07/11/96	21:21	1.0			109.73718	110					
9607209*1	07/11/96	21:24	1.0			18.58179	19					
9607209*2	07/11/96	21:27	1.0			15.20070	15					
9607209*3	07/11/96	21:30	1.0			15.93925	16					
9607213*4	07/11/96	21:33	1.0			13.86758	14					
9607213*5	07/11/96	21:36	1.0			13.85620	14					
9607213*6	07/11/96	21:39	1.0			0.16509	<0.5					
9607215*1	07/11/96	21:42	1.0			179.81881	180					
9607215*2	07/11/96	21:45	1.0			100.31083	100					
CCV2	07/11/96	21:49	1.0			52.25190	52.3	<u>105</u>	90 - 110			
CC82	07/11/96	21:52	1.0			-0.01684	<0.5		-0.01223 +/-		0.01323	
9607215*3	07/11/96	21:55	1.0			138.57182	140					
9607216*1	07/11/96	21:58	1.0			46.41380	46					
9607217*1	07/11/96	22:01	1.0			13.77838	14					
9607218*1	07/11/96	22:04	1.0			237.08599	240					
9607218*2	07/11/96	22:07	1.0			251.16224	250					
9607220*1	07/11/96	22:10	1.0			14.96027	15					
LCH-961573	07/11/96	22:13	1.0			53.57264	53.6	107	85 - 116			
LT-961573							50.0					
LCWD-961573	07/11/96	22:16	1.0			53.06071	53.1	106	85 - 116	1.0	20	
LT-961573							50.0					
ICSAF	07/11/96	22:19	1.0			468.96051	469					
ICSABF	07/11/96	22:22	1.0			473.81103	474	95	80 - 120			
ETPQL+	07/11/96	22:25	1.0			2.20987	2.2					
CCV3	07/11/96	22:28	1.0			51.54983	51.5	<u>103</u>	90 - 110			
CC83	07/11/96	22:31	1.0			-0.00710	<0.5		-0.01223 +/-		0.01323	

NO SW?
 correct
 action

002865

Element: K

Run #: F1931ET

Standard Name	Date	Time	Response		Std Conc	F					
BLANK	07/11/96	20:22	0		0						
STD-ETHIGH	07/11/96	20:25				Autozero					
STD-LR	07/11/96	20:28	40.86249		300	R = 1.00000					
Sample ID	Date	Time	Dil	Wt	Vol	Read	Reported	Rec	Criteria	RPD	Criteria Fla
ICV	07/11/96	20:31	1.0			100.90316	101	101	95 - 105		
CCV	07/11/96	20:34	1.0			50.03990	50.0	100	90 - 110		
ICB	07/11/96	20:38	1.0			0.04706	<0.5		0.05898 +/-	0.03523	
ICSAI	07/11/96	20:41	1.0			-0.27531	<0.5				
ICSABI	07/11/96	20:44	1.0			4.93311	4.93	99	80 - 120		
ETPQL+	07/11/96	20:47	1.0			2.06038	2.1				
M8W-961573	07/11/96	20:50	1.0			0.08008	0.08				
9607190*1*L	07/11/96	20:53	5.0			0.64388	3.2			12.7	
9607190*1*R1	07/11/96	20:56	1.0			2.83565	2.8				
9607190*1*S1	07/11/96	20:59	1.0			13.24190	13.2	104	79 - 111		
9607190*1*S2	07/11/96	21:02	1.0			12.98943	13.0	102	79 - 111	1.9	20
9607190*1*T							12.8				
9607191*1	07/11/96	21:05	1.0			16.80360	17				
9607191*2	07/11/96	21:08	1.0			4.66543	4.7				
9607191*3	07/11/96	21:11	1.0			14.05214	14				
CCV1	07/11/96	21:15	1.0			49.76478	49.8	100	90 - 110		
CCB1	07/11/96	21:18	1.0			0.06907	<0.5		0.05898 +/-	0.03523	
9607191*4	07/11/96	21:21	1.0			4.59075	4.6				
9607209*1	07/11/96	21:24	1.0			7.11474	7.1				
9607209*2	07/11/96	21:27	1.0			7.08269	7.1				
9607209*3	07/11/96	21:30	1.0			6.97608	7.0				
9607213*4	07/11/96	21:33	1.0			152.37905	150				
9607213*5	07/11/96	21:36	1.0			153.29620	150				
9607213*6	07/11/96	21:39	1.0			0.03234	<0.5				
9607215*1	07/11/96	21:42	1.0			4.96352	5.0				
9607215*2	07/11/96	21:45	1.0			4.19714	4.2				
CCV2	07/11/96	21:49	1.0			49.33925	49.3	99	90 - 110		
CCB2	07/11/96	21:52	1.0			0.05073	<0.5		0.05898 +/-	0.03523	
9607215*3	07/11/96	21:55	1.0			4.72203	4.7				
9607216*1	07/11/96	21:58	1.0			1.96357	2.0				
9607217*1	07/11/96	22:01	1.0			1.48849	1.5				
9607218*1	07/11/96	22:04	1.0			631.77868	630				
9607218*2	07/11/96	22:07	1.0			569.03222	570				
9607220*1	07/11/96	22:10	1.0			1.78508	1.8				
LCW-961573	07/11/96	22:13	1.0			50.65004	50.7	101	81 - 120		
LT-961573							50.0				
LCWD-961573	07/11/96	22:16	1.0			49.20479	49.2	98	81 - 120	2.9	20
LT-961573							50.0				
ICSAF	07/11/96	22:19	1.0			-0.16315	<0.5				
ICSABF	07/11/96	22:22	1.0			4.83071	4.83	97	80 - 120		
ETPQL+	07/11/96	22:25	1.0			1.95765	2.0				
CCV3	07/11/96	22:28	1.0			47.73267	47.7	95	90 - 110		
CCB3	07/11/96	22:31	1.0			0.06907	<0.5		0.05898 +/-	0.03523	

002866

Element: MG

Run #: F1931E7

Standard Name	Date	Time	Response	Std Conc	
BLANK	07/11/96	20:22	0	0	
STD-ETHIGH	07/11/96	20:25			Autozero
STD-LR	07/11/96	20:28	195.58650	300	R = 1.00000

Sample ID	Date	Time	Dil	Wt	Vol	Read	Reported	Rec	Criteria	RPD	Criteria F
ICV	07/11/96	20:31	1.0			104.28344	104	<u>104</u>	95 - 105		
CCV	07/11/96	20:34	1.0			52.55589	52.6	<u>105</u>	90 - 110		
ICB	07/11/96	20:38	1.0			0.00329	<0.1		0.00090 +/-	0.00758	
ICSAI	07/11/96	20:41	1.0			491.69915	492				
ICSABI	07/11/96	20:44	1.0			489.48779	489	98	80 - 120		
ETPQL+	07/11/96	20:47	1.0			2.17947	2.2				
MBW-961573	07/11/96	20:50	1.0			-0.00298	0				
9607190*1*L	07/11/96	20:53	5.0			3.71250	19		10.8	10	
9607190*1*R1	07/11/96	20:56	1.0			16.66769	17				
9607190*1*S1	07/11/96	20:59	1.0			69.79822	69.8	106	78 - 112		
9607190*1*S2	07/11/96	21:02	1.0			68.77106	68.8	104	78 - 112	1.5	20
9607190*1*T							66.7				
9607191*1	07/11/96	21:05	1.0			14.67195	15				
9607191*2	07/11/96	21:08	1.0			25.00949	25				
9607191*3	07/11/96	21:11	1.0			9.33382	9.3				
CCV1	07/11/96	21:15	1.0			52.52189	52.5	<u>105</u>	90 - 110		
CCB1	07/11/96	21:18	1.0			0.00254	<0.1		0.00090 +/-	0.00758	
9607191*4	07/11/96	21:21	1.0			23.55069	24				
9607209*1	07/11/96	21:24	1.0			7.53920	7.5				
9607209*2	07/11/96	21:27	1.0			6.43573	6.4				
9607209*3	07/11/96	21:30	1.0			6.64202	6.6				
9607213*4	07/11/96	21:33	1.0			113.36514	110				
9607213*5	07/11/96	21:36	1.0			114.29948	110				
9607213*6	07/11/96	21:39	1.0			0.03965	<0.1				
9607215*1	07/11/96	21:42	1.0			37.81548	38				
9607215*2	07/11/96	21:45	1.0			21.24471	21				
CCV2	07/11/96	21:49	1.0			52.43838	52.4	<u>105</u>	90 - 110		
CCB2	07/11/96	21:52	1.0			-0.00226	<0.1		0.00090 +/-	0.00758	
9607215*3	07/11/96	21:55	1.0			29.54774	30				
9607216*1	07/11/96	21:58	1.0			9.45191	9.5				
9607217*1	07/11/96	22:01	1.0			6.53282	6.5				
9607218*1	07/11/96	22:04	1.0			499.06863	500				
9607218*2	07/11/96	22:07	1.0			389.00811	390				
9607220*1	07/11/96	22:10	1.0			6.70798	6.7				
LCH-961573	07/11/96	22:13	1.0			52.26463	52.3	105	81 - 120		
LT-961573							50.0				
LCWD-961573	07/11/96	22:16	1.0			51.36985	51.4	103	81 - 120	1.7	20
LT-961573							50.0				
ICSAF	07/11/96	22:19	1.0			488.95745	489				
ICSABF	07/11/96	22:22	1.0			489.07739	489	98	80 - 120		
ETPQL+	07/11/96	22:25	1.0			2.17225	2.2				
CCV3	07/11/96	22:28	1.0			51.45675	51.5	<u>103</u>	90 - 110		
CCB3	07/11/96	22:31	1.0			0.00004	<0.1		0.00090 +/-	0.00758	

NO SW
CORRE
ACT

002867

Element : NA

Run # : F1931ET

Standard Name	Date	Time	Response	Std Conc	F
BLANK	07/11/96	20:22	0	0	
STD-ETHIGH	07/11/96	20:25			Autozero
STD-LR	07/11/96	20:28	219.99349	300	R = 1.00000

Sample ID	Date	Time	Dil	Ht	Vol	Read	Reported	Rec	Criteria	RPD	Criteria Fl
ICV	07/11/96	20:31	1.0			101.02386	101				
CCV	07/11/96	20:34	1.0			50.47805	50.5				
ICB	07/11/96	20:38	1.0			0.01640	<0.5				
ICSAI	07/11/96	20:41	1.0			0.01029	<0.5				
ICSABI	07/11/96	20:44	1.0			5.24279	5.24				
ETPQL+	07/11/96	20:47	1.0			2.04331	2.0				
MBW-961573	07/11/96	20:50	1.0			0.01708	0				
9607190*1*L	07/11/96	20:53	5.0			3.45746	17				
9607190*1*R1	07/11/96	20:56	1.0			15.93648	16				8.1
9607190*1*S1	07/11/96	20:59	1.0			68.49086	68.5				
9607190*1*S2	07/11/96	21:02	1.0			67.12353	67.1				
9607190*1*T							65.9				
9607191*1	07/11/96	21:05	1.0			18.65486	19				
9607191*2	07/11/96	21:08	1.0			24.97919	25				
9607191*3	07/11/96	21:11	1.0			16.45627	16				
CCV1	07/11/96	21:15	1.0			50.49163	50.5				
CCB1	07/11/96	21:18	1.0			0.02929	<0.5				
9607191*4	07/11/96	21:21	1.0			26.81949	27				
9607209*1	07/11/96	21:24	1.0			65.62795	66				
9607209*2	07/11/96	21:27	1.0			74.03076	74				
9607209*3	07/11/96	21:30	1.0			77.33611	77				
9607213*4	07/11/96	21:33	1.0			841.17492	840				
9607213*5	07/11/96	21:36	1.0			846.51599	850				
9607213*6	07/11/96	21:39	1.0			0.21386	<0.5				
9607215*1	07/11/96	21:42	1.0			30.12687	30				
9607215*2	07/11/96	21:45	1.0			25.13594	25				
CCV2	07/11/96	21:49	1.0			50.06683	50.1				
CCB2	07/11/96	21:52	1.0			0.04422	<0.5				
9607215*3	07/11/96	21:55	1.0			27.30738	27				
9607216*1	07/11/96	21:58	1.0			12.40177	12				
9607217*1	07/11/96	22:01	1.0			27.78510	28				
9607218*1	07/11/96	22:04	1.0			10840.87402	11000				
9607218*2	07/11/96	22:07	1.0			10841.81640	11000				
9607220*1	07/11/96	22:10	1.0			79.01016	79				
LCH-961573	07/11/96	22:13	1.0			52.58028	52.6				
LT-961573							50.0				
LCHD-961573	07/11/96	22:16	1.0			50.81530	50.8				
LT-961573							50.0				
ICSAF	07/11/96	22:19	1.0			0.09579	<0.5				
ICSABF	07/11/96	22:22	1.0			5.26858	5.27				
ETPQL+	07/11/96	22:25	1.0			2.04127	2.0				
CCV3	07/11/96	22:28	1.0			48.71308	48.7				
CCB3	07/11/96	22:31	1.0			0.08358	<0.5				

002868

**RESULTS OF GROUNDWATER MONITORING
FIRST AND SECOND QUARTERS 1996
AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

VOLUME I

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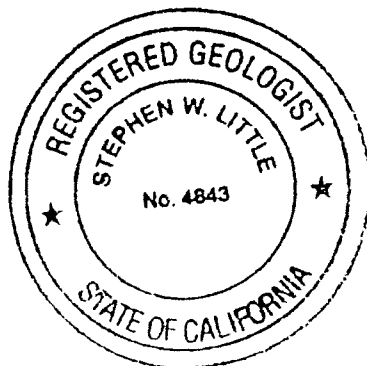
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**RESULTS OF GROUNDWATER MONITORING
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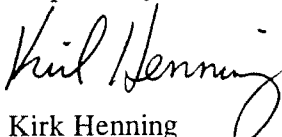
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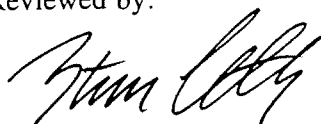
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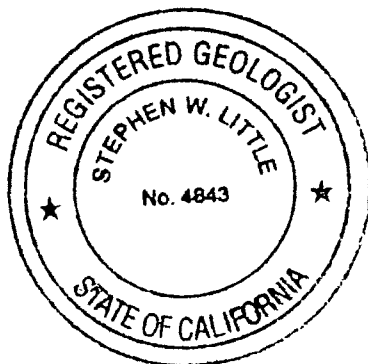
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1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the first and second quarters of 1996 was conducted at the AlliedSignal Aerospace property at 11600 Sherman Way in North Hollywood, California (the Site) on April 22-25 and July 8-10, 1996, respectively. Groundwater monitoring was conducted in accordance with the California Regional Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. Three on-site groundwater monitoring wells (GW-1 through GW-3) and four off-site groundwater monitoring wells (GW-7 through GW-10) were sampled during the two monitoring events. Groundwater elevations were also measured in three groundwater monitoring well (GW-4 through GW-6) located on the adjacent Home Depot property.

During the period between December 18, 1995 and April 22, 1996, groundwater levels increased between 3.44 feet (well GW-6) and 6.43 feet (well GW-9). The instantaneous groundwater flow direction beneath the Site, the Kaiser Permanente property and the Home Depot property was southeasterly, based on the April 22, 1996 measurements. During the period between April 22 and July 8, 1996, groundwater levels declined between 3.10 feet (well GW-6) and 8.86 feet (well GW-10). The instantaneous groundwater flow direction beneath the Site and the Kaiser Permanente property was southwesterly, based on the July 8, 1996 measurements. Beneath the Home Depot property, the instantaneous groundwater flow direction was south/southeasterly based on the July 8, 1996 measurements.

Consistent with regional data, nitrate was detected in the first quarter 1996 groundwater samples collected from groundwater monitoring wells GW-7, GW-8 and GW-9 and in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-2, GW-7 and GW-9 at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL). Trichloroethene (TCE) was detected in the first quarter 1996 groundwater samples obtained from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 and in the second quarter 1996 groundwater samples collected from all seven groundwater monitoring wells at concentrations above the MCL. Tetrachloroethene (PCE) was detected in the first quarter 1996 groundwater samples obtained from groundwater monitoring wells GW-2 and GW-9 and in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-7 through GW-10 at concentrations above the MCL. The compounds benzene and 1,2-dichloroethane (1,2-DCA) were detected in the second quarter 1996 groundwater samples collected from groundwater monitoring well GW-10 at concentrations above their respective MCLs. The compounds 1,1-dichloroethane (1,1-DCA), chloroform and cis-1,2-dichloroethene (cis-1,2-DCE) were detected in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 at concentrations above their respective MCLs. The compound 1,1-dichloroethene (1,1-DCE) was detected in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-1, GW-7 and GW-10 at concentrations above the MCL. Carbon tetrachloride (CT) was detected in the first quarter 1996 groundwater sample collected from groundwater monitoring well GW-7 and in the second quarter 1996 samples collected from

groundwater monitoring wells GW-1 through GW-3, and GW-8 through GW-10 at concentrations above the MCL. All other Volatile Organic Compounds (VOCs) detected in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 during the first and second quarter 1996 sampling events were present at concentrations below their respective MCLs.

During the last twelve sampling events, concentrations of TCE in groundwater generally have fluctuated with overall increasing trends in concentrations observed in groundwater samples collected from groundwater monitoring wells GW-7 through GW-10. For example, TCE concentrations increased from November 1993 to February 1994, but subsequently decreased in several of the groundwater monitoring wells between February/March 1994 and May 1994. TCE concentrations again increased in all the groundwater monitoring wells (GW-1 through GW-3 and GW-7 through GW-10) between May 1994 and August/September 1994 and then decreased in the wells between August/September 1994 and November/December 1994. TCE concentrations increased in groundwater samples from all the groundwater monitoring wells between November/December 1994 and March 1995 and then decreased between March and September 1995. For example, the TCE concentrations detected in groundwater samples from groundwater monitoring wells GW-1, GW-2, and GW-7 through GW-10 increased between one and two orders of magnitude from the November 1993 to the February 1994 sampling event, whereas the TCE concentrations in samples from groundwater monitoring well GW-3 remained consistent during this period. However, the TCE concentrations detected in groundwater samples from all seven groundwater monitoring wells decreased as much as two orders of magnitude from the February/March 1994 sampling episode to the May 1994 sampling event. The concentrations of TCE detected in groundwater samples from all seven groundwater monitoring wells increased as much as three orders of magnitude from the May 1994 monitoring event to the August/September 1994 sampling episode. The concentrations of TCE detected in groundwater samples from groundwater monitoring wells GW-2, GW-3 and GW-8 through GW-10 decreased as much as two orders of magnitude from the August/September 1994 monitoring event to the November/December 1994 sampling episode, whereas the TCE concentration in groundwater samples from monitoring well GW-7 increased one order of magnitude during the same period.

The concentrations of TCE detected in groundwater samples from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 increased by two orders of magnitude from the November/December 1994 monitoring episode to the March 1995 sampling event. The concentrations of TCE detected in groundwater samples from monitoring wells GW-2, GW-3 and GW-7 through GW-10 decreased as much as two orders of magnitude from the March 1995 to the September 1995 monitoring episodes.

The concentrations of TCE decreased in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 and increased in groundwater samples collected from groundwater monitoring wells GW-8 through GW-10 from September 1995 to November 1995. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring well GW-1 decreased from 6,400 $\mu\text{g}/\ell$ in November 1994 to 7.0 $\mu\text{g}/\ell$ in November 1995. The concentrations of TCE

detected in groundwater samples collected from all seven groundwater monitoring wells increased up to two orders of magnitude from November 1995 to December 1995. For example, the concentration of TCE detected in groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 increased from 27 $\mu\text{g}/\ell$ and 30 $\mu\text{g}/\ell$, respectively, during November 1995 sampling event to 2,400 $\mu\text{g}/\ell$ and 3,200 $\mu\text{g}/\ell$ during the December 1995 sampling event. TCE concentrations decreased as much as two orders of magnitude in the groundwater samples from all seven groundwater samples between the December 1995 and April 1996 sampling events, and then increased up to three orders of magnitude between the April 1996 and July 1996 sampling events. An increasing trend in TCE concentrations previously observed in the groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 can now be observed in groundwater samples collected from monitoring wells GW-8 and GW-9. This may be the result of continued movement of the off-site TCE plume caused by pumping from production wells in the Rinaldi-Toluca, Tujunga and west North Hollywood well fields.

2.0 INTRODUCTION

On behalf of AlliedSignal Aerospace, *SECOR* International Incorporated (*SECOR*) has prepared this report presenting the results of groundwater monitoring conducted by *SECOR* in April and July 1996 at the AlliedSignal Aerospace property located at 11600 Sherman Way in North Hollywood, California (see Figure 1). Groundwater monitoring and sampling of groundwater monitoring wells GW-1 through GW-3 at the Site and groundwater monitoring wells GW-7 through GW-10 at the adjacent Kaiser Permanente property (see Figure 2) was conducted in accordance with the RWQCB WIP guidelines.

Groundwater monitoring activities commenced at the Site with the installation of a two-level groundwater monitoring well, W-1, in 1987. After two monitoring events were conducted, well W-1 was abandoned at the request of the RWQCB. Well W-1 was formerly located near the southwestern corner of the AlliedSignal property and was abandoned by *SECOR* in June 1993 in accordance with a workplan approved by the RWQCB. Volatile Organic Compound (VOC) analytical results obtained from groundwater monitoring well W-1 in May and June 1987 are presented in Table 13.

Quarterly groundwater monitoring at the Site has been conducted regularly since the first quarter of 1991. Historical groundwater elevations and analytical results from the most recent and previous groundwater monitoring events are presented in Tables 5 through 20 and Figures 7 through 49.

3.0 GROUNDWATER LEVEL MEASUREMENTS

During the first and second quarters of 1996, depth to groundwater was measured in three on-site groundwater monitoring wells (GW-1 through GW-3) and seven off-site groundwater monitoring wells (GW-4 through GW-10) on April 22 and July 8, 1996, respectively. An Environmental Instruments Company (EI) water level meter was used to measure the depth to groundwater in the wells according to the protocol described in Appendix A. Water level data obtained on April 22 and July 8, 1996 are summarized in Table 1.

The data indicate that groundwater levels increased in groundwater monitoring wells GW-1 through GW-10 between 3.44 feet (well GW-6) and 6.43 feet (well GW-9) from November 19, 1995 to April 22, 1996. Between April 22 and July 8, 1996, groundwater levels decreased in all ten groundwater monitoring wells between 3.10 feet (well GW-6) and 8.86 feet (well GW-10). Historic groundwater elevations are presented in Table 5.

Based on water level measurements obtained on April 22, 1996, the instantaneous groundwater flow direction was southeasterly at a gradient of 0.0018 beneath the Site and the Kaiser Permanente property, and southeasterly at a gradient of 0.0043 beneath the Home Depot property. Based on water level measurements obtained on July 8, 1996, the instantaneous groundwater flow direction was southwesterly at a gradient of 0.0091 beneath the Site and the Kaiser Permanente property, and south/southeasterly at a gradient of 0.0063 beneath the Home Depot property. Figures 3 and 4 present the groundwater elevation contour maps based on the April 22 and July 8, 1996 groundwater surface elevations.

The groundwater flow direction beneath, and in the vicinity of the Site, appears to be strongly influenced by groundwater extraction from aeration wells and from supply wells in the North Hollywood and Rinaldi-Toluca well fields located south and northwest of the Site, respectively (Remedial Investigation Report for Groundwater Contamination in the San Fernando Valley - Volume 1, James M. Montgomery, December 1992). Although groundwater elevation contour maps have been prepared based on groundwater elevations measured at the Site, the calculated groundwater flow direction(s) are only representative of the instantaneous groundwater flow direction, due to the influence of regional pumping. Under transient conditions, groundwater pathlines and streamlines are not coincidental.

4.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 were purged with a submersible electric pump and sampled with disposable polypropylene bailers on April 23-25 and July 9-10, 1996 according to the protocol described in Appendix A.

All groundwater analyses were conducted by BC Analytical (BCA) in Glendale, California. For Quality Assurance/Quality Control (QA/QC) purposes, field blank, equipment blank and trip blank samples for each sampling event were collected on April 24 and July 10, 1996. The groundwater samples obtained from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 on April 23-25 and July 9-10, 1996 were delivered to BCA in Glendale and analyzed for the following:

- Method 524.2 - Volatile Organics Compounds;
- Method 8015M - Total Petroleum Hydrocarbons, as Diesel or Gasoline;
- Method 300.0-L - Sulfates, Chlorides;
- Method 310.1-L - Alkalinity - total, hydroxyl, carbonate, and bicarbonate;
- Method 6010-L - Calcium, Magnesium, Potassium, Sodium;
- Method 160.1 and 180.1 - Total Dissolved Solids and Turbidity;
- Method 300.0-N - Nitrate; and
- Method 350.1-L - Ammonia Nitrogen

All samples were immediately placed on ice following collection. Individual samples were collected in pre-cleaned, analysis-specific containers supplied by the laboratory with the appropriate preservative and clearly marked and dated for identification. Samples were securely packed and delivered to the laboratory within 24 hours of collection via courier. All samples were preserved and stored for analysis no longer than the maximum allowable holding time. The following table presents the appropriate sample containers, holding time, container size and preservative for each analytical method used in this project.

TABLE 4.1 - SAMPLING GUIDE			
ANALYSIS	HOLDING TIME	CONTAINER SIZE	PRESERVATIVE
Volatile Organics Compounds EPA Test Method 524.2	14 days	2-40 ml (glass) with septum	Cool, HCL No headspace
Total Petroleum Hydrocarbons EPA Test Method 8015M	14 days	4 oz (amber glass) with septum	Cool, HCL No headspace
Sulfates & Chlorides EPA Test Method 300.0 L	28 days	4 oz (plastic)	Cool
Alkalinity (total, hydroxyl, carbonate, bicarbonate) EPA Test Method 310.1 L	14 Days	4 oz (plastic)	Cool
Calcium, Magnesium, Potassium, Sodium EPA Test Method 6010 L	6 months	16 oz (plastic)	Cool, HNO ₃
Total Dissolved Solids EPA Test Method 160.1	7 days	16 oz (plastic)	Cool
Turbidity EPA Test Method 180.1	2 days	4 oz (plastic)	Cool
Nitrate EPA Test Method 300.0 N	48 hours	4 oz (plastic)	Cool
Ammonia Nitrogen EPA Test Method 350.1L	28 days	4 oz (plastic)	Cool, H ₂ SO ₄

Note:

oz	- ounce
ml	- milliliter
HCL	- Hydrochloric Acid
HNO ₃	- Nitric Acid
H ₂ SO ₄	- Sulfuric Acid

Laboratory reports and chain-of-custody documents for both groundwater monitoring events are presented in Appendices B and C, respectively.

5.0 DATA QUALITY ASSURANCE/QUALITY CONTROL

BCA performed all the laboratory analyses for the first and second quarters of 1996. BCA followed the details of the data reporting process outlined in the Laboratory Requirements for Data Validation (EPA Document Control Number 9QA-07-90) and the RWQCB Quality Assurance/Quality Control Guidance Document for Well Investigation Program - San Gabriel and San Fernando Basins. None of the groundwater samples collected were diluted prior to analysis, with the exception of the sample collected from groundwater monitoring well GW-7 which had a dilution factor of 20. Low level results for groundwater monitoring well GW-7 could not be determined because of extremely high VOC concentrations in the sample.

Field blank, equipment blank and trip blank samples were analyzed along with the groundwater samples collected on April 23-25 and July 9-10, 1996. The field blank and equipment blank samples were used to demonstrate that ambient conditions, the sample container and the sampling procedures were not contaminating the sample. For the field blanks, laboratory-grade water supplied by BCA was decanted into sample containers adjacent to the well being sampled. For the bailer equipment blanks, laboratory-grade water was transported to one of the groundwater monitoring wells and a sample of the laboratory-grade water was prepared using one of the sample bailers. For the pump equipment blanks, distilled water supplied by a water distributor was passed through the pump and hose after decontamination, and then collected in sample containers. Trip blanks, supplied by BCA, were used to provide a measure of the positive interferences introduced by the sample preservation, transportation, storage, and analysis. Case summaries describing the data quality assurance/quality control (QA/QC) are presented in Volume II, Appendix B for the first quarter 1996, and Volume III, Appendix B for the second quarter 1996.

No VOCs were detected in the field blank or the trip blank samples collected on April 24, 1996. The compound toluene was detected at a concentration of 0.79 micrograms per liter ($\mu\text{g}/\text{l}$) in the first quarter 1996 equipment blank sample collected from the bailer. The compounds bromodichloromethane, chloroform, TCE, toluene, PCE and p-isopropyl toluene were detected at concentrations of 0.61 $\mu\text{g}/\text{l}$, 1.6 $\mu\text{g}/\text{l}$, 0.61 $\mu\text{g}/\text{l}$, 27 $\mu\text{g}/\text{l}$, 0.65 $\mu\text{g}/\text{l}$ and 4.3 $\mu\text{g}/\text{l}$, respectively, in the first quarter 1996 equipment blank collected from the pump.

No VOCs were detected in the field blank or the bailer equipment blank samples collected on July 10, 1996. The compound trichlorofluoromethane was detected at a concentration of 1.5 $\mu\text{g}/\text{l}$ in the second quarter 1996 trip blank sample. The compounds chloroform, naphthalene, TCE, toluene, PCE, and cis-1,2-DCE were detected in the second quarter 1996 pump equipment blank sample at concentrations of 1.4 $\mu\text{g}/\text{l}$, 0.66 $\mu\text{g}/\text{l}$, 1.2 $\mu\text{g}/\text{l}$, 43 $\mu\text{g}/\text{l}$, 1.4 $\mu\text{g}/\text{l}$ and 1.0 $\mu\text{g}/\text{l}$, respectively.

6.0 GROUNDWATER ANALYTICAL RESULTS

6.1 INORGANIC COMPOUNDS

Chloride, sulfate, alkalinity, calcium, magnesium, potassium, sodium, TDS, turbidity and nitrate were detected in groundwater samples collected from all seven groundwater monitoring wells (GW-1 through GW-3 and GW-7 through GW-10) sampled during the first and second quarter 1996 sampling events. The following table presents the low and high concentration of each inorganic constituent (except ammonia nitrogen) detected in the first and second quarter 1996 groundwater samples and the corresponding groundwater monitoring well in which these values were measured:

TABLE 6.1 - INORGANIC COMPOUNDS DETECTED (all results in milligrams per liter, except turbidity)				
Constituent	First Quarter Low	First Quarter High	Second Quarter Low	Second Quarter High
Chloride	19 (GW-1)	32 (GW-9)	13 (GW-3)	38 (GW-2)
Sulfate	33 (GW-2, GW-3)	61 (GW-8, GW-9)	24 (GW-3)	120 (GW-7)
Total Alkalinity	170 (GW-1)	250 (GW-7, GW-8)	120 (GW-3)	430 (GW-7)
Calcium	52 (GW-3)	110 (GW-8)	44 (GW-3)	180 (GW-7)
Magnesium	11 (GW-3)	25 (GW-8)	9.3 (GW-3)	38 (GW-7)
Potassium	1.9 (GW-3)	8.8 (GW-2)	4.2 (GW-8)	17 (GW-1)
Sodium	10 (GW-3)	27 (GW-7, GW-8, GW-9)	16 (GW-3)	30 (GW-7)
TDS	280 (GW-2)	440 (GW-8)	230 (GW-3)	720 (GW-7)
Turbidity*	2.1 (GW-9)	26 (GW-8)	0.9 (GW-10)	24 (GW-8)
Nitrate	28 (GW-1)	56 (GW-7)	35 (GW-3, GW-10)	80 (GW-7)

* Turbidity measured in Nephelometric Turbidity Units.

Ammonia nitrogen was detected at a concentration of 0.12 milligrams per liter (mg/l) in the groundwater sample collected from groundwater monitoring well GW-1 during the first quarter of 1996 and at 0.17 mg/l in the groundwater sample collected from GW-3 during the second quarter of 1996.

During the first and second quarters 1996, sodium was detected in samples from all seven groundwater monitoring wells at concentrations above the EPA Suggested No-Adverse-Response Level (SNARL) of 2 mg/l. SNARLs are human health-related criteria that are published by the National Academy of Sciences. The turbidity levels detected in the first quarter 1996 groundwater samples collected from groundwater monitoring wells GW-1 through GW-3 and GW-8, and in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-1, GW-3 and GW-8, were above the DHS Secondary MCL of 5 Nephelometric Turbidity Units (NTU). Primary MCLs include a potential of health risk, whereas, secondary MCLs are derived from human welfare considerations (usually taste and odor) and do not include a consideration of health risk. The concentrations of nitrate detected in the first quarter 1996 groundwater samples collected from groundwater monitoring wells GW-7, GW-8 and GW-9 and in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-2, GW-7 and GW-9 were above the MCL of 45 mg/l.

Inorganic compound analytical results for the first and second quarter 1996 monitoring events are presented in Table 2. Historic inorganic compound analytical results are presented in Tables 6 through 12. Please note that nitrate values reported prior to January 1993 were quantified as nitrate as N, whereas recent data are reported as nitrate as NO₃ in accordance with the Sampling and Analysis Plan approved by the RWQCB. Nitrate concentrations detected during the first and second quarter 1996 monitoring events are shown on Figure 5 and Figure 6, respectively.

6.2 VOLATILE ORGANIC COMPOUNDS

6.2.1 Groundwater Sample Results (April 23-25, 1996)

TCE was detected at concentrations ranging from 6.7 µg/l (well GW-2) to 48 µg/l (well GW-10) in the groundwater samples collected during the first quarter 1996 from the seven groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10. The highest concentration of TCE was detected in groundwater samples obtained from groundwater monitoring well GW-10 located in the southern portion of the Kaiser property. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 were above the MCL of 5 µg/l.

PCE was detected at concentrations ranging from 1.2 µg/l (well GW-7) to 5.2 µg/l (well GW-9) in the groundwater samples obtained from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 during the first quarter 1996. The concentrations of PCE detected in the groundwater samples obtained from groundwater monitoring wells GW-2 and GW-9 were equal to or above the MCL of 5 µg/l.

The compound 1,1,1-Trichloroethane (1,1,1-TCA) was detected at a concentration of 0.54 µg/l in the first quarter 1996 groundwater sample obtained from groundwater monitoring well GW-7. 1,1,1-TCA was not detected above a detection limit of 0.5 µg/l in the groundwater samples collected from the six

other wells. The concentration of 1,1,1-TCA detected in groundwater sample obtained from groundwater monitoring well GW-7 was below the MCL of 200 $\mu\text{g}/\ell$.

The compound 1,1-DCA was detected at concentrations of 0.71 $\mu\text{g}/\ell$ and 0.63 $\mu\text{g}/\ell$ in the first quarter 1996 groundwater samples collected from groundwater monitoring wells GW-2 and GW-3, respectively. 1,1-DCA was not detected in the groundwater samples collected from the other five wells above a detection limit of 0.5 $\mu\text{g}/\ell$. The concentrations of 1,1-DCA detected in the groundwater samples obtained from groundwater monitoring wells GW-2 and GW-3 were below the MCL of 5 $\mu\text{g}/\ell$.

The compound 1,1-DCE was detected at a concentration of 0.80 $\mu\text{g}/\ell$ in the first quarter 1996 groundwater sample obtained from groundwater monitoring well GW-7. 1,1-DCE was not detected in the groundwater samples from the other six groundwater monitoring wells above a detection limit of 0.5 $\mu\text{g}/\ell$. The concentration of 1,1-DCE detected in the groundwater sample obtained from groundwater monitoring well GW-7 was below the MCL of 6 $\mu\text{g}/\ell$.

Carbon Tetrachloride (CT) was detected at a concentration of 0.89 $\mu\text{g}/\ell$ in the first quarter 1996 groundwater sample collected from groundwater monitoring well GW-7. CT was not detected above a detection limit of 0.5 $\mu\text{g}/\ell$ in the groundwater samples from the other six groundwater monitoring wells. The concentration of CT detected in the groundwater sample collected from groundwater monitoring well GW-7 was above the MCL of 0.5 $\mu\text{g}/\ell$.

Chloroform was detected at concentrations ranging from 0.50 $\mu\text{g}/\ell$ (well GW-9) to 0.71 $\mu\text{g}/\ell$ (well GW-7) in the first quarter 1996 groundwater samples obtained from groundwater monitoring wells GW-7, GW-9 and GW-10. Chloroform was not detected in the groundwater samples from the other four groundwater monitoring wells above a detection limit of 0.5 $\mu\text{g}/\ell$. The concentrations of chloroform detected were below the MCL of 100 $\mu\text{g}/\ell$ for trihalomethanes (THMs).

The compound cis-1,2-DCE was detected at concentrations ranging from 1.0 $\mu\text{g}/\ell$ (well GW-10) to 4.3 $\mu\text{g}/\ell$ (well GW-2) in the first quarter 1996 groundwater samples collected from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10. None of the concentrations of cis-1,2-DCE detected in the groundwater samples were above the MCL of 6.0 $\mu\text{g}/\ell$.

Dichlorodifluoromethane was detected at concentrations ranging from 0.69 $\mu\text{g}/\ell$ (well GW-7) to 1.4 $\mu\text{g}/\ell$ (well GW-2) in the first quarter 1996 groundwater samples obtained from groundwater monitoring wells GW-1, GW-2, GW-7, GW-8 and GW-9. Dichlorodifluoromethane was not detected above a detection limit of 0.5 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-3 and GW-10.

The compound p-isopropyl toluene was detected at a concentration of 0.57 $\mu\text{g}/\ell$ in the first quarter 1996 groundwater sample collected from groundwater monitoring well GW-1. P-isopropyl toluene was not detected above a detection limit of 0.5 $\mu\text{g}/\ell$ in the groundwater samples collected from the other six groundwater monitoring wells.

Toluene was detected at concentrations ranging from 2.3 $\mu\text{g}/\ell$ (well GW-10) to 25 $\mu\text{g}/\ell$ (well GW-1) in the first quarter 1996 groundwater samples collected from groundwater monitoring wells GW-1, GW-2, GW-3, GW-7, GW-8 and GW-10. Toluene was not detected above a detection limit of 0.5 $\mu\text{g}/\ell$ in the groundwater sample collected from groundwater monitoring well GW-9. None of the concentrations of toluene detected in the groundwater samples were above the MCL of 150 $\mu\text{g}/\ell$.

No other VOCs were detected above their respective detection limits in the groundwater samples collected during the first quarter 1996 groundwater sampling event. No total petroleum hydrocarbons were detected above a detection limit of 2 mg/ℓ in any of the groundwater samples collected from the seven groundwater monitoring wells.

No VOCs were detected in the trip blank and field blank samples collected on April 24, 1996. Toluene was detected at a concentration of 0.79 $\mu\text{g}/\ell$ in the bailer equipment blank sample. The compounds bromodichloromethane, chloroform, TCE, toluene, PCE, and p-isopropyl toluene were detected in the pump equipment blank sample at concentrations of 0.61 $\mu\text{g}/\ell$, 1.6 $\mu\text{g}/\ell$, 0.61 $\mu\text{g}/\ell$, 27 $\mu\text{g}/\ell$, 0.65 $\mu\text{g}/\ell$ and 4.3 $\mu\text{g}/\ell$, respectively. Historically only trace levels of toluene were detected in groundwater samples collected from the groundwater monitoring wells. The detected toluene concentrations may be related to incomplete decontamination of the purge pump and associated hose.

VOC analytical results for the groundwater samples collected from the groundwater monitoring wells during the first quarter 1996 groundwater monitoring event are presented in Table 4 and Figure 5. VOC analytical results for the third and fourth quarters of 1995 are provided for reference in Table 3. Historical VOC analytical results are presented in Tables 13 through 20. Historical groundwater surface elevations, nitrate and VOC concentrations for groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 are presented in Figures 7 through 49.

6.2.2 Groundwater Sample Results (July 9-10, 1996)

TCE was detected at concentrations ranging from 21 $\mu\text{g}/\ell$ (well GW-2) to 17,000 $\mu\text{g}/\ell$ (well GW-7) in groundwater samples collected during the second quarter 1996 from the seven groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10. The concentrations of TCE detected in the groundwater samples from the seven monitoring wells were above the MCL of 5 $\mu\text{g}/\ell$.

PCE was detected at concentrations ranging from 1.6 $\mu\text{g}/\ell$ (well GW-3) to 81 $\mu\text{g}/\ell$ (well GW-10) in the second quarter 1996 groundwater samples collected from the seven groundwater monitoring wells. The concentrations of PCE detected in the groundwater samples obtained from groundwater monitoring wells GW-7 through GW-10 were above the MCL of 5 $\mu\text{g}/\ell$.

The compound 1,1,1-TCA was detected at concentrations ranging from 0.81 $\mu\text{g}/\ell$ (well GW-2) to 89 $\mu\text{g}/\ell$ (well GW-10) in groundwater samples collected from the seven monitoring wells during the second quarter 1996 groundwater monitoring event. None of the concentrations of 1,1,1-TCA detected during the second quarter 1996 sampling event were above the MCL of 200 $\mu\text{g}/\ell$.

The compound 1,1-DCA was detected in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-1, GW-3, GW-7 and GW-10 at concentrations ranging from 0.96 $\mu\text{g}/\ell$ (well GW-1) to 60 $\mu\text{g}/\ell$ (well GW-7). The concentrations of 1,1-DCA detected in the groundwater samples from groundwater monitoring wells GW-7 and GW-10 were above the MCL of 5 $\mu\text{g}/\ell$.

During the second quarter 1996, 1,1-DCE was detected at concentrations ranging from 1.7 $\mu\text{g}/\ell$ (well GW-2) to 53 $\mu\text{g}/\ell$ (well GW-10) in groundwater samples collected from the seven groundwater monitoring wells. The compound 1,1-DCE was detected at concentrations above the MCL in the groundwater samples collected from groundwater monitoring wells GW-1, GW-7, and GW-10 only.

Carbon tetrachloride (CT) was detected in the second quarter 1996 groundwater samples from groundwater monitoring wells GW-1 through GW-3 and GW-8 through GW-10 at concentrations ranging from 1.6 $\mu\text{g}/\ell$ (well GW-1) to 8.3 $\mu\text{g}/\ell$ (well GW-10). The concentrations of CT detected in the groundwater samples from these six groundwater monitoring wells were above the MCL of 0.5 $\mu\text{g}/\ell$.

Chloroform was detected at concentrations from 0.99 $\mu\text{g}/\ell$ (well GW-3) to 150 $\mu\text{g}/\ell$ (well GW-10) in the second quarter 1996 groundwater samples obtained from the seven groundwater monitoring wells. The chloroform concentrations detected in the groundwater samples collected from wells GW-7 and GW-10 were above the MCL of 100 $\mu\text{g}/\ell$ for total trihalomethanes.

The compound cis-1,2-DCE was detected in the second quarter 1996 groundwater samples collected from the seven groundwater monitoring wells at concentrations ranging from 0.77 $\mu\text{g}/\ell$ (GW-9) to 230 $\mu\text{g}/\ell$ (GW-10). The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-7 and GW-10 were above the MCL of 6.0 $\mu\text{g}/\ell$.

Dichlorodifluoromethane was detected at a concentration of 0.76 $\mu\text{g}/\ell$ in the second quarter 1996 groundwater sample collected from groundwater monitoring well GW-9. Dichlorodifluoromethane was not detected in the groundwater samples obtained from the other six groundwater monitoring wells.

The compound p-isopropyl toluene was not detected in any of the groundwater samples collected from the groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 during the second quarter 1996 groundwater monitoring event.

The compound 1,1,2-TCA was detected at a concentration of 4.5 $\mu\text{g}/\ell$ in the groundwater sample collected during the second quarter 1996 from groundwater monitoring well GW-10. The concentration of 1,1,2-TCA detected in the groundwater sample collected from groundwater monitoring well GW-10 was below the MCL of 5.0 $\mu\text{g}/\ell$.

The compound 1,2-DCA was detected in the second quarter 1996 groundwater sample collected from groundwater monitoring well GW-10 at a concentration of 1.5 $\mu\text{g}/\ell$. This concentration of 1,2-DCA was above the MCL of 0.5 $\mu\text{g}/\ell$.

Benzene was detected for the second time in the second quarter 1996 groundwater sample (first detected in fourth quarter of 1995) collected from groundwater monitoring well GW-10 at a concentration of 2.8 $\mu\text{g}/\ell$. The concentration of benzene detected in the groundwater sample collected from groundwater monitoring well GW-10 was above the MCL of 1.0 $\mu\text{g}/\ell$.

The compound trans-1,2-DCE was detected in the second quarter 1996 groundwater sample collected from groundwater monitoring well GW-10 at a concentration of 5.6 $\mu\text{g}/\ell$. The concentration of trans-1,2-DCE detected in the groundwater sample collected from groundwater monitoring well GW-10 was below the MCL of 10 $\mu\text{g}/\ell$.

Toluene was detected at concentrations ranging from 3.5 $\mu\text{g}/\ell$ (well GW-2) to 5.8 $\mu\text{g}/\ell$ (well GW-3) in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-1 through GW-3. None of the concentrations of toluene detected in the groundwater samples were above the MCL of 150 $\mu\text{g}/\ell$.

Methylene chloride was detected in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-8 and GW-10 at concentrations of 1.4 $\mu\text{g}/\ell$ and 2.5 $\mu\text{g}/\ell$, respectively. Methylene chloride was not detected in the groundwater samples from the other five monitoring wells. The concentrations of methylene chloride detected in the groundwater samples collected from GW-8 and GW-10 were below the MCL of 5 $\mu\text{g}/\ell$.

No other VOCs were detected in the groundwater samples collected from the seven groundwater monitoring wells above their respective detection limits during the second quarter 1996 sampling event.

During the second quarter 1996, trichlorofluoromethane was detected at a concentration of 1.5 $\mu\text{g}/\ell$ in the trip blank sample. The compounds chloroform, naphthalene, TCE, toluene, PCE and cis-1,2-DCE were detected at concentrations of 1.4 $\mu\text{g}/\ell$, 0.66 $\mu\text{g}/\ell$, 1.2 $\mu\text{g}/\ell$, 43 $\mu\text{g}/\ell$, 1.4 $\mu\text{g}/\ell$, and 1.0 $\mu\text{g}/\ell$, respectively, in the equipment blank collected from the pump. No VOCs were detected in the field blank or bailer equipment blank samples collected during the second quarter 1996. Historically only trace levels of toluene were detected in groundwater samples collected from the groundwater monitoring wells. The detected toluene concentrations may be related to incomplete decontamination of the purge pump and associated hose.

VOC analytical results for the groundwater samples collected from the groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 during the second quarter 1996 are presented in Table 4 and Figure 6.

7.0 DISCUSSION

Based on groundwater level measurements obtained on April 22, 1996, groundwater elevations increased in groundwater monitoring wells GW-1 through GW-10 between 3.44 feet (well GW-6) and 6.43 feet (well GW-9) since December 18, 1995. During the period between April 22, 1996 and July 8, 1996, groundwater levels decreased in all ten groundwater monitoring wells between 3.10 feet (well GW-6) and 8.86 feet (well GW-10). The groundwater level measurements performed on April 22, 1996 indicate that the instantaneous groundwater flow direction was southeasterly beneath the Site, the Kaiser Permanente property and the Home Depot property. The groundwater level measurements performed on July 8, 1996 indicated that the instantaneous groundwater flow direction was southwesterly beneath the Site and the Kaiser Permanente property and south/southeasterly beneath the Home Depot property. Instantaneous groundwater flow direction beneath the Site is significantly influenced by pumping of aeration wells and supply wells located within the Rinaldi-Toluca and North Hollywood well fields.

TCE was detected in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 during the first quarter and second quarter 1996 groundwater sampling events at concentrations above the DHS MCL. The concentration of PCE detected equaled or exceeded the MCL in the groundwater samples obtained from groundwater monitoring wells GW-2 and GW-9 during the first quarter 1996 and from groundwater monitoring wells GW-7 through GW-10 in the second quarter 1996. The compounds benzene and 1,2-DCA were detected only in the second quarter 1996 groundwater samples collected from groundwater monitoring well GW-10 at concentrations above their respective MCLs. 1,1-DCE was detected in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-1, GW-7, and GW-10 at concentrations above the MCL. The compounds 1,1-DCA, chloroform and cis-1,2-DCE were detected in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 at concentrations above the MCL. The compound 1,1-DCA was also detected above the MCL concentration in groundwater samples from GW-1 and GW-3 during the second quarter. The compound CT was detected in the first quarter 1996 groundwater samples collected from groundwater monitoring well GW-7, and in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-1 through GW-3, and GW-8 through GW-10, at concentrations above the MCL. All other VOCs included in the analysis of groundwater samples collected from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 were either not detected (ND) or present at concentrations below their respective MCLs.

Nitrate was detected at concentrations above the MCL in the first quarter 1996 groundwater samples collected from groundwater monitoring wells GW-7, GW-8 and GW-9, and in the second quarter 1996 groundwater samples collected from groundwater monitoring wells GW-2, GW-7 and GW-9. The turbidity levels detected in the first quarter 1996 groundwater samples obtained from groundwater monitoring wells GW-1 through GW-3 and GW-8, and the second quarter 1996 groundwater samples obtained from groundwater monitoring wells GW-1, GW-3 and GW-8 were above the secondary

MCL. No other inorganic constituents were detected above the primary or secondary MCLs during the first and second quarter 1996 sampling events.

The concentrations of VOCs detected in groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 decreased from the December 1995 sampling event to the April 1996 (first quarter) sampling event. The concentrations of TCE detected in groundwater samples obtained from the seven groundwater monitoring wells GW-1, GW-2, GW-3, GW-7, GW-8, GW-9 and GW-10 decreased from 25 µg/l, 50 µg/l, 160 µg/l, 2,400 µg/l, 310 µg/l, 97 µg/l and 3,200 µg/l, respectively, in the December 1995 sampling event to 7.1 µg/l, 6.7 µg/l, 11 µg/l, 42 µg/l, 6.9 µg/l, 14 µg/l and 48 µg/l, respectively, in the April 1996 sampling event. The concentrations of TCE detected in the second quarter 1996 groundwater samples obtained from all seven groundwater monitoring wells represented an increase of as much as three orders of magnitude when compared to first quarter 1996 concentrations. The concentrations of TCE detected in the groundwater samples from groundwater monitoring wells GW-1, GW-2, GW-3, GW-7, GW-8, GW-9, and GW-10 increased to 86 µg/l, 21 µg/l, 90 µg/l, 17,000 µg/l, 680 µg/l, 230 µg/l and 11,000 µg/l, respectively.

Continued pumping from production wells in the Rinaldi-Toluca, Tujunga and west North Hollywood well fields appears to have moved the off-site TCE plume in the groundwater beneath the southern portion of the Kaiser Permanente property and the Site. This has resulted in elevated and almost stable TCE concentrations detected in groundwater samples collected from groundwater monitoring wells GW-7 and GW-10. The present locations of monitoring wells GW-8 and GW-9 relative to the TCE plume in the groundwater are similar to those of monitoring wells GW-7 and GW-10 in 1993. Consequently, the trend in increasing concentration of TCE previously observed in groundwater samples collected from monitoring wells GW-7 and GW-10 can now be observed in groundwater samples collected from monitoring wells GW-8 and GW-9 (see Figures 33, 37, 44 and 48). TCE concentrations in groundwater samples from monitoring well GW-8 increased from 0.8 µg/l in 1993, to 32 µg/l in 1994, to 180 µg/l in 1995, to 310 µg/l in January 1996, to 680 µg/l in July 1996. A similar trend is also observed in GW-9.

Continued pumping from production wells in the Rinaldi-Toluca, Tujunga and west North Hollywood well fields together with an off-site source of TCE may account for the increase in TCE concentration detected in groundwater samples collected from GW-7 and GW-10, as well as the fluctuation and trend in increasing TCE concentration observed in groundwater samples from monitoring wells GW-8 and GW-9.

8.0 LIMITATIONS

SECOR has prepared this report for the exclusive use of AlliedSignal Aerospace, their representatives, and other authorized parties. The findings and conclusions presented herein are based primarily upon the laboratory analyses of groundwater samples collected during this study. All work has been conducted in accordance with generally accepted practices in the fields of environmental engineering, geology, and hydrogeology that exist in Los Angeles County at this time. No other warranty, either expressed or implied, is made.

TABLES

TABLE 1 - GROUNDWATER SURFACE ELEVATIONS (all elevations in feet above mean sea level)					
Well ID	Wellhead Elevation	Depth to Water (04/22/96)	Groundwater Elevation (04/22/96)	Depth to Water (07/08/96)	Groundwater Elevation (07/08/96)
GW-1	734.30	216.76	517.54	221.70	512.60
GW-2	737.82	219.49	518.33	224.30	513.52
GW-3	735.53	217.52	518.01	222.55	512.98
GW-4	740.65	223.18	517.47	227.57	513.08
GW-5	738.13	222.36	515.77	226.77	511.36
GW-6	742.46	225.12	517.34	228.22	514.24
GW-7	734.48	216.50	517.98	221.82	512.66
GW-8	741.80	222.91	518.89	228.46	513.34
GW-9	740.55	221.77	518.78	227.72	512.83
GW-10	737.44	219.17	518.27	228.03	509.41

TABLE 2 - INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (all results in milligrams per liter, except turbidity)						
Constituent	GW-1 (04/23/96)	GW-1 (07/09/96)	GW-2 (04/23/96)	GW-2 (07/09/96)	GW-3 (04/23/96)	GW-3 (07/09/96)
Chloride	19	23	25	38	21	13
Sulfate	40	36	33	69	33	24
Carbonate Alkalinity	<10	<10	<10	<10	<10	<10
Bicarbonate Alkalinity	170	200	180	270	180	120
Hydroxide Alkalinity	<10	<10	<10	<10	<10	<10
Total Alkalinity	170	200	180	270	180	120
Calcium	59	70	72	120	52	44
Magnesium	12	15	13	25	11	9.3
Potassium	8.1	17	8.8	4.7	1.9	14
Sodium	15	19	16	25	10	16
TDS	290	360	280	520	350	230
Turbidity	14	6.5	16	3.9	13	21
Nitrate	28	39	29	67	34	35
Ammonia Nitrogen	0.12	<0.1	<0.1	<0.1	<0.1	0.17

TABLE 2 - INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS
(all results in milligrams per liter, except turbidity)

Constituent	GW-7 (04/24/96)	GW-7 (07/10/96)	GW-8 (04/24/96)	GW-8 (07/10/96)	GW-9 (04/24/96)	GW-9 (07/09/96)	GW-10 (04/25/96)	GW-10 (07/10/96)
Chloride	31	36	30	28	32	29	23	26
Sulfate	57	120	61	49	61	58	57	63
Carbonate Alkalinity	<10	<10	<10	<10	<10	<10	<10	<10
Bicarbonate Alkalinity	250	430	250	260	240	260	220	390
Hydroxide Alkalinity	<10	<10	<10	<10	<10	<10	<10	<10
Total Alkalinity	250	430	250	260	240	260	220	390
Calcium	100	180	110	100	100	110	91	140
Magnesium	22	38	25	21	21	24	19	30
Potassium	3.9	5.0	6.4	4.2	4.4	4.6	4.0	4.7
Sodium	27	30	27	25	27	27	25	27
TDS	420	720	440	450	420	500	370	610
Turbidity	2.3	1.7	26	24	2.1	2.5	2.7	0.9
Nitrate	56	80	47	39	51	73	36	35
Ammonia Nitrogen	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<10: Less than the denoted detection limit.

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - November 19-22 and December 18-20, 1996
(all results in micrograms per liter)

Organic Constituent	GW-1 (11/20/95)	GW-1 (12/18/95)	GW-2 (11/19/95)	GW-2 (12/19/95)	GW-3 (11/20/95)	GW-3 (12/19/95)	GW-7 (11/22/95)	GW-7 (12/20/95)	GW-8* (11/21/95)	GW-8 (12/19/95)
TPH	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
1,1,1,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,1,1-Trichloroethane	<0.2	1.2	<0.2	2.2	0.36	6.6	0.34	14	<0.2/<2	3.8
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.53	<0.2/<2	<0.2
1,1-Dichloroethane	0.20	0.28	0.50	0.53	0.64	0.98	0.22	14	0.26/<2	0.22
1,1-Dichloroethene	<0.2	2.0	<0.2	4.9	0.51	11	0.48	9.2	2.2/<2	3.8
1,1-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,2,3-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,2,3-Trichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5/<5	<0.5
1,2,4-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,2,4-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,2-Dibromo-3-chloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5/<5	<0.5
1,2-Dibromoethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,2-Dichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,2-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,3,5-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,3-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
2,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
2-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
4-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Bromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Bromodichloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	0.25	<0.2	<0.2	<0.2/<2	<0.2
Bromomethane	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5/<5	<0.5
Benzene	<0.2	0.19	<0.2	<0.2	<0.2	<0.2	<0.2	0.59	<0.2/<2	<0.2
Bromoform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5/<5	<0.5
Chlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Carbon Tetrachloride	<0.2	0.32	<0.2	3.8	0.49	5.0	0.55	2.2	2.4/<2	4.2
Chloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Chloroform	0.51	0.72	0.40	1.0	0.52	2.3	0.56	21	1.3/<2	2.0
Chloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5/<5	<0.5

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 824.2) - November 19-22 and December 18-20, 1996
(all results in micrograms per liter)

Organic Constituent	GW-1 (11/20/95)	GW-1 (12/18/95)	GW-2 (11/19/95)	GW-2 (12/19/95)	GW-3 (11/20/95)	GW-3 (12/19/95)	GW-7 (11/22/95)	GW-7 (12/20/95)	GW-8* (11/21/95)	GW-8 (12/19/95)
Dibromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Dibromomethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Dichlorodifluoromethane	1.5	1.4	1.6	0.76	0.64	0.60	0.56	0.44	1.4/<5	1.4
Ethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Freon 113	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Hexachlorobutadiene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Isopropylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Methylene Chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1/<10	<1
N-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
N-Propylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Naphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1/<10	<1
Styrene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Trichloroethene	7.0	25	4.8	50	15	160	27	2400	170/170	310
Trichlorofluoromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
Tetrachloroethene	2.0	2.1	3.0	1.8	1.5	2.4	0.53	7.7	5.0/4.8	7.4
Vinyl Chloride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
cis-1,2-Dichloroethene	1.1	1.3	2.7	1.3	1.2	1.5	0.80	45	1.8/<2	2.4
cis-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
m- & p-xylenes	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4/<4	<0.4
o-xylene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
p-Isopropyl toluene	0.31	0.29	<0.2	<0.2	0.40	0.44	0.20	0.39	<0.2/<2	<0.2
sec-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
trans-1,2-Dichloroethene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2
tert-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2/<2	<0.2

TPH: Total Petroleum Hydrocarbons.
 <0.2 Less than the detection limit of 0.2.
 NA: Not Analyzed.
 Includes both low and high dilution results.

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TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - November 19-22 and December 18-20, 1995
(all results in micrograms per liter)

Organic Constituent	GW-9 (11/21/95)	GW-9 (12/19/95)	GW-10 (11/21/95)	GW-10 (12/20/95)	Equipment Blank (11/21/95)	Equipment Blank (12/18/95)	Trip Blank (11/21/95)	Trip Blank (12/18/95)	Field Blank (11/21/95)	Field Blank (12/18/95)	Pump Equipment Blank (12/20/95)
TPH	<2,000	<2,000	<2,000	<2,000	NA	NA	NA	NA	NA	NA	<NA
1,1,1,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.38
1,1,1-Trichloroethane	<0.2	5.6	<0.2	48	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2	5.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane	<0.2	<0.2	<0.2	11	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.34
1,1-Dichloroethene	<0.2	5.2	<0.2	35	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,4-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3,5-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
4-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	<0.2	<0.2	<0.2	2.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromoform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride	<0.2	1.2	<0.2	5.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	0.38	1.5	0.32	90	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.65
Chloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - November 19-22 and December 18-20, 1995
(all results in micrograms per liter)

Organic Constituent	GW-9 (11/21/95)	GW-9 (12/19/95)	GW-10 (11/21/95)	GW-10 (12/20/95)	Equipment Blank (11/21/95)	Equipment Blank (12/18/95)	Trip Blank (11/21/95)	Trip Blank (12/18/95)	Field Blank (11/21/95)	Field Blank (12/18/95)	Pump Equipment Blank (12/20/95)
Dibromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromomethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichlorodifluoromethane	1.4	2.3	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Freon 113	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Hexachlorobutadiene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Isopropylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
N-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
N-Propylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Styrene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene	5.8	97	30	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichlorofluoromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tetrachloroethene	1.0	13	2.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vinyl Chloride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.8
cis-1,2-Dichloroethene	0.54	0.95	0.61	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.84
m- & p-xylenes	<0.4	<0.2	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
o-xylene	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p-Isopropyl toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.97
sec-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
tert-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

TPH:
Total Petroleum Hydrocarbons.
Less than the detection limit of 0.2.
NA:
Not Analyzed
Includes both low and high dilution results.

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - April 23-25 and July 9-10, 1996
(all results in micrograms per liter)

Organic Constituent	GW-1 (04/23/96)	GW-1 (07/09/96)	GW-2 (04/23/96)	GW-2 (07/09/96)	GW-3 (04/24/96)	GW-3 (07/09/96)	GW-7 (04/24/96)	GW-7 (07/10/96)	GW-8 (04/24/96)	GW-8 (07/10/96)
TPH	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000	<2.000
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,1,1-Trichloroethane	<0.5	3.8	<0.5	0.81	<0.5	2.6	0.54	63	<0.5	4.9
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,1,2-Trichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,1-Dichloroethane	<0.5	0.96	0.71	<0.5	0.63	2.6	<0.5	60	<0.5	<0.5
1,1-Dichloroethene	<0.5	6.2	<0.5	1.7	<0.5	5.3	0.80	42	<0.5	4.4
1,1-Dichloropropene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,2,3-Trichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,2,3-Trichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,2,4-Trimethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,2-Dibromo-3-chloropropane	<1	<1	<1	<1	<1	<1	<1	<20	<1	<1
1,2-Dibromoethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,2-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,3,5-Trimethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,3-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,3-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
2,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
2-Chlorotoluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
4-Chlorotoluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Bromobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Bromochloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Bromodichloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Bromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Bromoform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Chlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Carbon Tetrachloride	<0.5	1.6	<0.5	2.0	<0.5	3.2	0.89	<10	<0.5	5.6
Chloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Chloroform	<0.5	1.0	<0.5	<0.5	<0.5	0.99	0.71	140	<0.5	1.9
Chloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - April 23-25 and July 9-10, 1996
(all results in micrograms per liter)

Organic Constituent	GW-1 (04/23/96)	GW-1 (07/09/96)	GW-2 (04/23/96)	GW-2 (07/09/96)	GW-3 (04/24/96)	GW-3 (07/09/96)	GW-7 (04/24/96)	GW-7 (07/10/96)	GW-8 (04/24/96)	GW-8 (07/10/96)
Dibromochloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Dibromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Dichlorodifluoromethane	1.2	<0.5	1.4	<0.5	<0.5	<0.5	0.69	<10	1.2	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Freon 113	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Hexachlorobutadiene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Isopropylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Methylene Chloride	<1	<1	<1	<1	<1	<1	<1	<20	<1	1.4
N-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
N-Propylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Naphthalene	<1	<1	<1	<1	<1	<1	<1	<20	<1	<1
Styrene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Trichloroethene	7.1	86	6.7	21	11	90	42	17000	6.9	680
Trichlorofluoromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
Toluene	25	3.9	15	3.5	13	5.8	3.1	<10	0.56	<0.5
Tetrachloroethene	2.5	3.0	5.0	2.8	2.2	1.6	1.2	36	2.9	7.8
Vinyl Chloride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
cis-1,2-Dichloroethene	1.3	1.9	4.3	2.1	1.8	0.87	1.3	190	1.5	2.1
cis-1,3-Dichloropropene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
m- & p-xylenes	<1	<1	<1	<1	<1	<1	<1	<20	<1	<1
o-xylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
p-Isopropyl toluene	0.57	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
sec-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
trans-1,3-Dichloropropene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5
tert-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5

TPH: Total Petroleum Hydrocarbons.
 <0.2 Less than the detection limit of 0.2.
 NA: Not Analyzed

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - April 23-25 and July 9-10, 1996
(all results in micrograms per liter)

Organic Constituent	GW-9 (04/24/96)	GW-9 (07/09/96)	GW-10 (04/25/96)	GW-10 (07/10/96)	Baller Equipment Blank (04/24/96)	Baller Equipment Blank (07/10/96)	Trip Blank (04/24/96)	Trip Blank (07/10/96)	Field Blank (04/24/96)	Field Blank (07/10/96)	Pump Equipment Blank (04/24/96)	Pump Equipment Blank (07/10/96)
TPH	<2,000	<2,000	<2,000	<2,000	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	<0.5	12	<0.5	89	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	<0.5	<0.5	<0.5	4.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	<0.5	<0.5	<0.5	8.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	<0.5	5.4	<0.5	53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloropropene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.61	<0.5
Bromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	<0.5	<0.5	<0.5	2.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	<0.5	2.5	<0.5	8.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	0.50	1.3	0.51	150	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.6	1.4
Chloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - April 23-25 and July 9-10, 1996
(all results in micrograms per liter)

Organic Constituent	GW-9 (04/24/96)	GW-9 (07/09/96)	GW-10 (04/25/96)	GW-10 (07/10/96)	Boiler Equipment Blank (04/24/96)	Boiler Equipment Blank (07/10/96)	Trip Blank (04/24/96)	Trip Blank (07/10/96)	Field Blank (04/24/96)	Field Blank (07/10/96)	Pump Equipment Blank (04/24/96)	Pump Equipment Blank (07/10/96)
Dibromochloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	1.1	0.76	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Freon 113	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene Chloride	<1	<1	<1	2.5	<1	<1	<1	<1	<1	<1	<1	<1
N-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-Propylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.66
Styrene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	14	230	48	11000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.61	1.2
Trichlorofluoromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	2.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	27	43
Tetrachloroethene	5.2	28	2.6	81	<0.5	0.79	<0.5	<0.5	<0.5	<0.5	0.65	1.4
Vinyl Chloride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	1.5	0.77	1.0	230	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0
cis-1,3-Dichloropropene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m- & p-xylenes	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-xylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyl toluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.3	<0.5
sec-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5	5.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

TPH: Total Petroleum Hydrocarbons.
<0.2 Less than the detection limit of 0.2.
NA: Not Analyzed

TABLE 5 - HISTORIC GROUNDWATER SURFACE ELEVATIONS
(all elevations in feet above mean sea level)

Date	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10
07/19/91	472.30	472.33	472.15	473.38	473.78	474.63	NC	NC	NC	NC
08/12/91	470.58	470.53	470.45	470.52	471.98	473.34	NC	NC	NC	NC
09/17/91	468.38	468.17	468.11	468.47	470.05	470.84	NC	NC	NC	NC
11/18/91	467.66	467.97	467.76	467.56	468.91	469.43	NC	NC	NC	NC
12/10/91	471.32	471.56	471.45	470.78	471.86	476.06	NC	NC	NC	NC
01/13/92	475.52	475.88	475.64	475.19	477.13	475.66	NC	NC	NC	NC
02/19/92	478.72	479.14	479.09	477.95	478.99	477.53	NC	NC	NC	NC
03/17/92	475.67	475.92	475.85	475.36	476.22	476.82	NC	NC	NC	NC
04/01/92	474.12	476.07	474.70	474.66	475.33	476.33	NC	NC	NC	NC
05/19/92	472.11	472.52	471.96	471.28	472.42	474.01	NC	NC	NC	NC
06/15/92	472.80	473.12	472.87	472.47	473.75	473.79	NC	NC	NC	NC
07/22/92	471.87	471.94	471.95	471.47	472.78	472.55	NC	NC	NC	NC
08/10/92	469.97	470.13	470.03	469.76	471.03	471.55	NC	NC	NC	NC
09/04/92	463.93	464.95	464.00	464.37	466.04	468.38	NC	NC	NC	NC
11/12/92	462.97	462.55	462.82	462.75	464.85	464.38	NC	NC	NC	NC
12/21/92	468.71	468.22	468.66	468.20	470.04	468.33	NC	NC	NC	NC
01/14/93	473.10	473.00	473.27	472.44	473.99	471.78	NC	NC	NC	NC
02/16/93	477.70	478.02	478.11	477.00	478.14	475.24	NC	NC	NC	NC
03/02/93	479.52	479.91	479.95	478.89	480.04	476.84	NC	NC	NC	NC
03/25/93	482.56	482.92	482.95	481.99	483.02	480.12	NC	NC	NC	NC
05/09/93	487.59	488.15	488.13	487.21	488.04	486.07	NC	NC	NC	NC
06/01/93	490.08	490.83	490.67	489.63	490.40	488.53	NC	NC	NC	NC
06/17/93	488.29	489.63	488.85	487.80	488.65	488.59	NC	NC	NC	NC
06/30/93	491.29	492.34	491.99	491.28	492.16	490.31	NC	NC	NC	NC
08/02/93	496.49	497.40	497.24	496.22	496.86	494.70	NC	NC	NC	NC
08/18/93	496.44	497.61	497.19	495.73	496.06	495.36	NC	NC	NC	NC
09/08-09/93	NM	NM	NM	NM	NM	NM	498.56	499.90	500.30	499.04
09/13/93	498.72	499.91	499.41	498.48	498.98	497.89	NC	NC	NC	NC
10/14/93	501.79	502.84	502.45	501.13	501.53	500.57	NC	NC	NC	NC
11/29/93	506.29	507.14	506.93	505.90	506.24	504.53	507.16	507.91	508.16	507.52
12/07/93	506.99	507.83	507.60	506.56	506.96	505.37	NM	NM	NM	NM
01/07/94	509.37	510.20	509.88	508.93	509.28	507.90	510.19	510.96	511.21	510.57
02/15/94	508.77	509.44	509.09	508.29	508.50	508.84	508.97	509.66	509.36	509.03
03/07/94	510.18	510.78	510.53	509.71	510.15	509.52	510.74	511.29	511.37	510.88
04/15/94	511.91	512.51	512.34	511.38	511.96	511.09	512.52	512.98	513.08	512.80
05/16/94	514.34	515.01	514.81	513.80	514.30	513.31	515.00	515.61	515.73	515.36

TABLE 5 - HISTORIC GROUNDWATER SURFACE ELEVATIONS
(all elevations in feet above mean sea level)

Date	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10
06/16/94	516.10	516.87	516.58	515.60	515.77	515.10	516.75	517.55	517.62	517.13
07/19/94	516.90	517.82	517.41	516.37	516.44	516.62	517.38	518.50	518.65	517.80
08/15/94	509.35	510.63	509.39	509.79	509.14	513.61	508.39	512.34	509.05	506.04
09/07/94	502.82	504.08	502.57	504.16	503.19	508.52	501.42	502.98	501.49	500.74
10/11/94	495.77	496.42	495.19	497.61	496.50	501.98	494.20	495.08	493.67	493.46
11/21/94	493.63	493.61	493.69	493.99	495.75	495.23	493.84	492.87	492.40	493.58
12/08/94	496.12	496.26	496.41	496.50	497.76	496.05	496.54	495.87	495.69	496.46
01/17/95	NM	501.61	501.59	501.24	502.11	500.20	501.76	501.83	501.84	501.91
02/28/95	NM	498.14	497.53	497.52	498.05	500.09	497.02	497.59	496.79	496.72
03/06/95	NM	497.27	496.69	496.73	497.28	499.50	496.20	496.70	495.95	495.86
09/18/95	NM	509.52	508.93	508.45	506.91	509.05	508.74	510.06	509.93	509.09
11/19/95	514.40	515.13	514.78	514.47	513.08	514.40	514.72	515.41	515.16	514.87
12/18/95	512.26	513.19	512.67	512.77	511.00	513.90	512.28	512.94	512.35	512.19
04/22/96	517.54	518.33	518.01	517.47	515.77	517.34	517.98	518.89	518.78	518.27
07/08/96	512.60	513.52	512.98	513.08	511.36	514.24	512.66	513.34	512.83	509.41

NC: Not calculated.
NM: Not measured.

TABLE 6 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date																
	08/21/91	09/17/91	01/14/92	03/16/92	05/19/92	08/11/92	01/14/93	03/02/93	06/01/93	12/07/93	02/18/94	05/16/94	08/16/94	11/20/95	12/18/95	4/23/96	7/9/96
Chloride	44.7/46.9	38.5	31.0	24.2	29.0	37.0	22	27	27	25	27	26	40	24	17	19	23
Sulfate	74.7/67.1	69.3	59.3	50.8	59.4	64.0	55	59	55	56	56	65	72	52	34	40	36
Carbonate Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10
Bicarbonate Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210	210	250	210	140	170	200
Hydroxide Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10
Total Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210	210	250	210	140	170	200
Calcium	113/111	103	81.5	79.8	88.9	85	86	86	89	91	95	92	100	73	50	59	70
Magnesium	24.9/24.7	23.6	18.3	17.1	17.8	19.9	18	17	19	19	20	19	24	16	11	12	15
Potassium	ND/ND	ND	ND	ND	ND	ND	3.9	3.7	3.8	3.8	5.2	3.9	4.8	4.9	8.0	8.1	17
Sodium	24.5/23.9	23.6	23.6	22.7	24	26.1	25	24	26	27	26	26	29	19	17	15	19
TDS	551/514	580	437	441	440	581	400	360	400	410	420	430	500	410	280	290	360
Turbidity	ND/ND	0.38	0.40	0.60	0.20	0.2	0.68	1.0	2.4	1.42	3.1	3.9	<0.1	8.6	14	14	6.5
Nitrate	18/17.8	17.7	10.5	10.9	14.9	17.3	45	42	38	36	49	37	75	40	27	28	39
Nitrite	ND/ND	ND	3.9	ND	ND	ND	<0.05	<0.05	<0.05	<0.1	<0.1	<0.2	<0.2	NA	NA	NA	NA
Ammonia Nitrogen	0.48/0.35	0.51	ND	0.20	ND	ND	<0.1	0.21	<0.1	0.38	<0.1	<0.1	0.36	NA	NA	0.12	<0.1

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 7 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	9/17/91	1/16/92	3/17/92	5/20/92	8/10/92	1/14/93	3/2/93	6/2/93	8/19/93	11/30/93	2/16/94	5/18/94	8/16/94	12/12/94	3/9/95	9/21/95	11/19/95	12/19/95	4/23/96	7/9/96
Chloride	34.8/33.4	28.9	25.2	26.4	24.3	31	30	30	28	31	32	35	36	35	25	40	26	18	25	38
Sulfate	63.7/61.9	57.3	48.5	59	52.6	58	55	55	65	56	56	61	64	58	60	61	42	39	33	69
Carbonate Alkalinity	ND/ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
Bicarbonate Alkalinity	248/248	172	197	261	264	210	210	210	220	280	290	240	290	250	250	260	200	170	180	270
Hydroxide Alkalinity	ND/ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
Total Alkalinity	248/248	172	197	261	264	210	210	210	220	280	290	240	290	250	250	260	200	170	180	270
Calcium	96.9/100	79.2	85	89	87.6	79	98	84	95	86	130	100	110	95	93	110	77	73	72	120
Magnesium	23.1/17.8	17.8	19	20.1	20.0	17	20	18	20	19	27	22	25	21	20	25	17	15	13	25
Potassium	ND/ND	ND	ND	ND	ND	3.3	3.9	3.4	3.7	3.3	4.4	4.2	4.7	3.9	4.0	4.7	5.2	4.6	8.8	4.7
Sodium	23.5/24.1	25.2	27.9	23.5	25.2	23	26	24	25	24	27	26	26	23	23	29	20	17	16	25
TDS	541/534	443	369	441	485	430	400	440	440	460	550	420	490	500	460	530	400	350	280	520
Turbidity	3.8/4.0	3.0	1.40	0.20	0.5	19	23	8.7	39	4.4	21	180	4.5	130	23	1.1	15	7.4	16	3.9
Nitrate	14.5/14.4	19.9	11.4	10.6	9.1	69	64	58	66	61	60	68	55	65	35	55	38	47	29	67
Nitrite	ND/ND	3.5	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA	NA	NA
Ammonia Nitrogen	ND/ND	ND	2.7	ND	ND	<0.1	0.11	<0.1	<0.1	<0.1	<0.1	<0.1	0.63	<0.1	<0.1	NA	NA	NA	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 8 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Data									
	9/17/91	1/16/92	3/16/92	5/19/92	8/12/92	1/14/93	3/02/93	6/02/93	8/19/93	11/30/93
Chloride	36.3	33.5/34	30.3/39	33.3/32	36.0	33	28	33	26	27
Sulfate	68.5	61.1/54	52.1/59	61.9/61.9	66.1	54	53	52	56	50
Carbonate Alkalinity	ND	ND/ND	qND/ND	ND/ND	ND	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	244	208/201	232/228	245/253	248	190	190	200	200	210
Hydroxide Alkalinity	ND	ND/ND	ND/ND	ND/ND	ND	<1	<1	<1	<1	<1
Total Alkalinity	244	208/201	232/228	245/253	248	190	190	200	200	210
Calcium	107	81.4/101	86.6/96.7	88.6/92.4	110	89	86	90	91	82
Magnesium	24.5	19.8/21.7	19.7/22.1	20.1/21.0	23.6	19	18	19	19	18
Potassium	ND	ND/4	ND/4	ND/ND	ND	3.9	3.5	3.9	3.8	3.6
Sodium	25.1	24.8/26.8	25.1/29.5	24.4/25.5	23.8	26	24	26	25	24
TDS	521	477/330	429/450	455/492	1,070	420	360	400	380	500
Turbidity	ND	0.50/0.15	0.40/0.20	0.20/0.20	0.20	4.3	0.85	2.0	8.9	4.7
Nitrate	16.3	12.4/15.2	13.9/15.8	15.7/15.6	15.5	66	60	56	66	57
Nitrite	ND	4.4/ND	ND/ND	ND/ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1
Ammonia Nitrogen	ND	ND/ND	0.12/ND	ND/ND	ND	<0.1	0.09	<0.1	<0.1	<0.1

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TABLE 8 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	2/16/94	5/18/94	8/16/94	12/13/94	3/09/95	9/21/95	11/20/95	12/19/95	4/23/96	7/9/96
Chloride	28	31	38	35	39	29	19	20	21	13
Sulfate	52	57	67	57	77	49	32	38	33	24
Carbonate Alkalinity	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
Bicarbonate Alkalinity	210	190	260	240	290	220	150	200	180	120
Hydroxide Alkalinity	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
Total Alkalinity	210	190	260	240	290	220	150	200	180	120
Calcium	100	98	100	110	110	83	61	71	52	44
Magnesium	21	20	24	22	24	19	13	15	11	9.3
Potassium	4.2	4.6	4.9	4.3	5.1	5.9	5.7	7.2	1.9	14
Sodium	25	26	27	25	27	23	9.7	18	10	16
TDS	460	360	500	490	550	430	300	370	350	230
Turbidity	27	160	3.4	30	2.3	13	12	5.3	13	21
Nitrate	60	67	74	64	70	48	34	38	34	35
Nitrite	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA	NA	NA
Ammonia Nitrogen	0.10	<0.1	0.61	0.12	<0.1	NA	NA	NA	<0.1	0.17

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 9 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date											
	09/08/93	11/29/93	02/16/94	05/18/94	08/15/94	12/11/94	03/10/95	09/21/95	11/22/95	12/20/95	04/24/96	07/10/96
Chloride	27	27	27	26	49	31	41	32	31	18	31	36
Sulfate	57	53	66	62	130	58	77	57	57	44	57	120
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
Bicarbonate Alkalinity	180	190	260	190	330	220	360	220	230	180	250	430
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
Total Alkalinity	180	190	260	190	330	220	360	220	230	180	250	430
Calcium	96	72	120	80	180	94	140	89	96	92	100	180
Magnesium	21	18	26	17	39	21	30	20	21	19	22	38
Potassium	4	3.7	4.2	3.6	5.7	4.0	4.5	4.0	3.6	3.1	3.9	5.0
Sodium	29	26	30	27	35	26	27	26	25	21	27	30
TDS	420	860	550	350	750	460	650	460	450	320	420	720
Turbidity	7.0	<1.0	7.8	5.1	0.30	1.5	0.80	0.9	2.5	13	2.3	1.7
Nitrate	63	49	71	44	100	64	68	55	58	37	56	80
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<1	<0.2	NA	NA	NA	NA
Ammonia Nitrogen	<0.02	<1.0	0.12	<0.1	0.28	<0.1	0.11	NA	NA	NA	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 10 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-8
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date													
	09/09/93	11/29/93	02/16/94	05/17/94	08/15/94	12/10/94	03/09/95	09/20/95	11/21/95	12/19/95	04/24/96	07/10/96		
Chloride	34	35	34	38	40	34	36	35	29	25	30	28		
Sulfate	60	56	55	62	69	59	62	58	52	44	61	49		
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10		
Bicarbonate Alkalinity	230	240	240	240	220	250	250	280	260	290	250	260		
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10		
Total Alkalinity	230	240	240	240	220	250	250	280	260	290	250	260		
Calcium	110	92	110	98	90	100	130	100	88	98	110	100		
Magnesium	25	23	24	21	19	22	29	25	19	22	25	21		
Potassium	4.9	4.4	4.5	3.9	4.1	4.5	5.8	6.2	3.9	5.3	6.4	4.2		
Sodium	29	28	28	25	25	27	35	30	26	26	27	25		
TDS	500	510	500	510	450	490	500	530	480	480	440	450		
Turbidity	5.0	<1.0	23	8.2	0.18	12	2.3	43	3.1	84	26	24		
Nitrate	74	56	69	76	71	58	63	52	41	28	47	39		
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA	NA	NA		
Ammonia Nitrogen	0.03	<1.0	<0.1	<0.1	<0.1	0.17	<0.1	NA	NA	NA	<0.1	<0.1		

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 11 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-9
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date											
	09/08/93	11/29/93	02/16/94	05/17/94	08/16/94	12/10/94	03/09/95	09/20/95	11/21/95	12/19/95	04/24/96	07/09/96
Chloride	26	21	31	22	30	30	38	27	28	26	32	29
Sulfate	1,000	59	58	66	69	58	67	61	60	56	61	58
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
Bicarbonate Alkalinity	180	190	180	190	220	220	230	210	210	220	240	260
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
Total Alkalinity	180	190	180	190	220	220	230	210	210	220	240	260
Calcium	86	64	82	85	87	96	100	82	78	97	100	110
Magnesium	20	17	18	18	19	21	23	19	17	21	21	24
Potassium	4.4	3.9	3.8	4.1	4.3	4.7	4.6	4.7	3.7	4.3	4.4	4.6
Sodium	29	25	26	26	28	29	29	28	26	27	27	27
TDS	3,400	420	410	360	410	440	510	430	470	570	420	500
Turbidity	30	<1.0	1.9	2.9	0.15	17	21	13	2.6	3.3	2.1	2.5
Nitrate	45	30	41	32	65	58	85	46	48	100	51	73
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA	NA	NA
Ammonia Nitrogen	<0.02	<1.0	0.11	<0.1	<0.1	0.12	<0.1	NA	NA	NA	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 12 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-10
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date											
	09/09/93	11/29/93	02/16/94	05/18/94	08/15/94	12/11/94	03/10/95	09/21/95	11/21/95	12/20/95	04/25/96	07/10/96
Chloride	21	20	22	20	32	32	31	27	23	22	23	26
Sulfate	63	58	64	64	72	57	56	60	59	60	57	63
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
Bicarbonate Alkalinity	190	200	260	190	420	240	270	220	200	410	220	390
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
Total Alkalinity	190	200	260	190	420	240	270	220	200	410	220	390
Calcium	85	68	110	77	140	98	120	83	77	120	91	140
Magnesium	20	17	23	16	30	22	24	19	17	25	19	30
Potassium	4.1	3.6	4.4	3.8	5.1	4.4	4.7	4.1	3.7	3.9	4.0	4.7
Sodium	30	26	33	27	30	28	28	26	26	24	25	27
TDS	390	360	480	340	640	460	510	440	470	620	370	610
Turbidity	10	<1.0	7.2	0.52	0.41	78	5.3	0.4	1.4	6.4	2.7	0.9
Nitrate	38	25	33	27	58	64	59	46	34	38	36	35
Nitrite	ND	<1.0	<0.1	<0.1	<0.2	<0.5	<1	<0.2	NA	NA	NA	NA
Ammonia Nitrogen	0.02	<1.0	0.11	0.31	0.18	<0.1	<0.1	NA	NA	NA	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

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TABLE 13 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR W-1
(all results in micrograms per liter)

Sample ID	Sampling Method	Date	1,1,1-TCA	1,1-DCA	1,1-DCE	TCE	Toluene	PCE
W-1 @ 290'	AL	5/14/87	<1	<1	<1	<1	<1	<1
W-1 @ 426'	AL	5/15/87	<1	<1	<1	<1	<1	<1
W-1 @ 290'	SP	6/8/87	<1	<1	<1	<1	5'	<1
W-1 @ 420'	SP	6/11/87	<1	<1	<1	<1	7	<1

1,1,1-TCA: 1,1,1-Trichloroethane.

1,1-DCA: 1,1-Dichloroethane.

1,1-DCE: 1,1-Dichloroethene.

TCE: Trichloroethene.

PCE: Tetrachloroethene.

<1: Less than the detection limit of 1.

AL: Air Lift Pump.

SP: Submersible Pump.

Toluene was detected at a concentration of 2 µg/l in the trip blank samples collected on 6/8/87.

TABLE 14 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in micrograms per liter)

Organic Constituent	Sample Date																	
	8/21/91	9/17/91	1/14/92	3/15/92	5/19/92	8/11/92	1/14/93	3/02/93	6/17/93	12/07/93	2/18/94	5/16/94	8/16/94	9/08/94	11/20/95	12/18/95	4/23/96	7/9/96
1,1,1-Trichloroethane	2.4/2.3	1.6	ND	5.1	3.1	4.3	<3	<0.5	3.0	0.3	1.4	<0.2	20	140	<0.2	1.2 ^a	<0.5	3.8
1,1-Dichloroethane	ND/ND	ND	ND	1.3	0.75	0.51	<3	<0.5	<3	0.3	<1	<0.2	<20	<100	0.20	0.28	<0.5	0.96
1,1-Dichloroethene	3.7/3.5	2.8	ND	3.1	3.3	5.5	<3	<0.5	2.9	<0.2	1.0	<0.2	<20	<100	<0.2	2.0	<0.5	6.2
1,2,3-Trichlorobenzene	ND/0.75	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	<0.2	<0.2	<0.5	<0.5
Carbon Tetrachloride	1.1/0.70	1.3	ND	ND	0.85	1.6	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	<0.2	0.32	<0.5	1.6
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<50	<300	<0.2	1.4	1.2	<0.5
Trichloroethene	40/39	27	3.6	130	58	100	54	25	91	4.4	62	3.5	1,800	6,400	7.0	25	7.1	86
Toluene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2	<20	<100	<0.2	<0.2	25	3.9
Tetrachloroethene	1.2/1.0	1.1	ND	1.7	1.4	2.1	<3	2.2	4.9	2.6	1.7	1.4	<20	<100	2.0	2.1	2.5	3.0
cis-1,2-Dichloroethene	ND/ND	ND	ND	3.0	1.6	1.4	<3	0.71	5.0	2.1	3.0	1.1	36	160	1.1	1.3	1.3	1.9
m- & p-xylenes	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2	<20	<100	<0.4	<0.4	<1	<1
p-Isopropyl Toluene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	0.31	0.29	0.57	<0.5
Benzene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	<0.4	0.19	<0.5	<0.5

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 15 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	1/15/92	3/17/92	5/20/92	8/10/92	1/14/93	3/02/93	6/18/93	8/19/93	11/30/93	2/16/94	3/09/94
1,1,1-Trichloroethane	ND	2.5	12	15	0.54	<0.5	<3	<1	0.37	<20	<1
1,1-Dichloroethane	ND	ND	0.53	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1
1,1-Dichloroethene	ND	2.4	13	17	0.64	<0.5	<3	<1	<0.2	<20	<1
Carbon Tetrachloride	ND	0.57	3.3	3.8	<0.5	<0.5	<3	<1	<0.2	<20	<1
Trichloroethene	1.6	31	83	150	24	19	48	48	29	890	60
Tetrachloroethene	ND	0.58	1.9	2.3	0.71	0.62	<3	<1	1.7	<20	1.4
Toluene	ND	ND	ND	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1
cis-1,2-Dichloroethene	ND	ND	ND	ND	<0.5	<0.5	<3	<1	0.4	<20	<1
Dichlorodifluoromethane	ND	ND	ND	ND	<0.5	<0.3	<3	<1	<0.2	<20	<1
Bromodichloromethane	ND	ND	ND	ND	<0.5	<0.3	<3	<1	<0.2	<20	<1
Trans-1,2-Dichloroethene	ND	ND	ND	ND	<0.5	<0.3	<3	<1	<0.2	<20	<1

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 15 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2
(all results in micrograms per liter)

Organic Constituent	5/18/94	8/16/94	9/08/94	11/22/94	12/12/94	3/09/95	9/21/95	11/19/95	12/19/95	4/23/96	7/9/96
1,1,1-Trichloroethane	<0.2	10	12	1.5	0.5	11/10	<0.2	<0.2	2.2	<0.5 ^a	0.81
1,1-Dichloroethane	<0.2	<10	<10	0.5	0.3	<5/0.9	0.59	0.50	0.53	0.71	<0.5
1,1-Dichloroethene	<0.2	<10	17	1.3	0.5	10/8.5	<0.2	<0.2	4.9	<0.5	1.7
Carbon Tetrachloride	<0.2	12	14	1.6	0.7	<5/3.7	<0.2	<0.2	3.8	<0.5	2.0
Trichloroethene	9.6	830	810	43	13	250/180	5.1	4.8	50	6.7	21
Tetrachloroethene	0.99	<10	<10	2.1	1.9	<5/2.7	5.0	3.0	1.8	5.0	2.8
Toluene	<0.2	<10	<10	<0.2	<0.2	<5/ <0.2	<0.2	<0.2	<0.2	15	3.5
cis-1,2-Dichloroethene	0.49	<10	<10	1.7	1.4	<5/1.1	3.4	2.7	1.3	4.3	2.1
Dichlorodifluoromethane	<0.2	<10	<10	<0.2	0.5	<20/ <0.5	3.3	1.6	0.76	1.4	<0.5
Bromodichloromethane	<0.2	<10	<10	<0.2	<0.2	<5/0.3	<0.2	<0.2	<0.2	<0.5	<0.5
Trans-1,2-Dichloroethene	<0.2	<10	<10	<0.2	<0.2	<5/ <0.2	0.20	<0.2	<0.2	<0.5	<0.5

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 16 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	9/17/91	1/16/92	3/16/92	5/19/92	8/12/92	1/14/93	3/02/93	6/18/93	8/19/93	11/30/93	2/16/94
1,1,1-Trichloroethane	7.9	ND/ND	22/20	7.5/7.0	13	<5	<5	<50	<1	0.6	0.31
1,1-Dichloroethane	0.55	ND/ND	6.6/ND	1.5/1.4	ND	<5	<5	<50	<1	<0.2	<4
1,1-Dichloroethene	8.5	ND/ND	11/ND	6.6/5.5	13	<5	<5	<50	<1	0.4	0.31
Carbon Tetrachloride	2	ND/ND	ND/ND	1.1/ND	ND	<5	<5	<50	<1	<0.2	<4
Trichloroethene	100	4.7/6.4	620/820	100/160	240	68	47	2200	49	15	15
Tetrachloroethene	2.7	ND/ND	ND/ND	2.0/1.8	3.3	<5	<5	<50	2.2	1.6	<4
cis-1,2-Dichloroethene	0.8	ND/ND	13/ND	2.1/1.9	2.8	<5	<5	<50	<1	<0.2	0.26
Toluene	ND	ND/ND	ND/ND	ND/ND	ND	<5	<5	<50	<1	0.2	<4
Naphthalene	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20
Dichlorodifluoromethane	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20
P-Isopropyl Toluene	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20
Bromodichloromethane	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

002918

TABLE 16 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	5/18/94	8/16/94	9/08/94	12/13/94	3/09/95	9/21/95	11/20/95	12/19/95	04/23/96	07/09/96	
1,1,1-Trichloroethane	<0.2	21	83	1.4	30/21	<0.2	0.36	6.6	<0.5	2.6	
1,1-Dichloroethane	<0.2	<20	51	<1	12/9.3	0.33	0.64	0.98	0.63	2.6	
1,1-Dichloroethene	<0.2	22	59	1.5	22/15	0.63	0.61	11	<0.5	5.3	
Carbon Tetrachloride	<0.2	<20	<50	<1	<10/2.8	0.84	0.49	5.0	<0.5	3.2	
Trichloroethene	6.0	1,200	4,300	36	1300/810	18	15	160	11	90	
Tetrachloroethene	0.71	<20	<50	2.4	<10/6.6	2.2	1.5	2.4	2.2	1.6	
cis-1,2-Dichloroethene	<0.2	<20	79	1.7	13/9.8	1.3	1.2	1.5	1.8	0.87	
Toluene	<0.2	<20	<50	<1	<10/ <1	<0.2	<0.2	<0.2	13	5.8	
Naphthalene	<1	150	<300	<5	<50/ <5	<1	<1	<1	<1	<1	
Dichlorodifluoromethane	<1	<20	<300	<5	<30/ <3	1.6	0.64	0.60	<0.5	<0.5	
P-Isopropyl Toluene	<1	<20	<300	<5	<10/ <1	0.48	0.40	0.44	<0.5	<0.5	
Bromodichloromethane	<1	<20	<300	<5	<10/ <1	<1	<1	0.25	<0.5	<0.5	

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

002919

TABLE 17- HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7
(all results in micrograms per liter)

Organic Constituent	Sample Date													
	09/08/93	11/29/93	02/16/94	03/08/94	05/18/94	08/15/94	09/07/94	12/11/94	03/10/95	09/21/95	11/22/95	12/20/95	04/24/96	07/10/96
1,1,1-Trichloroethane	0.19	<0.5	<40	<0.4	<0.2	<1	<1	8.1	51/43	1.6	0.34	14	0.54	63
1,1,2,2-Tetrachloroethane	<0.2	<0.5	<40	0.46	<0.2	<1	<1	<5	<40/<20	<0.2	<0.2	<0.2	<0.5	<10
1,2,4-Trichlorobenzene	<0.2	<0.5	<40	0.50	<0.2	<1	<1	<5	<40/<20	<0.2	<0.2	<0.2	<0.5	<10
Trichloroethene	33	7.7	3100	35	0.36	22	48	440	4700/5500	110	27	2400	42	17000
Tetrachloroethene	0.21	<0.5	<40	0.72	<0.2	<1	<1	<5	<40/<20	1.6	0.53	7.7	1.2	36
cis-1,2-dichloroethene	0.58	<0.5	56	1.0	<0.2	2.1	2.3	8.9	70/67	1.4	0.80	45	1.3	190
Toluene	<0.2	<0.5	<40	<0.4	0.15	<1	<1	<5	<40/<20	<0.2	<0.2	<0.2	3.1	<10
1,1-Dichloroethene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	7.7	<40/22	1.2	0.48	9.2	0.80	42
Carbon Tetrachloride	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<40/<20	1.6	0.55	2.2	0.89	<10
1,1-Dichloroethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<40/37	0.67	0.22	14	<0.5	60
Dichlorodifluoromethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<100/<20	0.64	0.56	0.44	0.69	<10
P-Isopropyl Toluene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<10/<1	0.51	<0.2	0.20	<0.5	<10
1,1,2-Trichloroethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<10/<1	<0.2	<0.2	0.53	<0.5	<10
Benzene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<10/<1	<0.2	<0.2	0.59	<0.5	<10
trans-1,2-Dichloroethene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<10/<1	<0.2	<0.2	0.39	<0.5	<10

ND: Not Detected.
 <3: Less than the detection limit of 3.
 UTD: Unable to Determine Low Detection Limit.
 NA: Not Analyzed.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 18 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-8
(all results in micrograms per liter)

Organic Constituent	Sample Date												
	09/09/93	11/29/93	02/16/94	05/17/94	08/15/94	09/07/94	12/10/94	03/09/95 *	09/20/95	11/21/95 *	12/19/95	04/24/96	07/10/96
1,1,1-Trichloroethane	<0.2	<0.5	0.25	<0.2	<0.2	<0.2	<0.2	<2/1.6	<0.2	2.2/ <2	3.8	<0.5	4.9
1,2,3-Trichlorobenzene	<0.2	<0.5	0.29	<0.2	<0.2	<0.2	<0.2	<2/ <0.2	<0.2	<0.2/ <2	<0.2	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.2	<0.5	0.23	<0.2	<0.2	<0.2	<0.2	<2/ <0.2	<0.2	<0.2/ <2	<0.2	<0.5	<0.5
1,2-Dichloroethane	0.17	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/ <0.2	<0.2	<0.2/ <2	<0.2	<0.5	<0.5
Carbon Tetrachloride	<0.2	<0.5	0.92	<0.2	0.58	1.4	0.3	<2/2.0	<0.2	2.4/ <2	4.2	<0.5	5.6
Trichloroethene	0.80	0.9	30	1.2	28	32	8.6	190/170	6.4	170/170	310	6.9	680
Tetrachloroethene	0.30	0.6	0.77	0.79	0.66	0.40	2.9	2.5/3.6	4.9	5.0/4.8	7.4	2.9	7.8
cis-1,2-dichloroethene	0.22	0.6	0.5	0.55	0.39	0.30	1.7	<2/1.2	2.0	1.8/ <2	2.4	1.5	2.1
1,1-Dichloroethane	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	0.3	<2/ <0.2	0.40	0.26/ <2	0.22	<0.5	<0.5
1,1-Dichloroethene	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/2.0	<0.2	2.2/ <2	3.8	<0.5	4.4
Dichlorodifluoromethane	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/2.0	3.9	1.4/ <5	1.4	1.2	<0.5
Toluene	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/ <0.2	<0.2	<2/ <0.2	<0.2	0.56	<0.5

ND: Not Detected.

<3: Less than the detection limit of 3.

*: Includes both low and high dilution results.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 19 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-9
(all results in micrograms per liter)

Organic Constituent	Sample Date												
	09/08/93	11/29/93	02/16/94	05/17/94	08/16/94	09/07/94	12/10/94	03/09/95	09/20/95	11/21/95	12/19/95	04/24/96	07/09/96
1,1,1-Trichloroethane	<0.2	<0.5	0.42	<0.2	3.1	2.4	0.5	3.1/3.2	<0.2	<0.2	5.6	<0.5	12
1,1-Dichloroethene	<0.2	<0.5	0.4	<0.2	2.9	2.9	0.5	2.2/2.6	<0.2	<0.2	5.2	<0.5	5.4
Dichlorodifluoromethane	1.0	<0.5	<0.2	<0.2	<3	<3	<0.5	<3/<0.5	<0.5	1.4	2.3	1.1	0.76
Trichloroethene	2.4	3.1	16	3.4	110	75	9.4	71/87	0.47	5.8	97	14	230
Tetrachloroethene	0.28	0.5	1.1	<0.2	7.6	4.4	1.9	6.0/9.2	0.48	1.0	13	5.2	28
cis-1,2-dichloroethene	0.31	<0.5	<0.2	<0.2	<1	<1	0.5	<1/<0.2	0.37	0.54	0.95	1.5	0.77
1,3-Dichloropropane	<0.2	<0.5	<0.2	0.48	<1	<1	<0.2	<1/<0.2	<0.2	<0.2	<0.2	<0.5	<0.5
Carbon Tetrachloride	<0.2	<0.5	<0.2	<0.2	<1	1.8	0.3	1.4/1.6	<0.2	<0.2	1.2	<0.5	2.5

ND: Not Detected.
 <3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

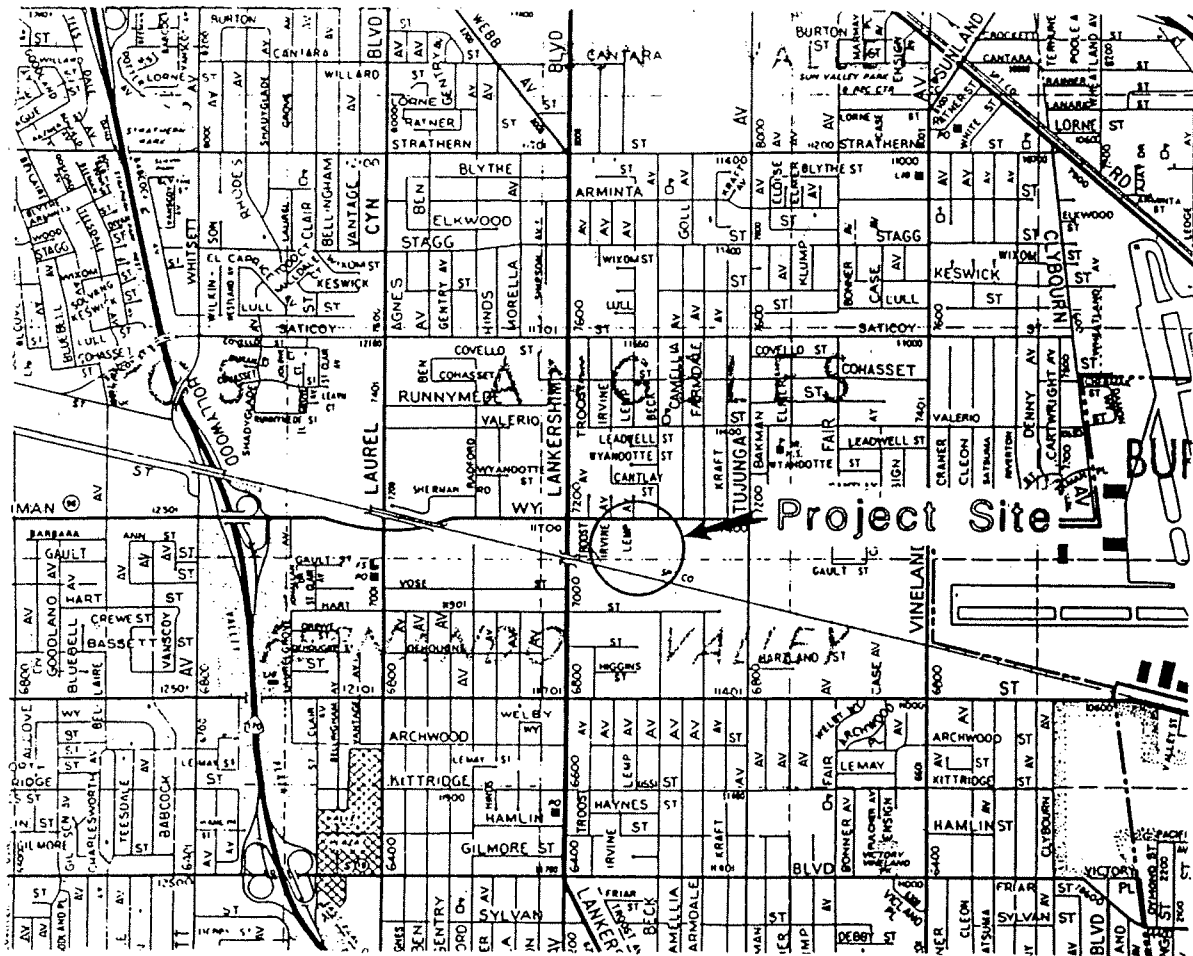
TABLE 20 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-10
(all results in micrograms per liter)

Organic Constituent	Sample Date													
	09/09/93	11/29/93	02/16/94	03/07/94	05/18/94	08/15/94	09/07/94	12/11/94	03/10/95	09/21/95	11/21/95	12/20/95	04/25/96	07/10/96
1,1-Dichloroethane	0.10	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	11	<0.5	8.6
Dichlorodifluoromethane	4.2	<0.5	<40	<2	<0.2	<300	<300	<20/NA	<30	1.5	1.1	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.14	<0.5	<40	<2	<0.2	<100	<100	7.2/3.2	<10	<0.2	<0.2	48	<0.5	89
Trichloroethene	50	15	2300	210	12	9,000	4,700	360/UTD	1100	21	30	3200	48	11000
Tetrachloroethene	1.5	1.2	<40	<2	1.0	<100	<100	<5/2.9	<10	2.3	2.3	44	2.6	81
cis-1,2-dichloroethene	1.3	<0.5	52	4.4	0.25	170	100	7.5/5.9	12	0.94	0.61	140	1.0	230
1,1-Dichloroethene	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/4.5	<10	<0.2	<0.2	35	<0.5	53
Carbon Tetrachloride	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/2.0	<10	<0.2	<0.2	5.3	<0.5	8.3
1,1,2-Trichloroethane	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	5.3	<0.5	4.5
1,2-Dichloroethane	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	2.0	<0.5	1.5
Benzene	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	2.7	<0.5	2.8
trans-1,2-Dichloroethene	<0.5	0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	1.1	<0.5	5.6
Toluene	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	<0.5	2.3	<0.5

ND: Not Detected
<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

FIGURES



Source: The Thomas Guide, Los Angeles and
Orange Counties, 1987, Page 16.

Scale: 1" = 2800'

002925

SECOR International Incorporated

3437 Empresa Dr., Suite A, San Luis Obispo, CA 93401 (805) 546-0455

CAD FILE: AS8-A057VM

PROJECT # A0057-001-01

VICINITY MAP

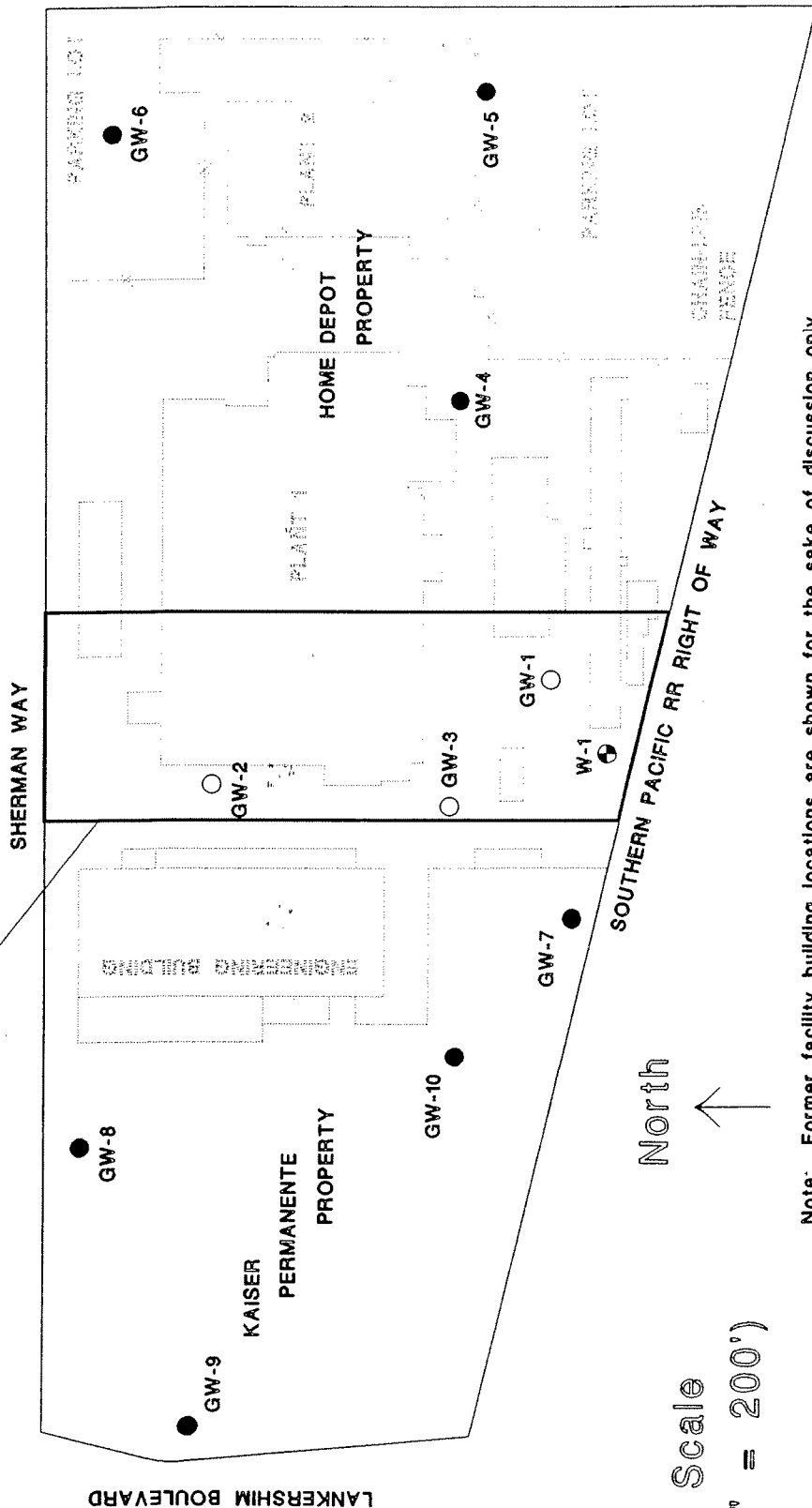
ALLIEDSIGNAL
AEROSPACE COMPANY
NORTH HOLLYWOOD FACILITY

DATE: MARCH 1995

FIGURE:

1

AlliedSignal AEROSPACE
 SITE BOUNDARY



Scale
 (1" = 200')

Note: Former facility building locations are shown for the sake of discussion only.

Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- ⊙ Denotes approximate location of abandoned monitoring well.

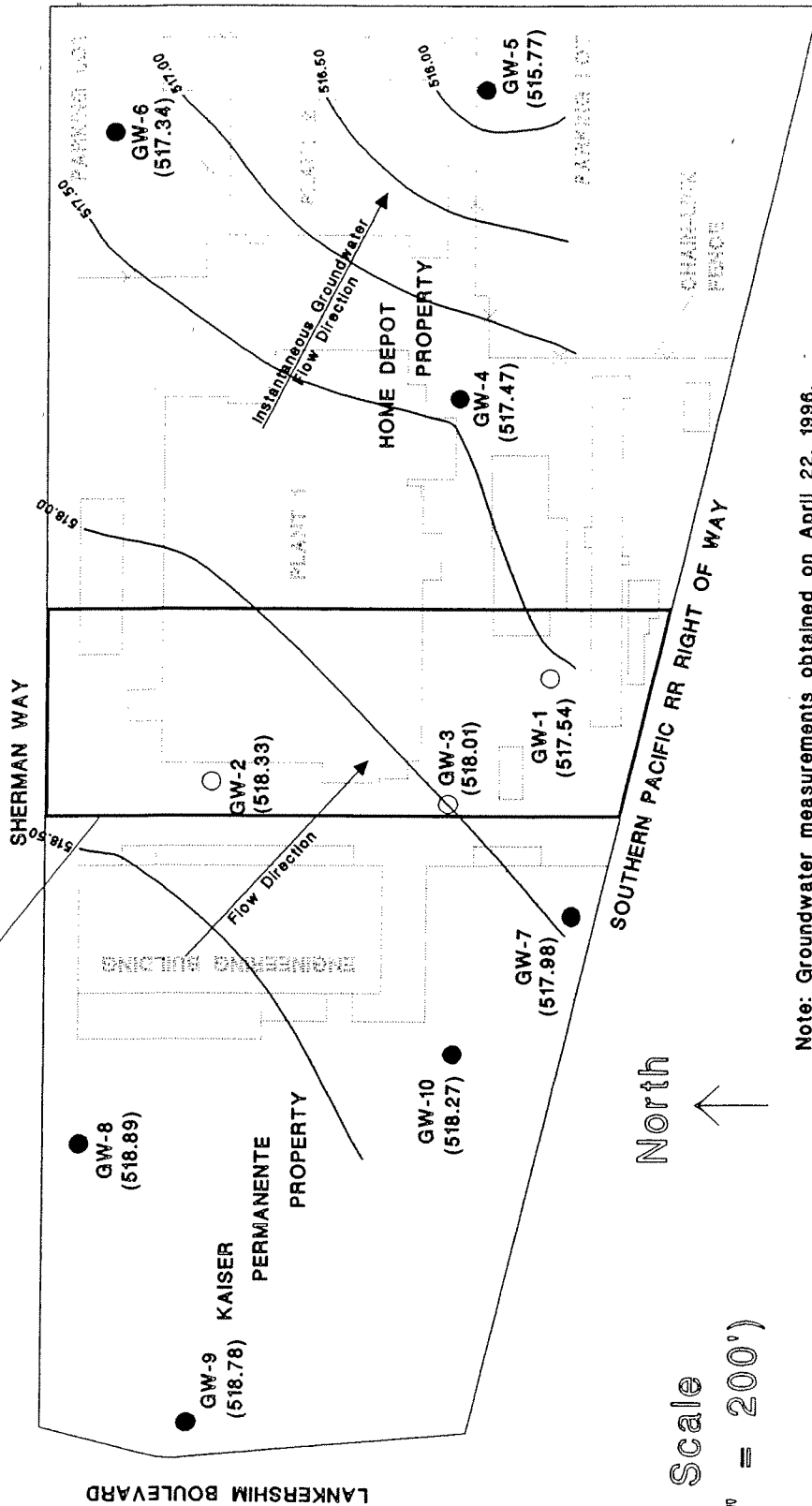
AlliedSignal
 AEROSPACE COMPANY
 North Hollywood Facility

SITE MAP
 FIGURE 2

File Name: AS10-SMAS

SECOR

AlliedSignal AEROSPACE
SITE BOUNDARY



Note: Groundwater measurements obtained on April 22, 1996.

Legend:

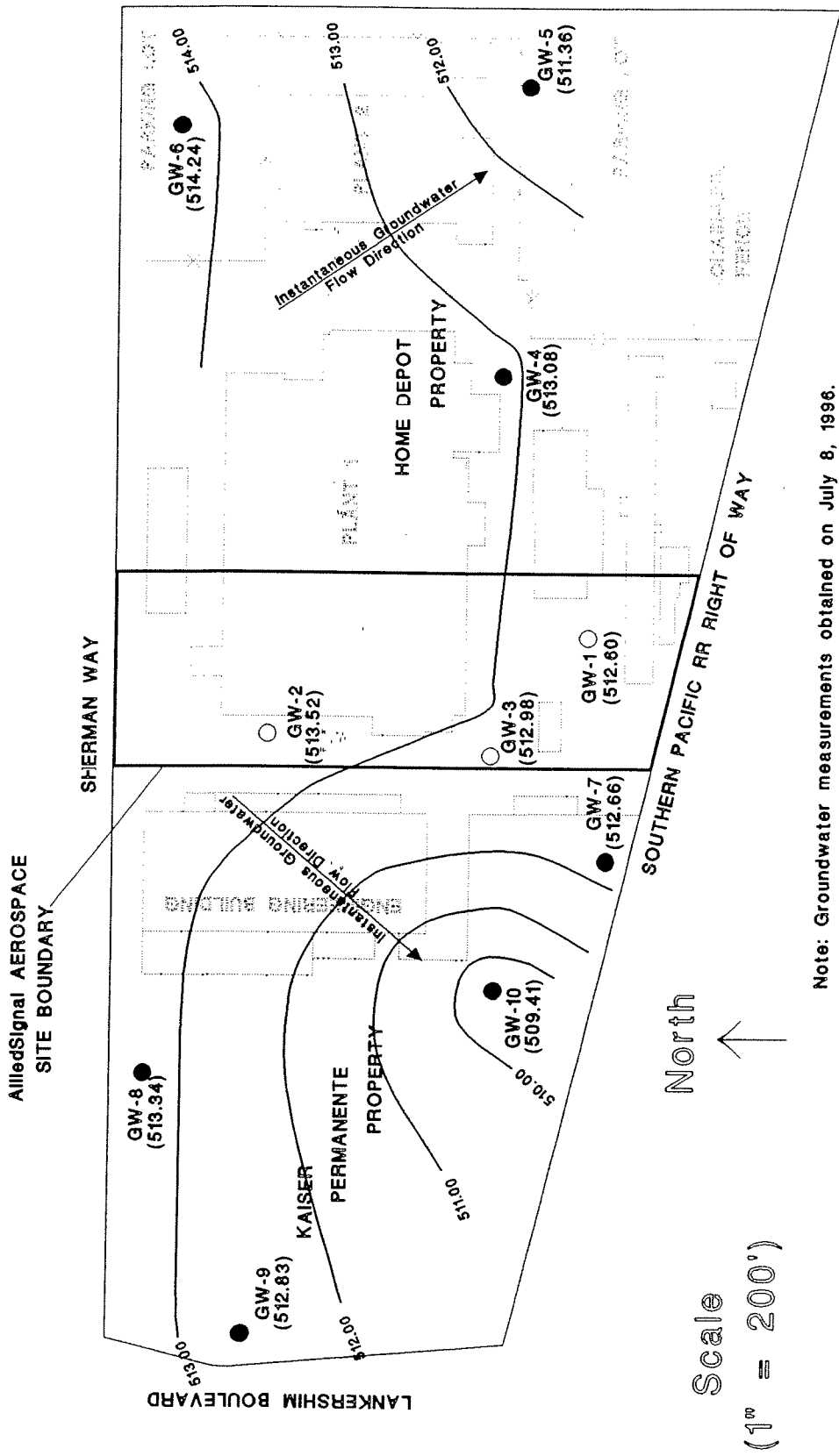
- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- Denotes groundwater surface elevation in feet above mean sea level.
- 517.00 — Denotes groundwater contour line and elevation.

AlliedSignal
AEROSPACE COMPANY
North Hollywood Facility

GROUNDWATER
CONTOUR MAP
(04/22/96)
FIGURE 3

File Name: AS10-ASG0496

SECOR



Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- 517.54 Denotes groundwater surface elevation in feet above mean sea level.
- 517.00 — Denotes groundwater contour line and elevation.

AlliedSignal
AEROSPACE COMPANY
North Hollywood Facility

GROUNDWATER
CONTOUR MAP
(07/08/96)
FIGURE 4

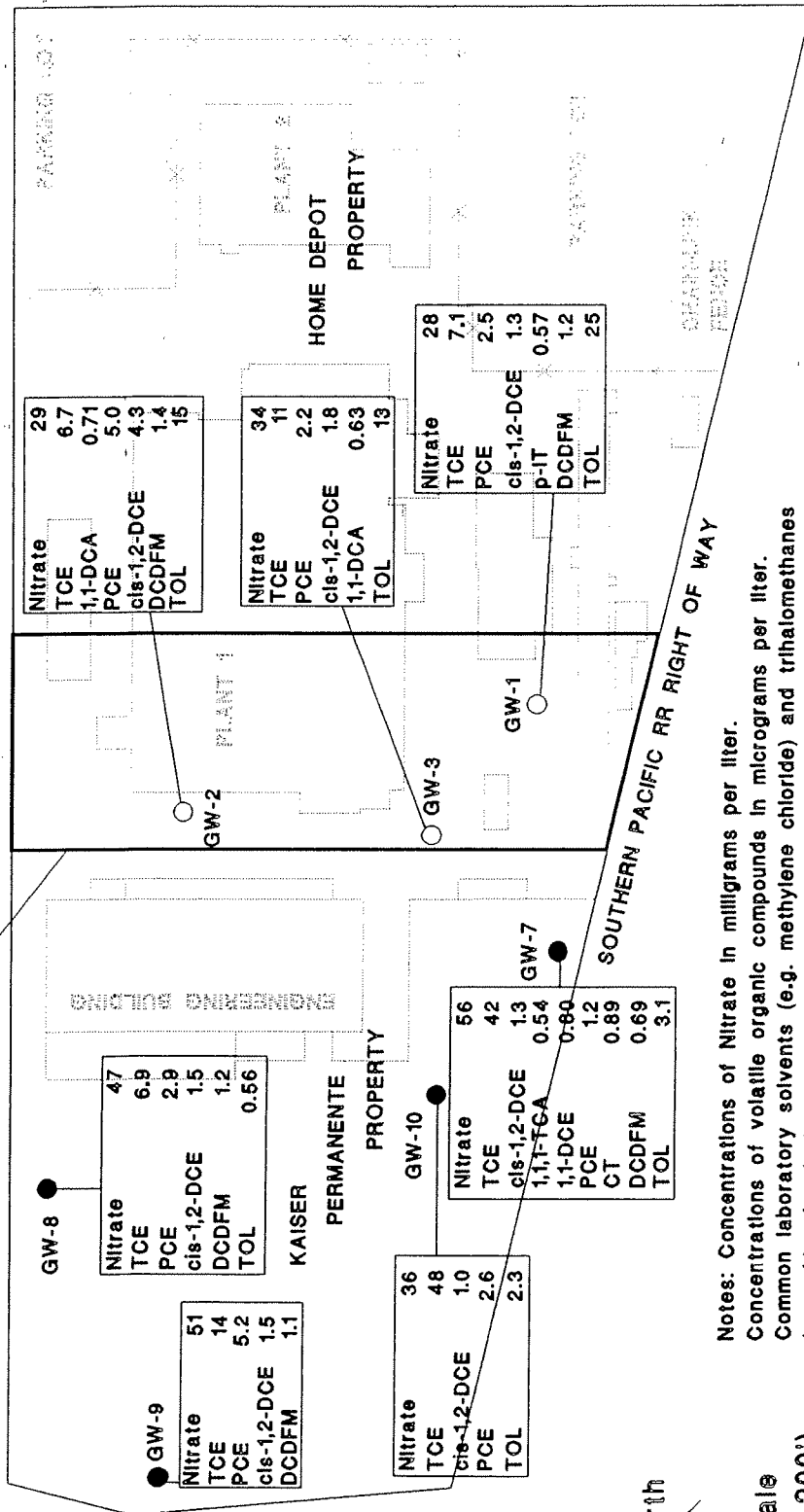
File Name: AS10-ASG0796

SECOR

AlliedSignal AEROSPACE

SITE BOUNDARY

SHERMAN WAY



Notes: Concentrations of Nitrate in milligrams per liter.
 Concentrations of volatile organic compounds in micrograms per liter.
 Common laboratory solvents (e.g. methylene chloride) and trihalomethanes
 (e.g. chloroform) that were reported at 10 ug/l or less are not shown in the figure.

North

Scale

(1" = 200')

Legend:

- TCE
- PCE
- cis-1,2-DCE
- 1,1,1-TCA
- 1,1-DCE
- 1,1-DCA
- CT
- DCDFM
- p-IT
- TOL
- Trichloroethene
- Tetrachloroethene
- cis-1,2-Dichloroethene
- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Carbon Tetrachloride
- Dichlorodifluoromethane
- p-isopropyl Toluene
- Toluene

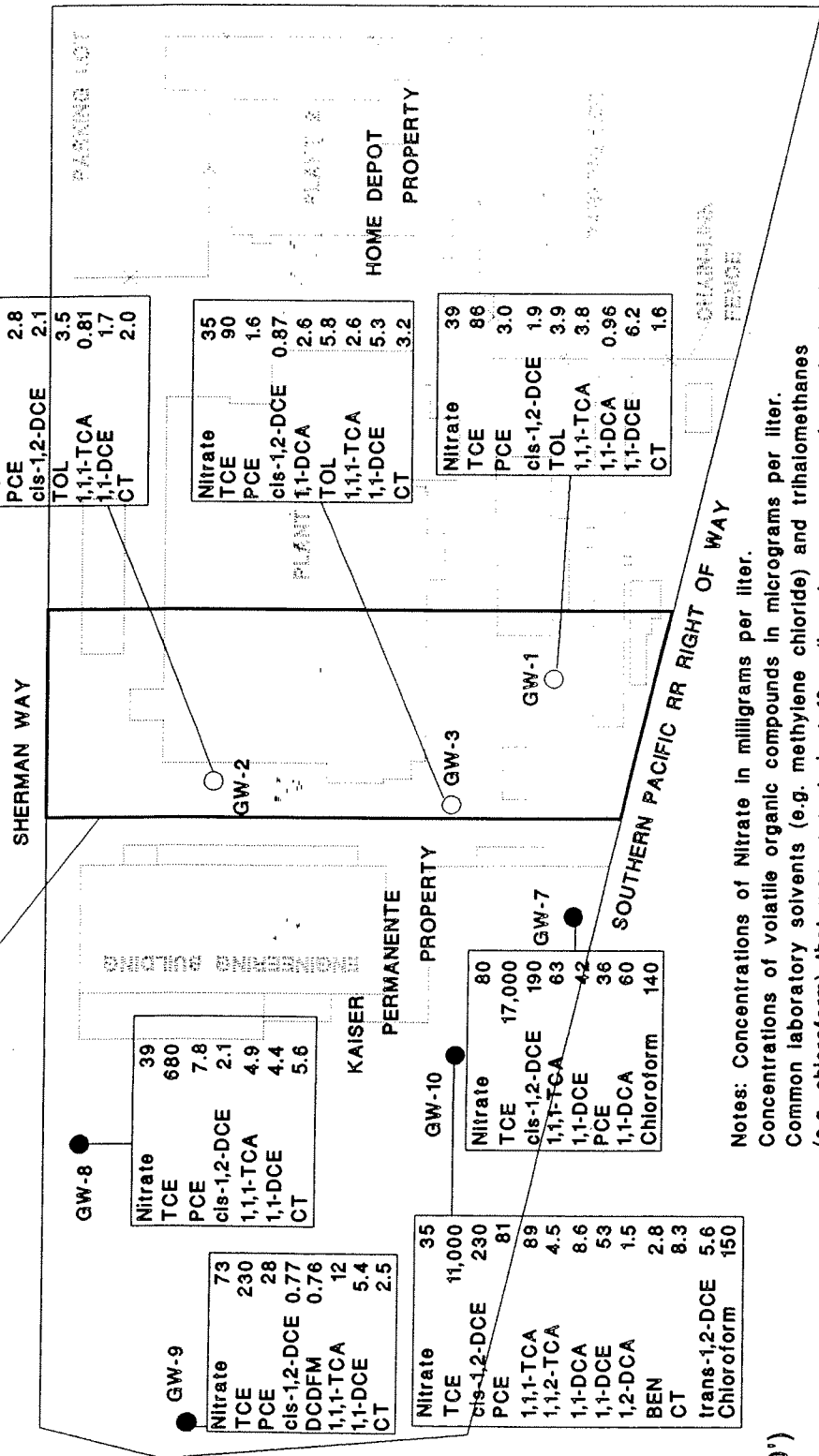
NITRATE AND VOC
 CONCENTRATION MAP
 (4/23-25/1996)
 FIGURE 5

AlliedSignal
 AEROSPACE COMPANY
 North Hollywood Facility

File Name: AS10-A570496N

SECOR

AlliedSignal AEROSPACE
SITE BOUNDARY



Notes: Concentrations of Nitrate in milligrams per liter.
Concentrations of volatile organic compounds in micrograms per liter.
Common laboratory solvents (e.g. methylene chloride) and trihalomethanes (e.g. chloroform) that were reported at 10 ug/l or less are not shown in the figure.

<p>Legend:</p> <p>TCE PCE cis-1,2-DCE 1,1,1-TCA 1,1-DCE 1,1-DCA CT DCDFM TOL 1,1,2-TCA 1,2-DCA BEN trans-1,2-DCE</p>	<p>AlliedSignal AEROSPACE COMPANY North Hollywood Facility</p>	<p>NITRATE AND VOC CONCENTRATION MAP (07/09-10/1996) FIGURE 6</p>
<p>File Name: AS10-A570796N</p>		<p>SECOR</p>

Figure 7
Historic Groundwater Elevations in GW-1

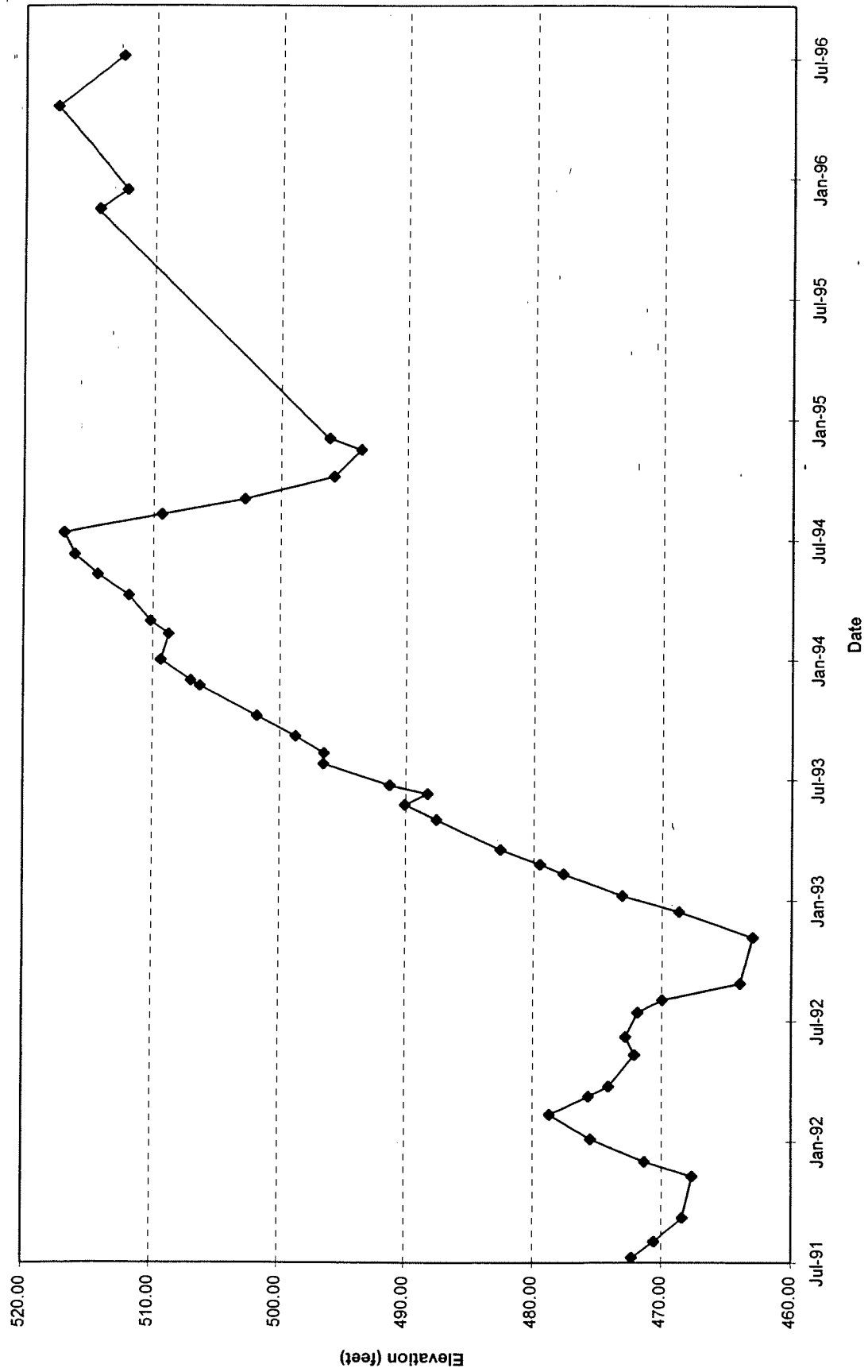


Figure 8
Historic Nitrate Concentrations in GW-1

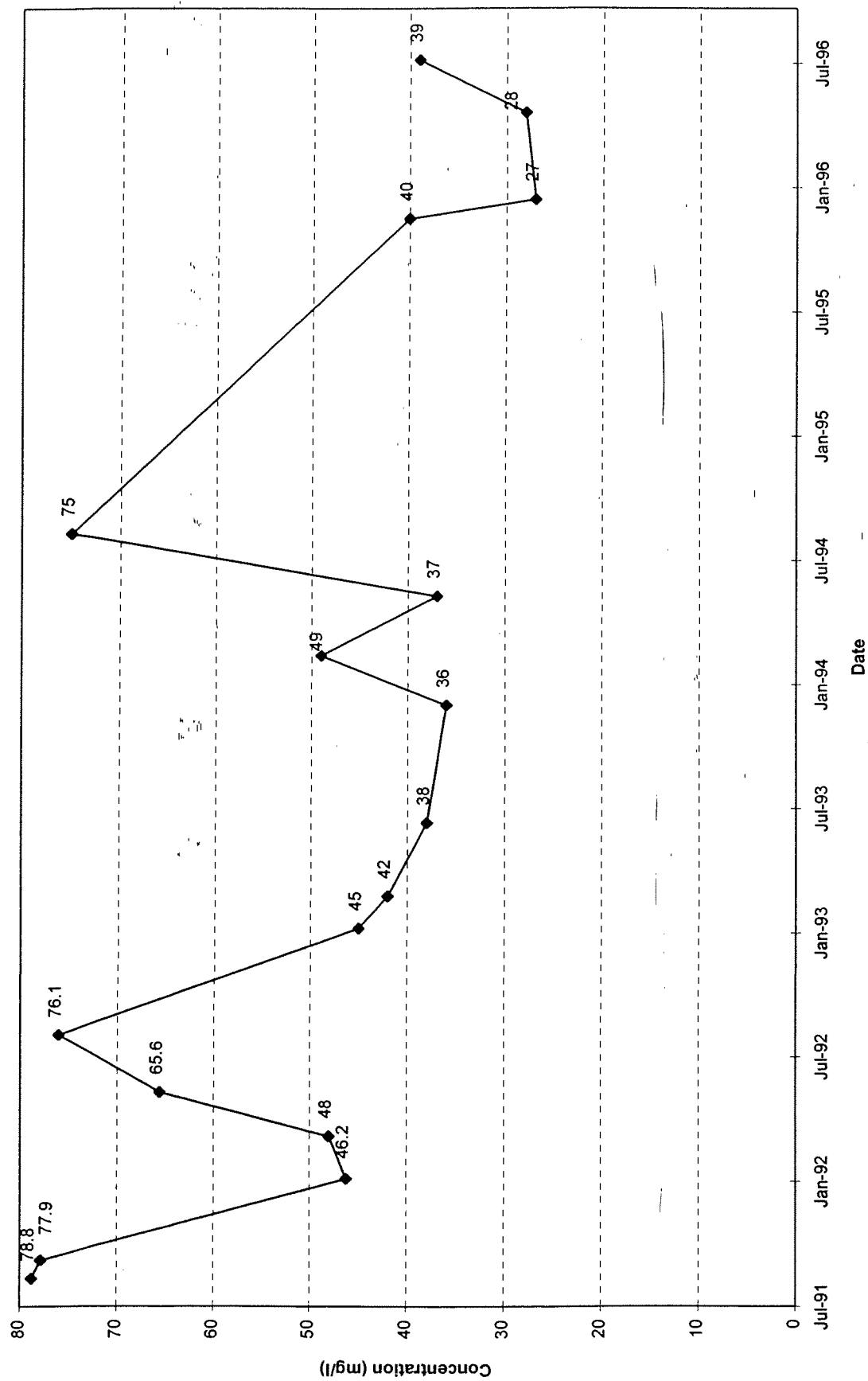


Figure 9
Historic 1,1,1-TCA Concentrations in GW-1

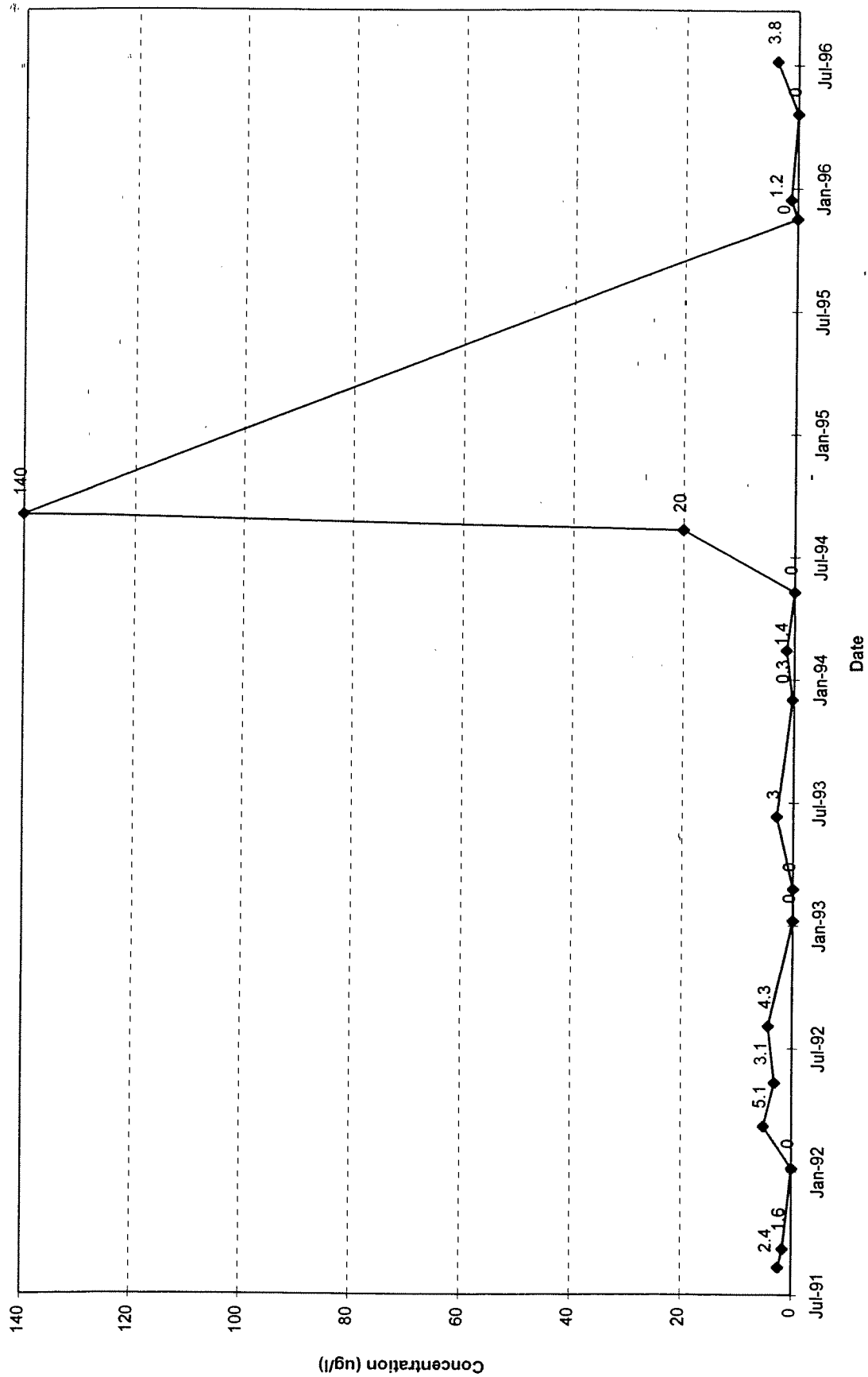


Figure 10
Historic 1,1-DCA Concentrations in GW-1

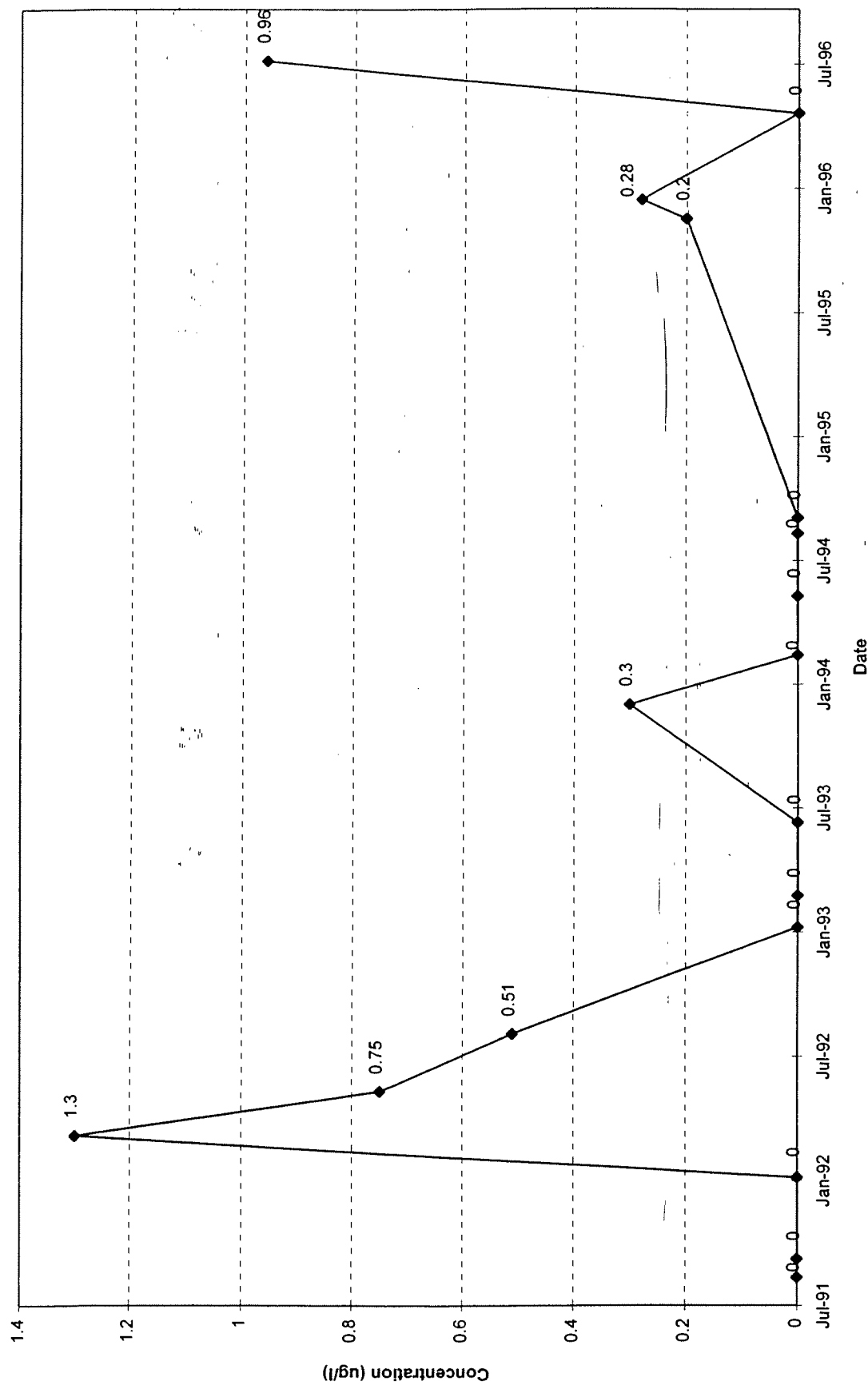


Figure 11
 Historic 1,1-DCE Concentrations in GW-1

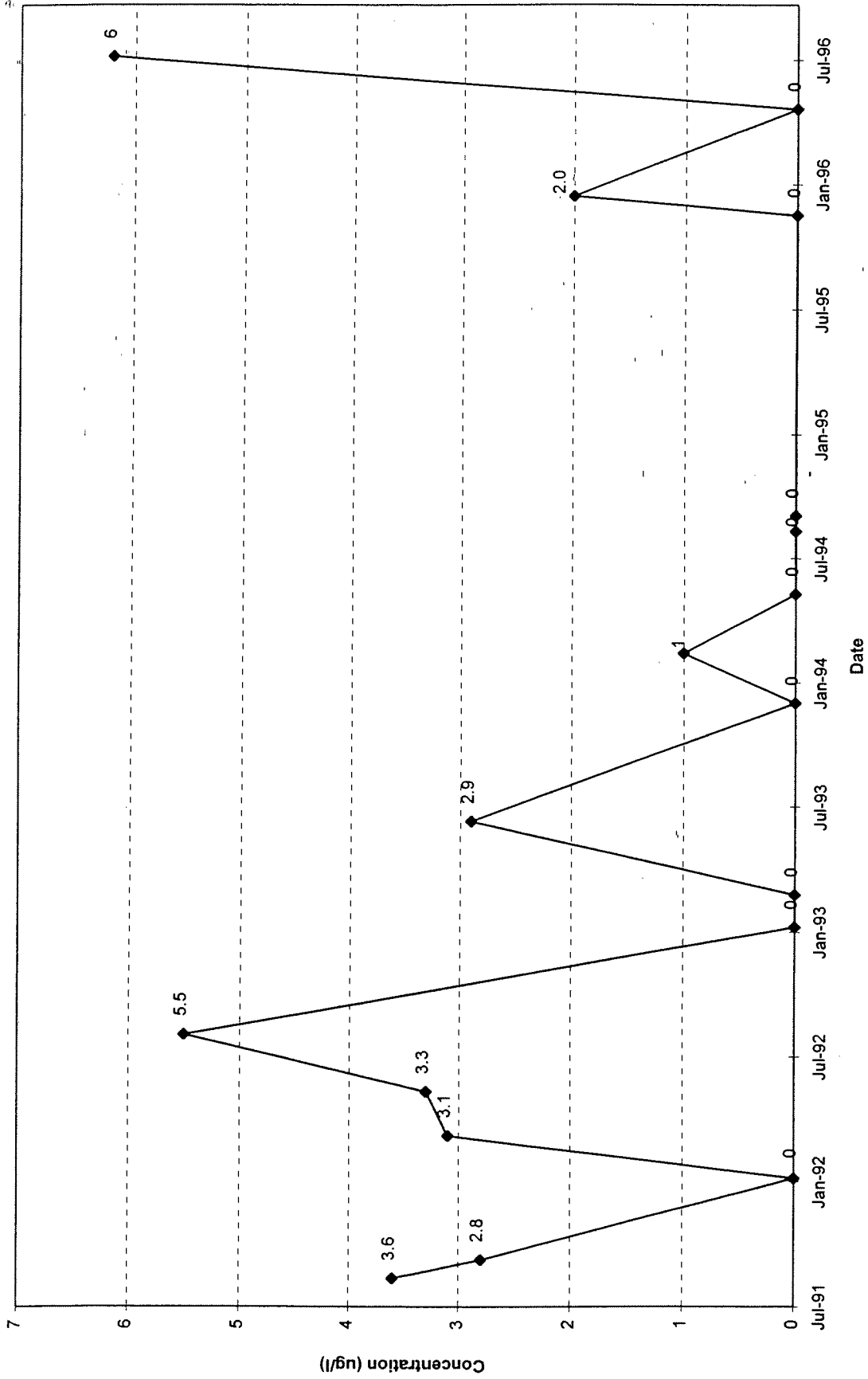


Figure 12
Historic CT Concentrations in GW-1

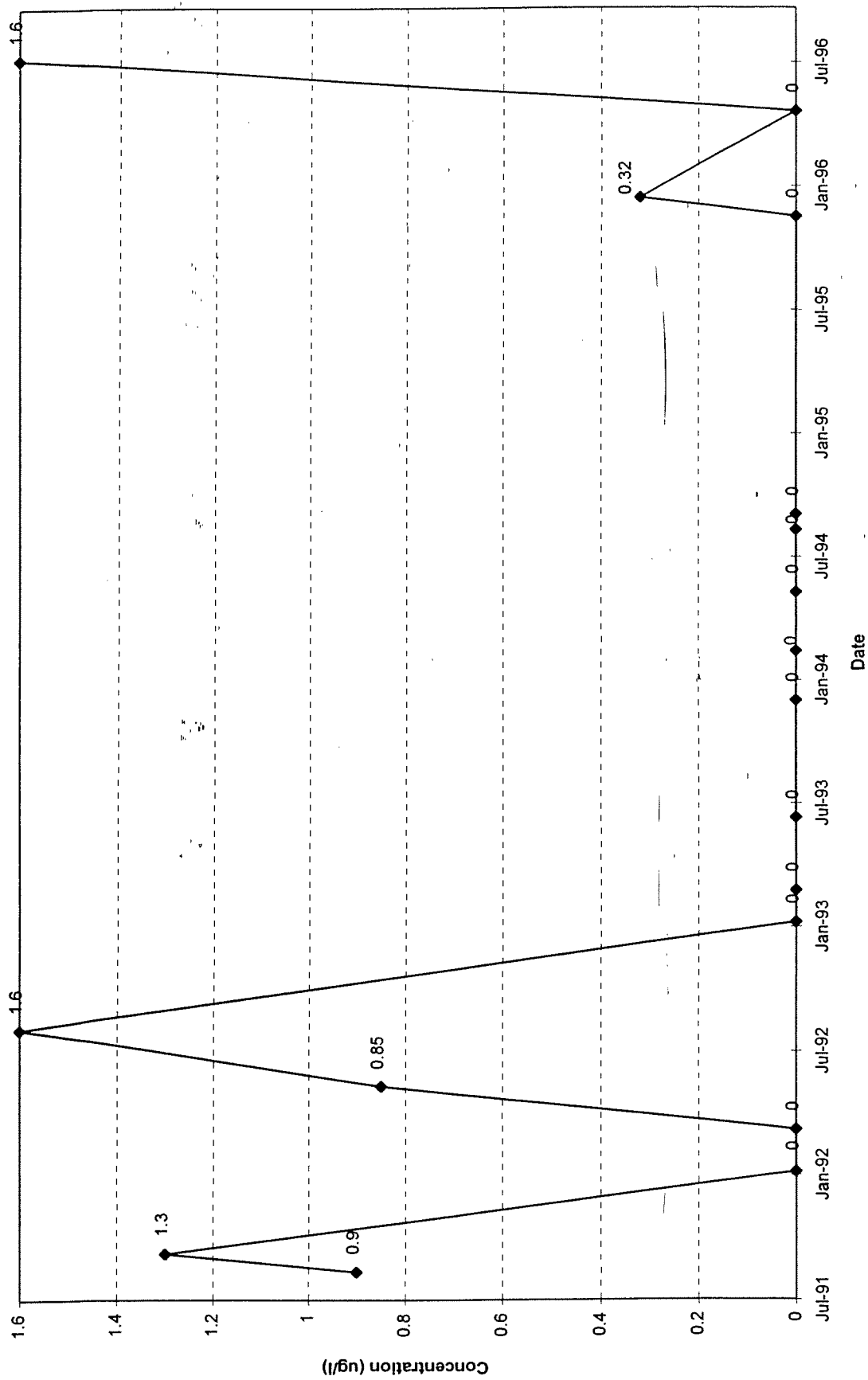


Figure 13
Historic TCE Concentrations in GW-1

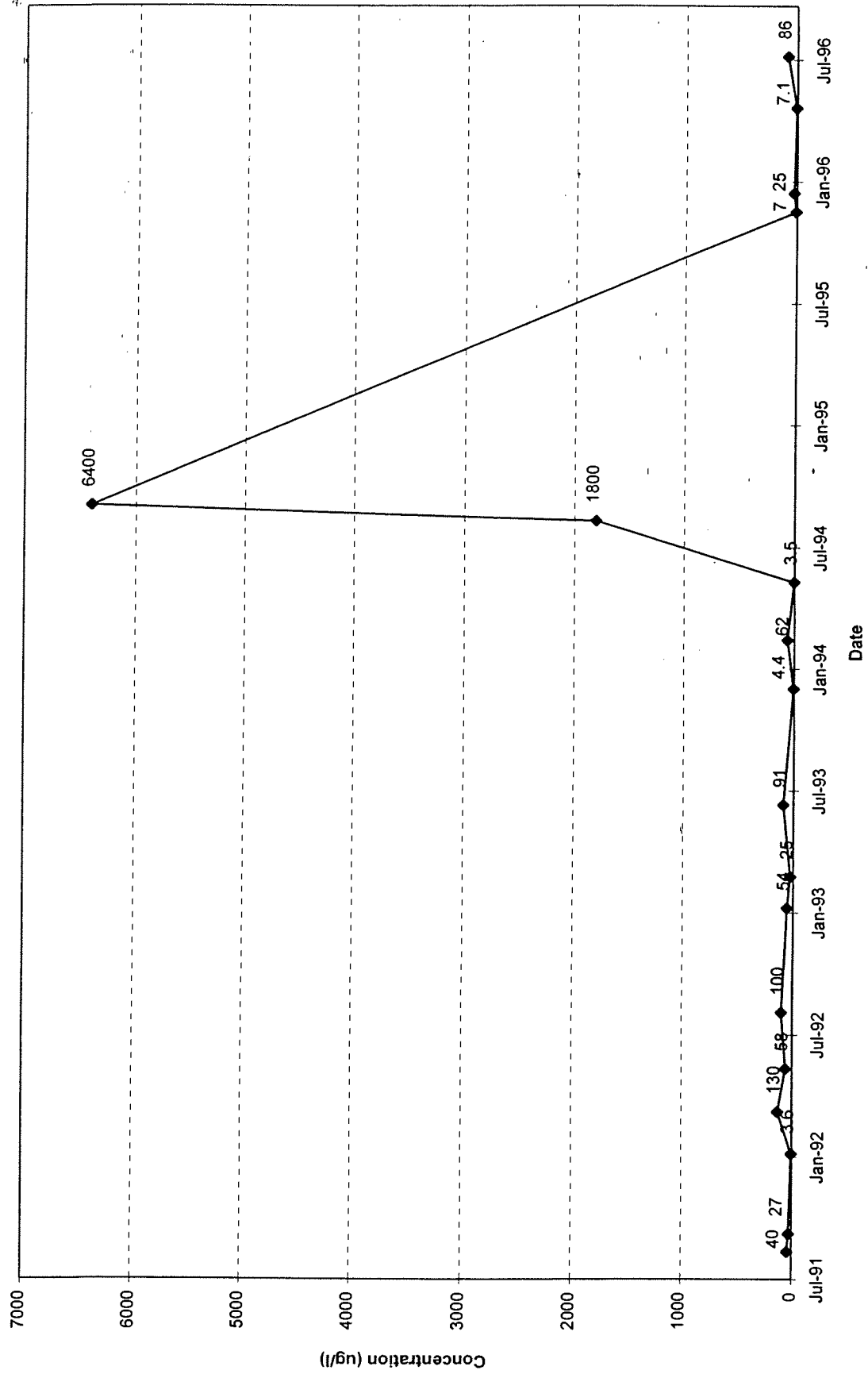


Figure 14
Historic PCE Concentrations in GW-1

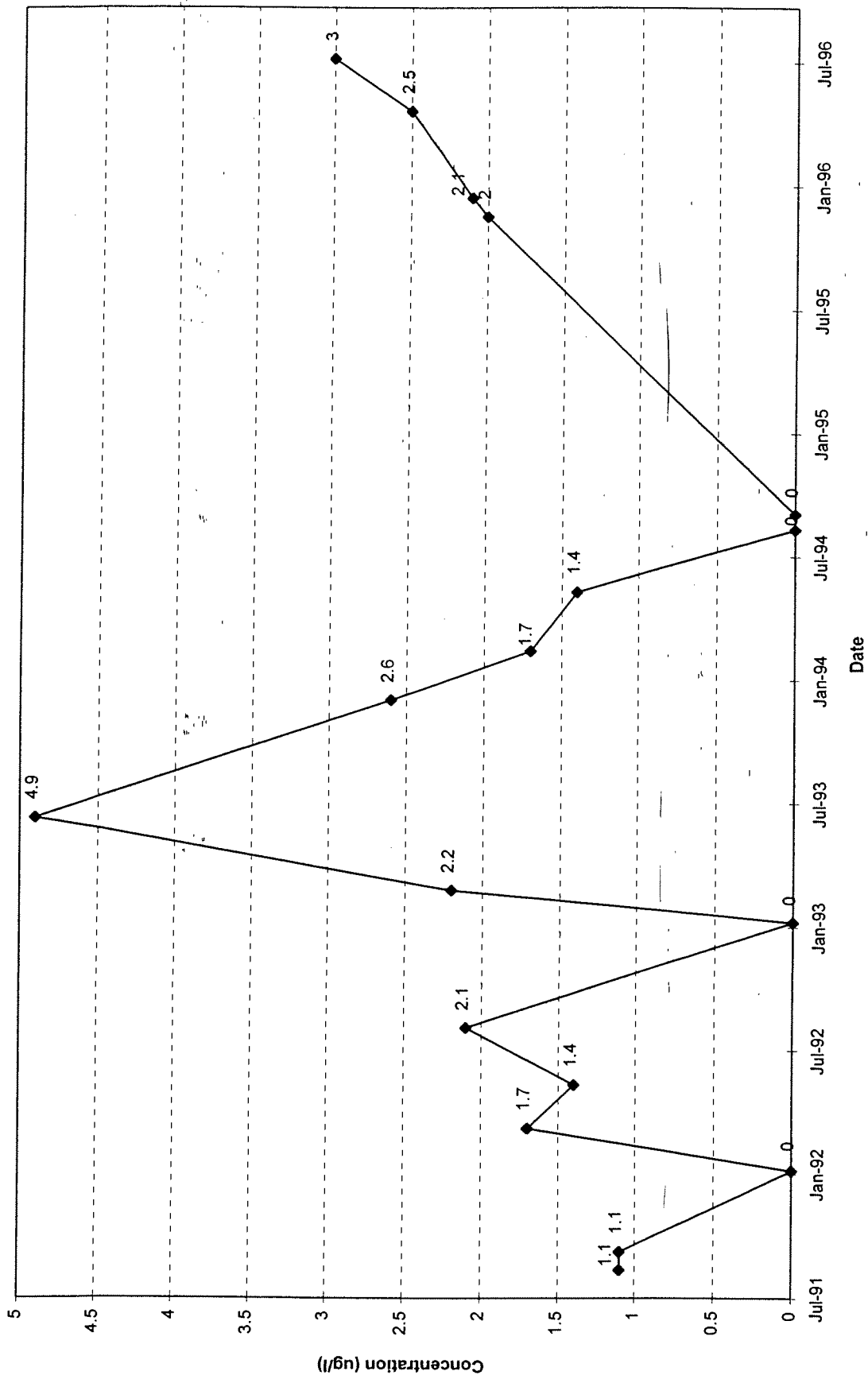


Figure 15
Historic cis-1,2-DCE Concentrations in GW-1

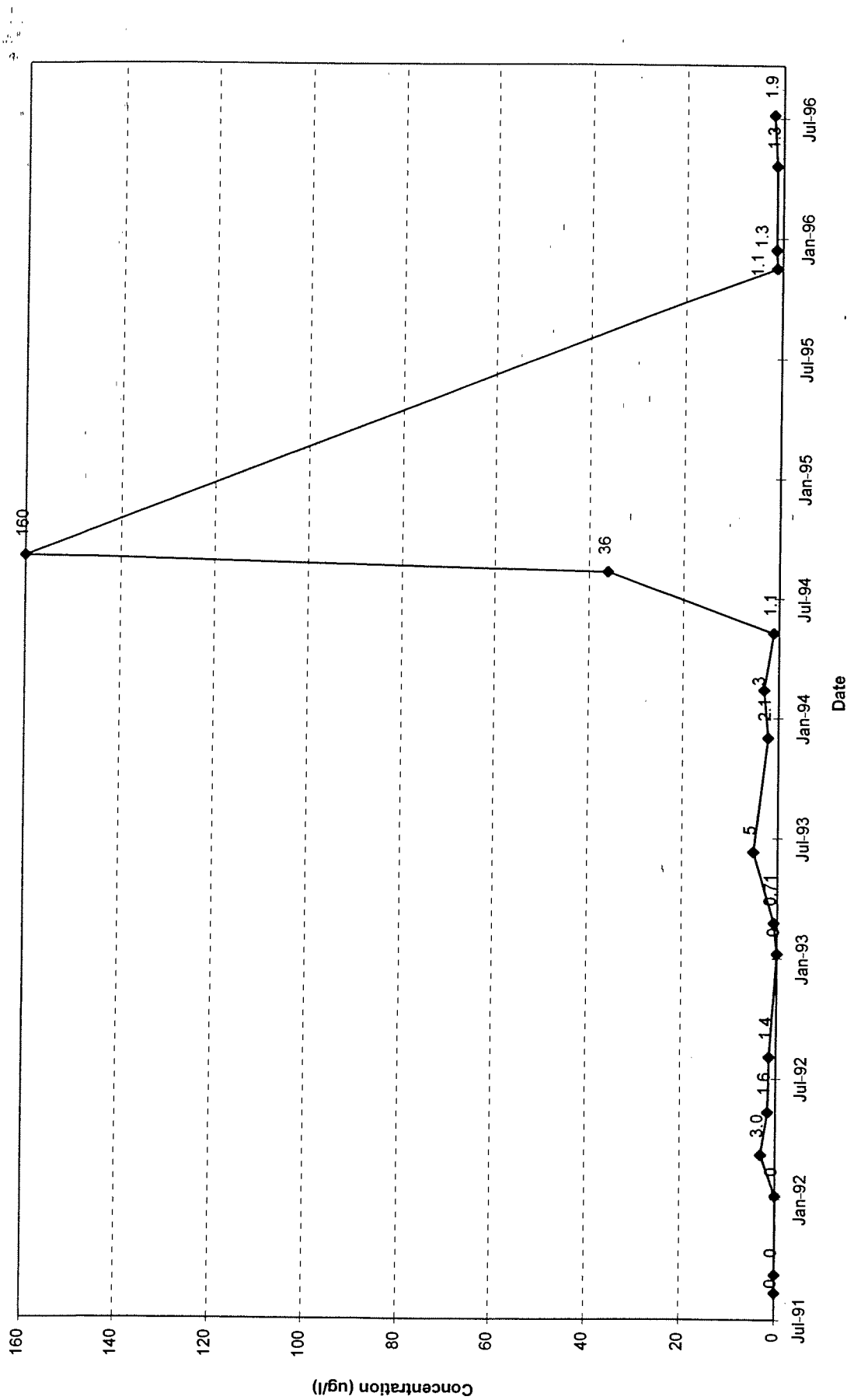


Figure 16
Historic Groundwater Elevations in GW-2

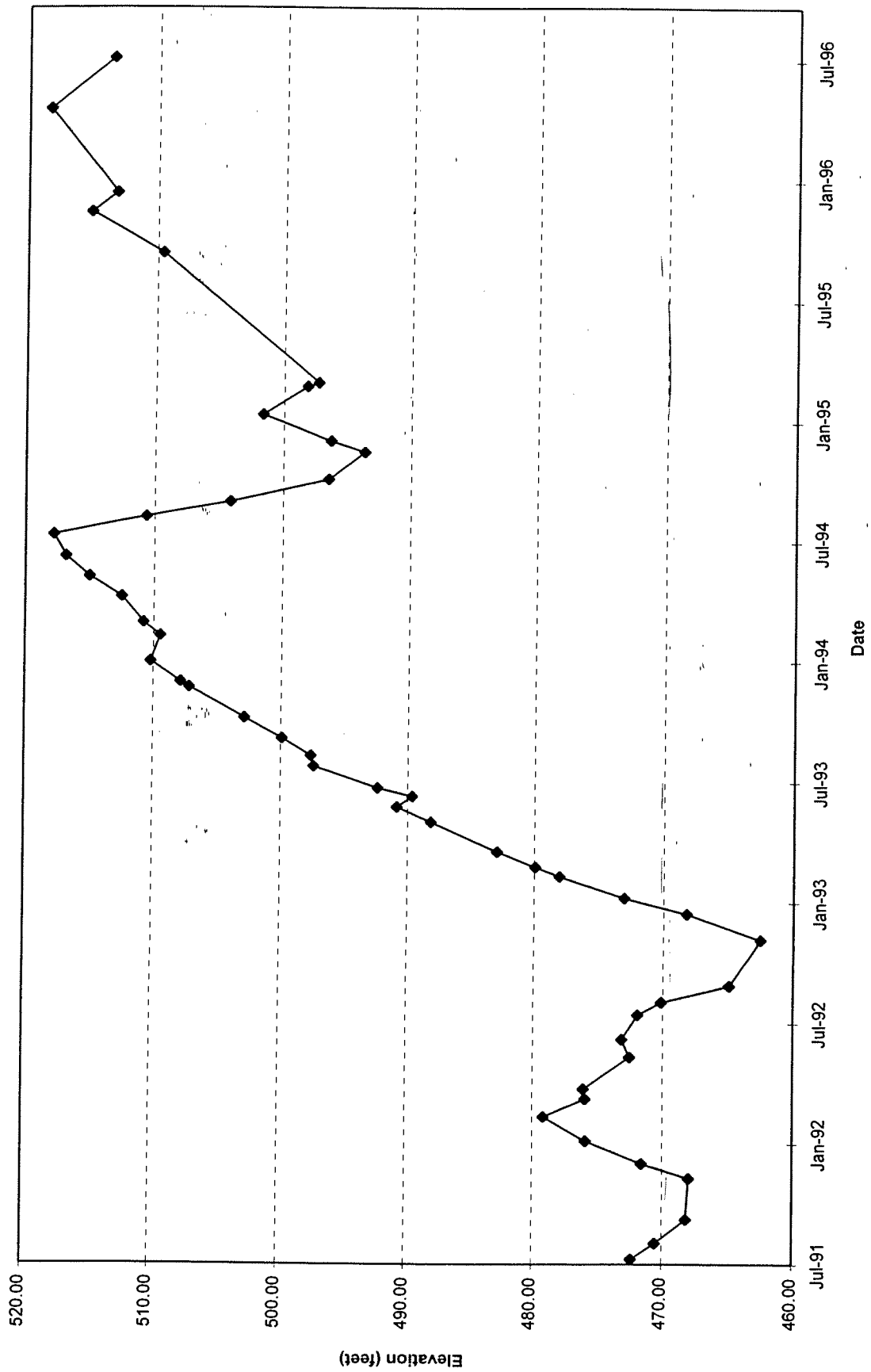


Figure 17
Historic Nitrate Concentrations in GW-2

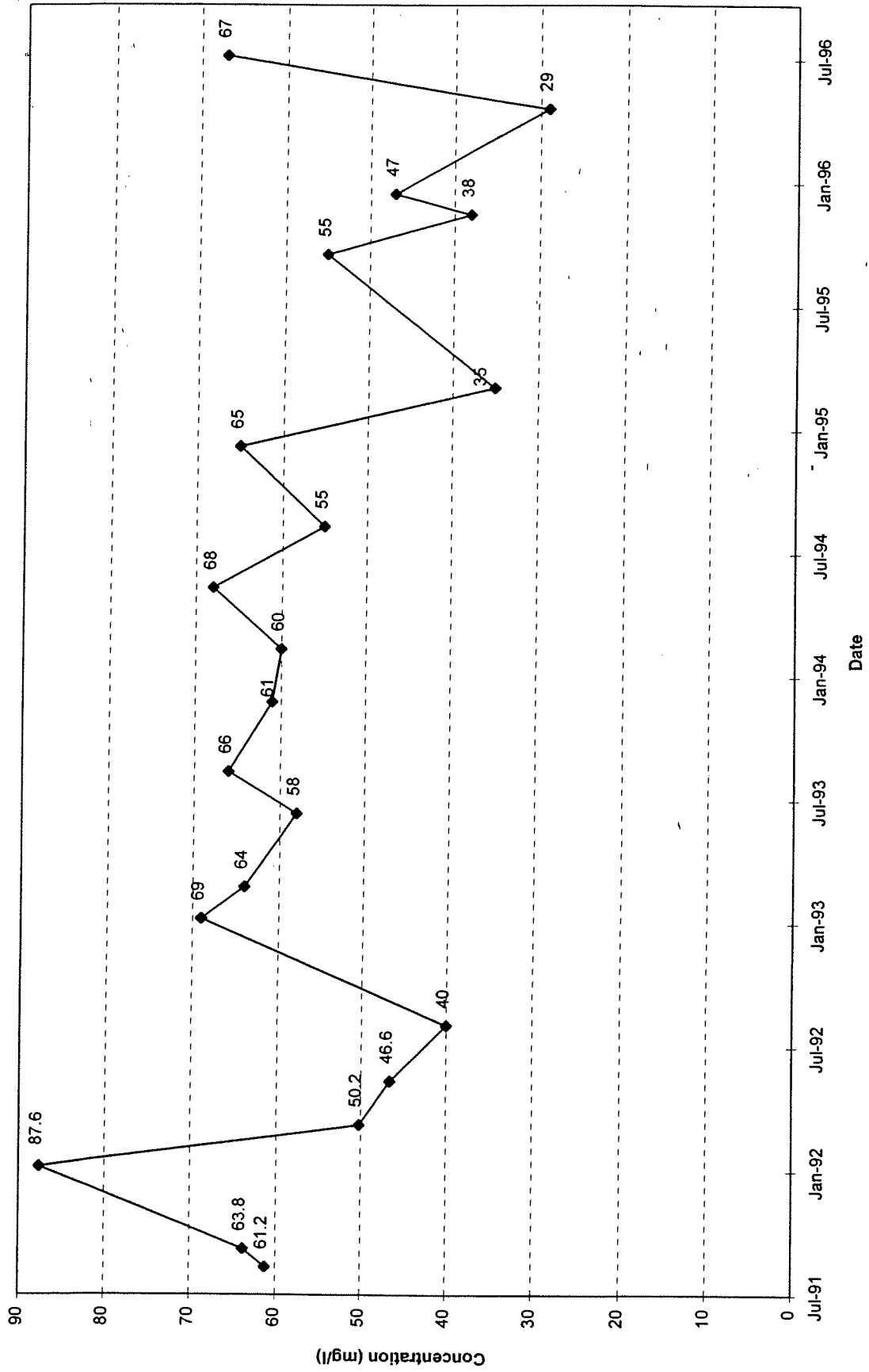


Figure 18
Historic 1,1,1-TCA Concentrations in GW-2

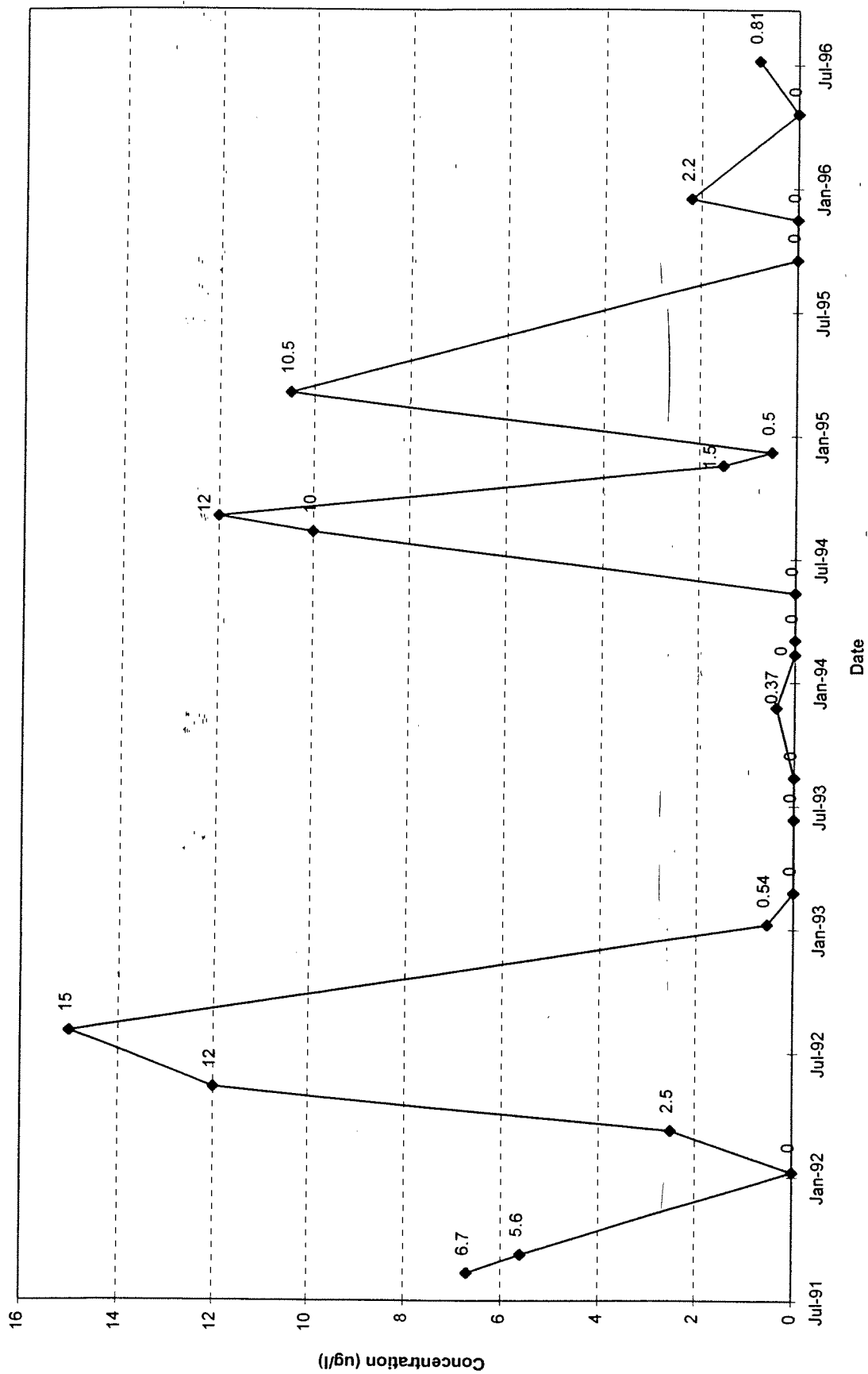


Figure 19
Historic 1,1-DCE Concentrations in GW-2

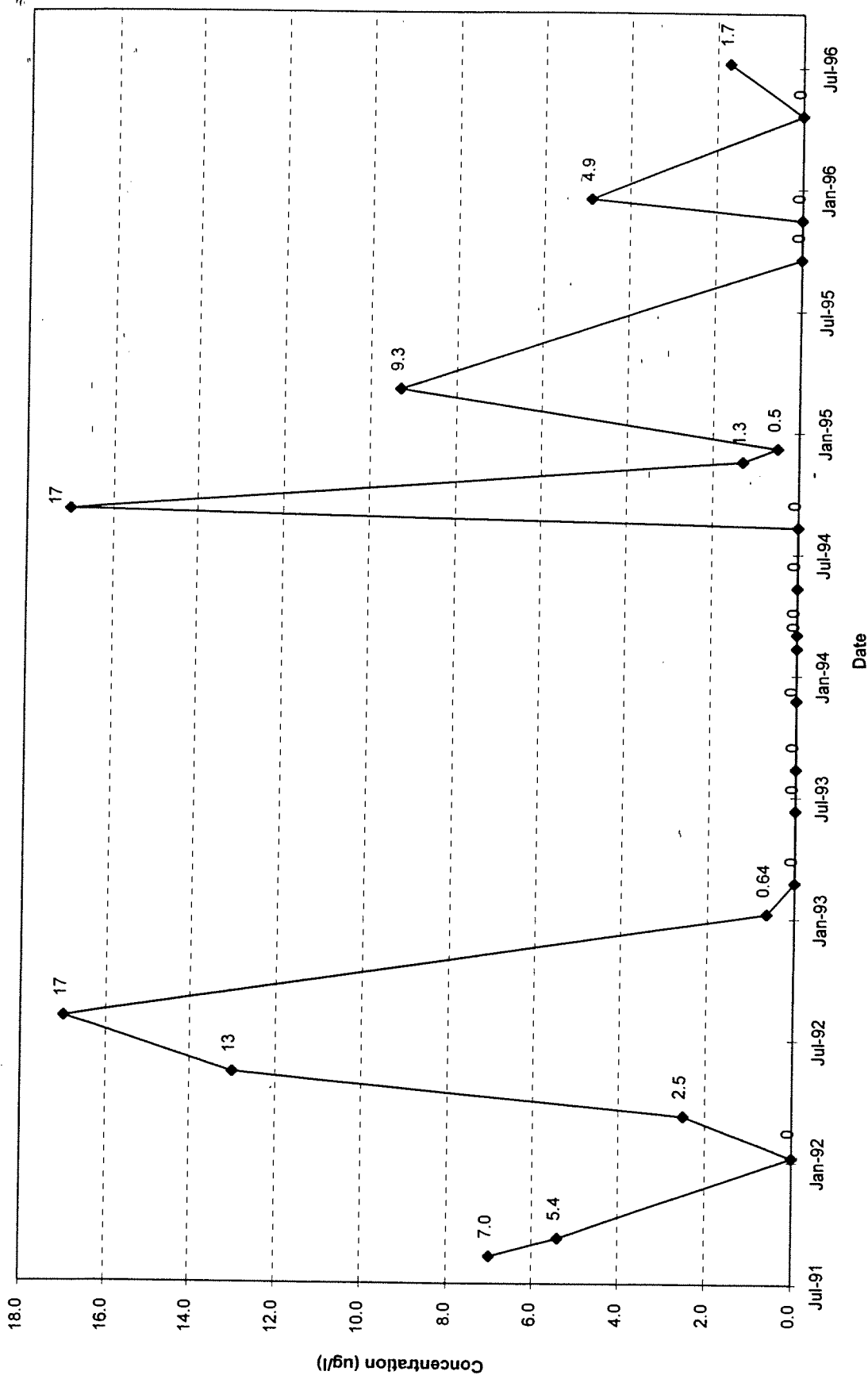


Figure 20
Historic CT Concentrations in GW-2

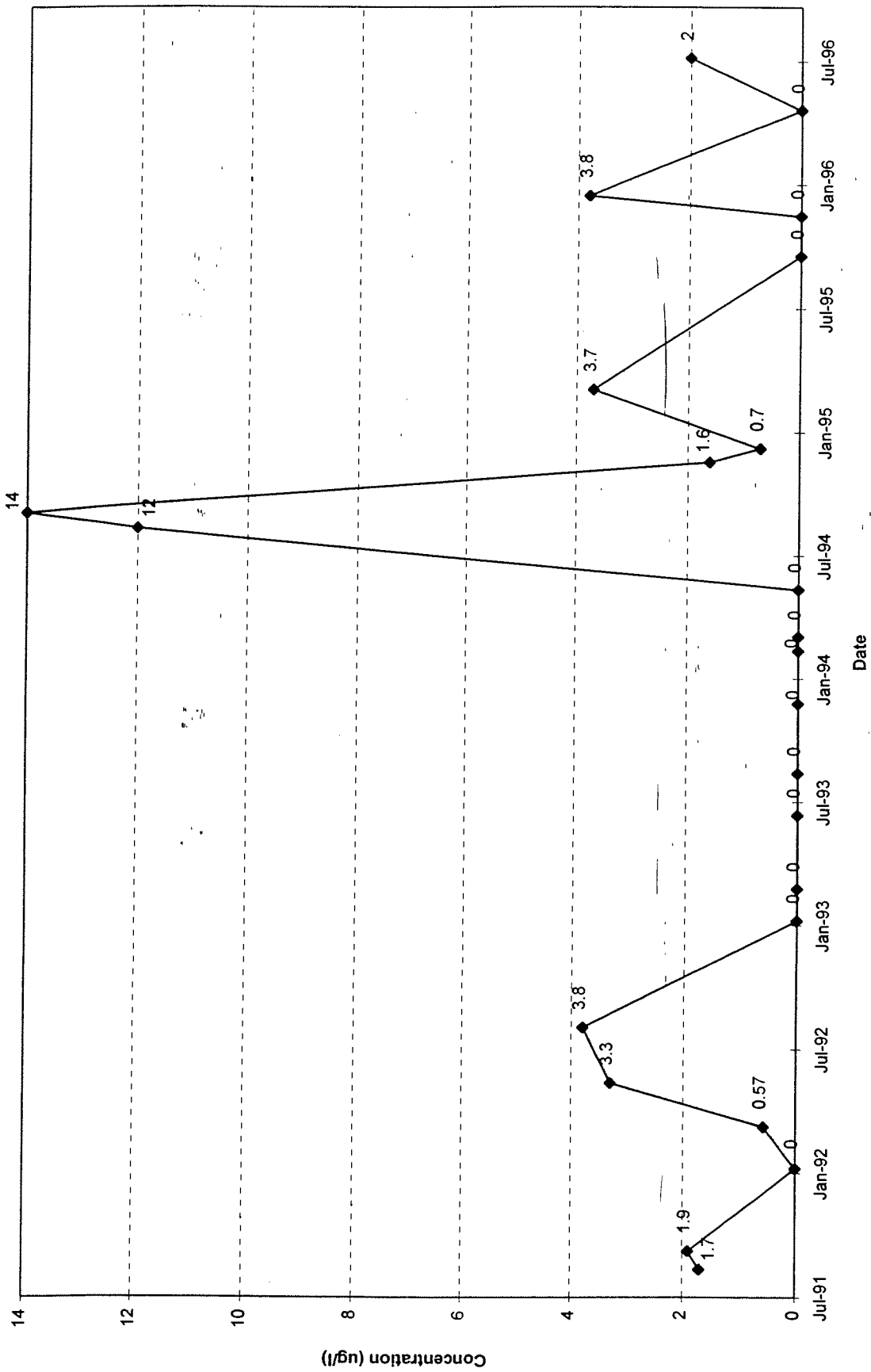


Figure 21
Historic TCE Concentrations in GW-2

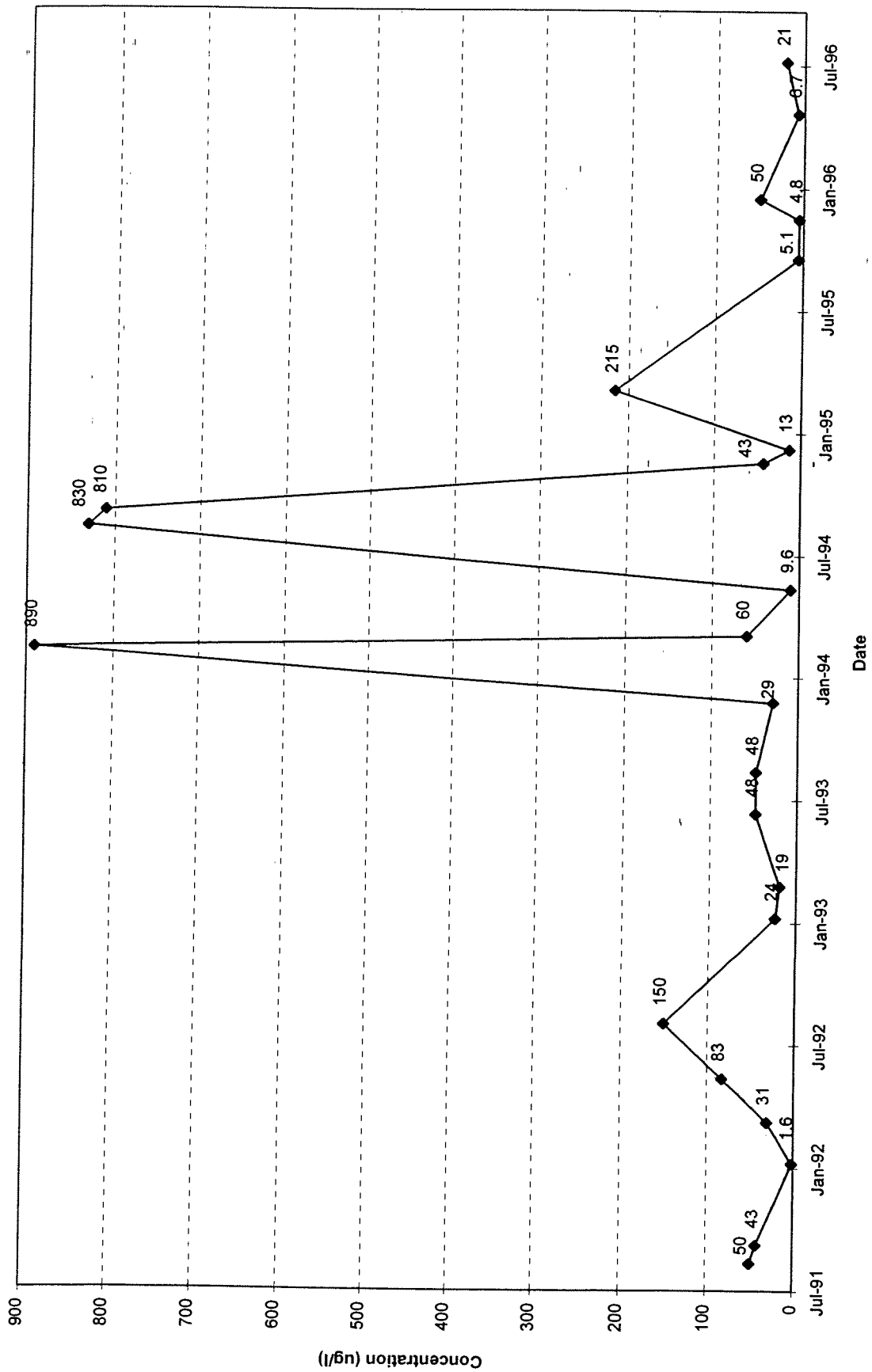


Figure 22
Historic PCE Concentrations in GW-2

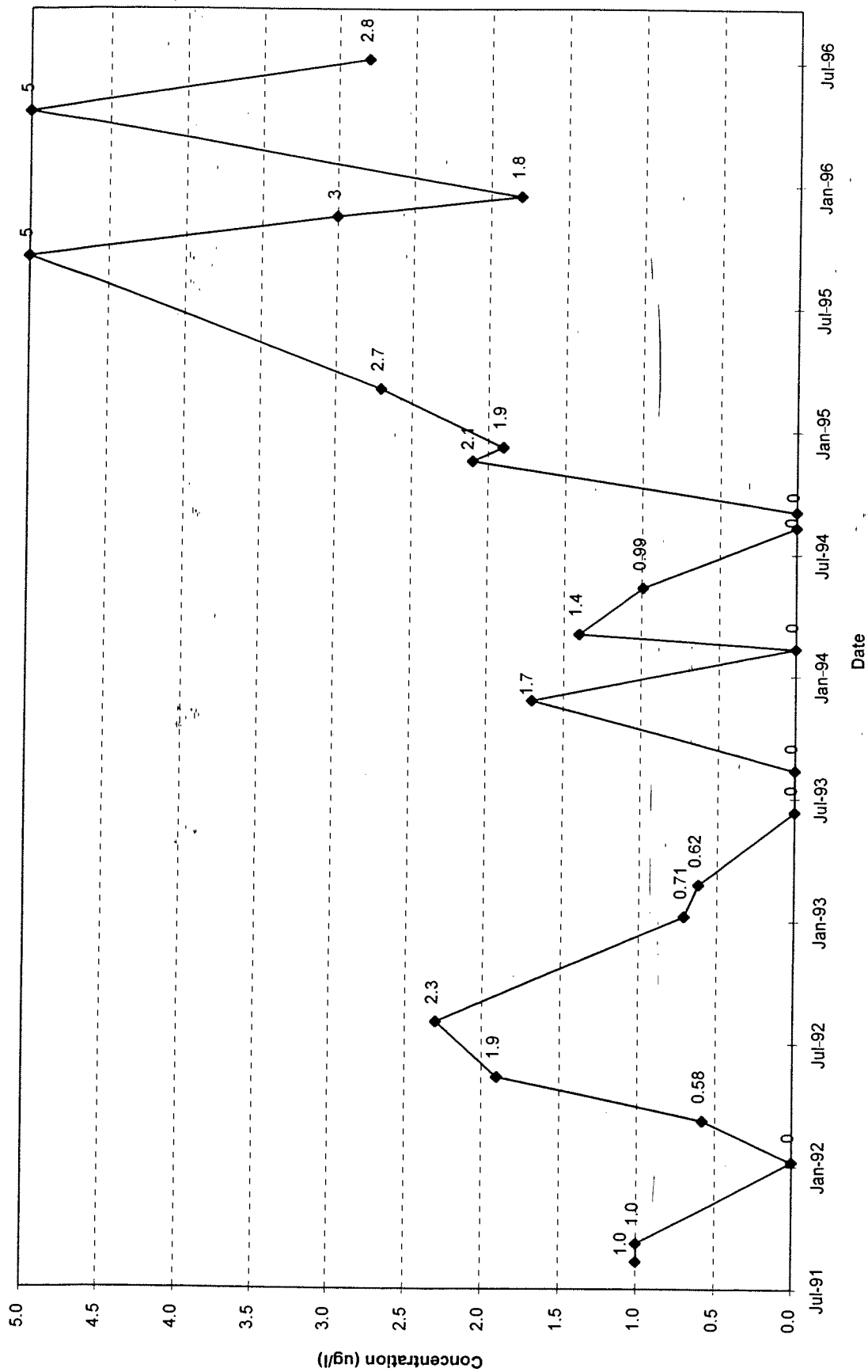


Figure 23
Historic Groundwater Elevations in GW-3

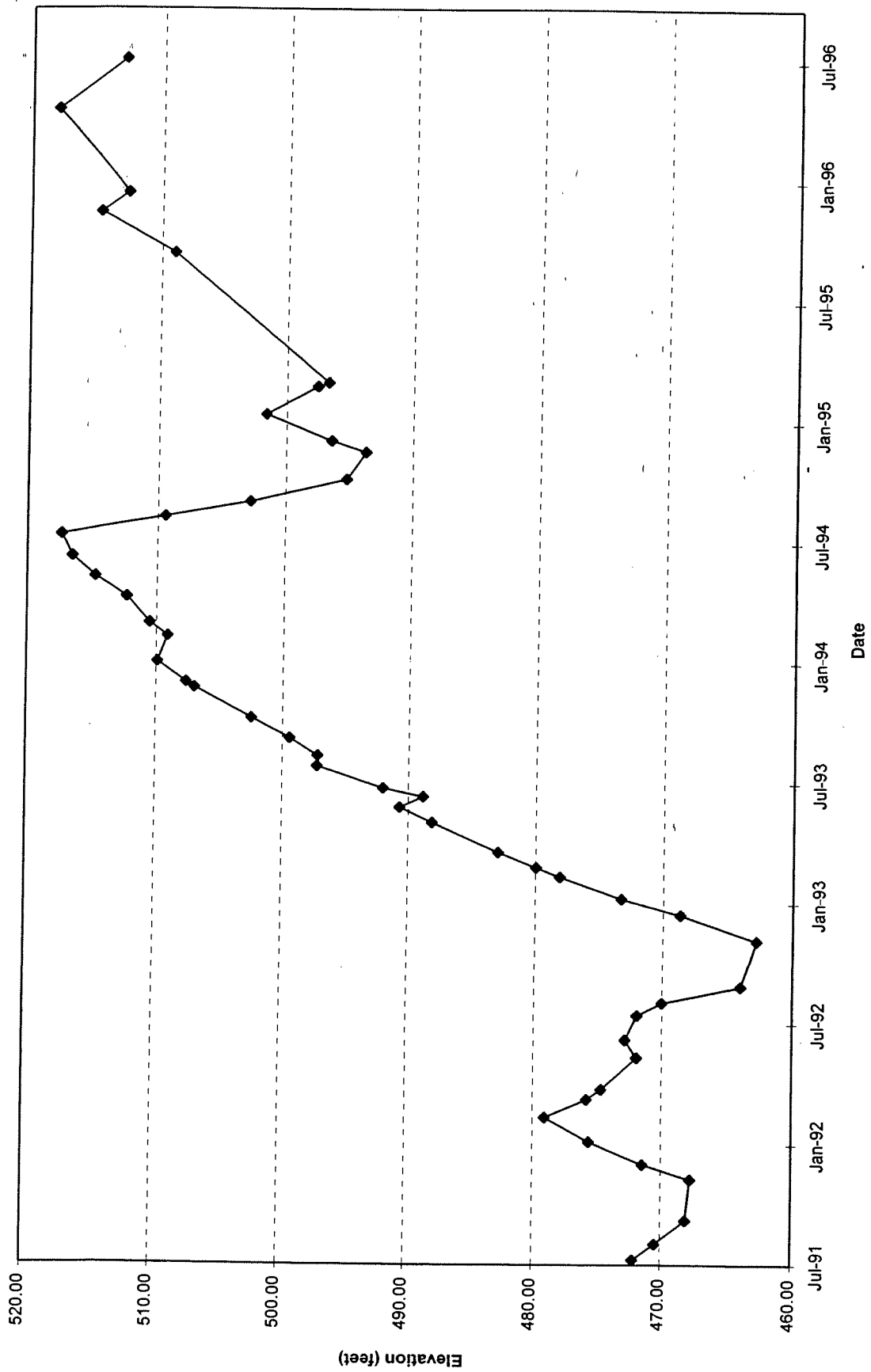


Figure 24
Historic Nitrate Concentrations in GW-3

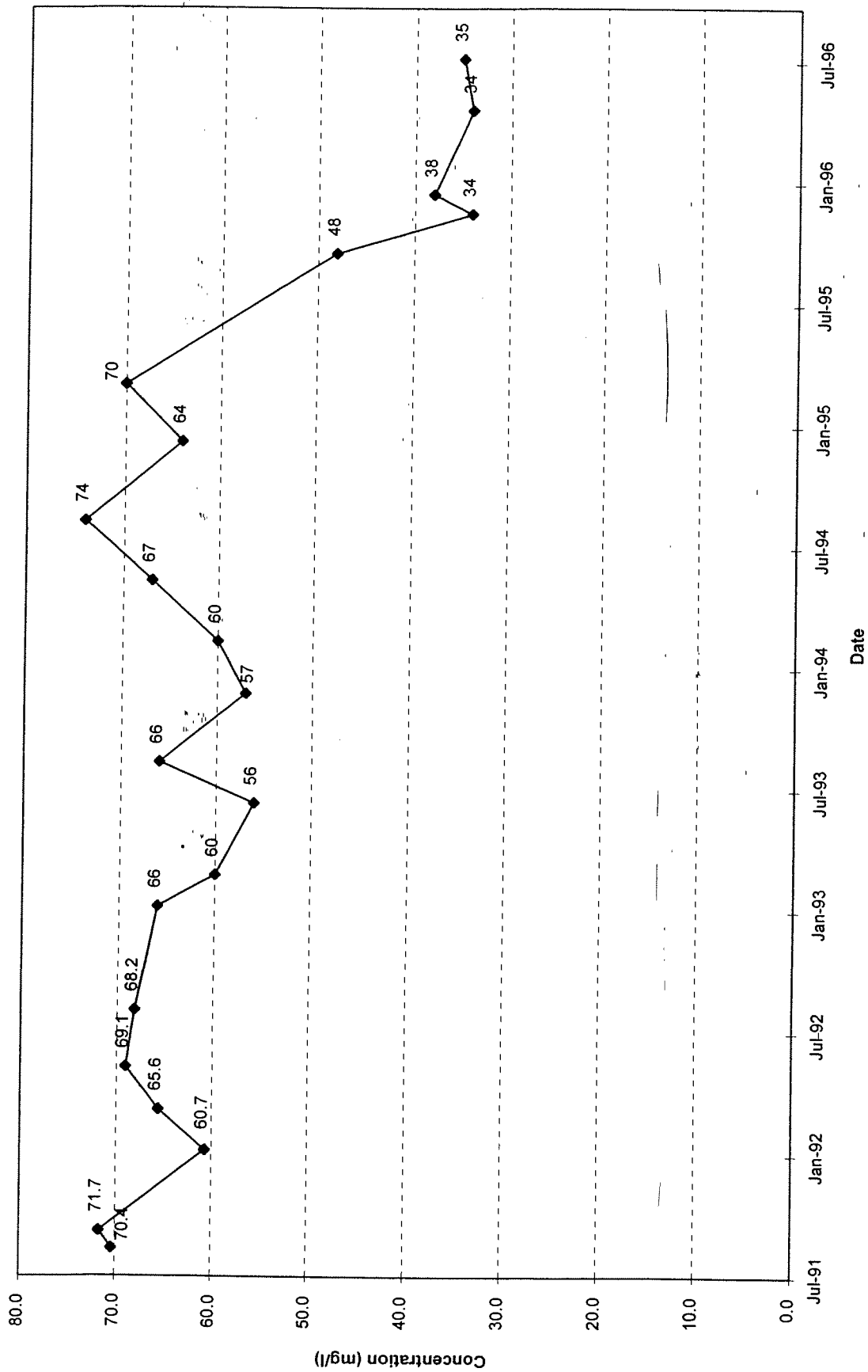


Figure 25
Historic 1,1,1-TCA Concentrations in GW-3

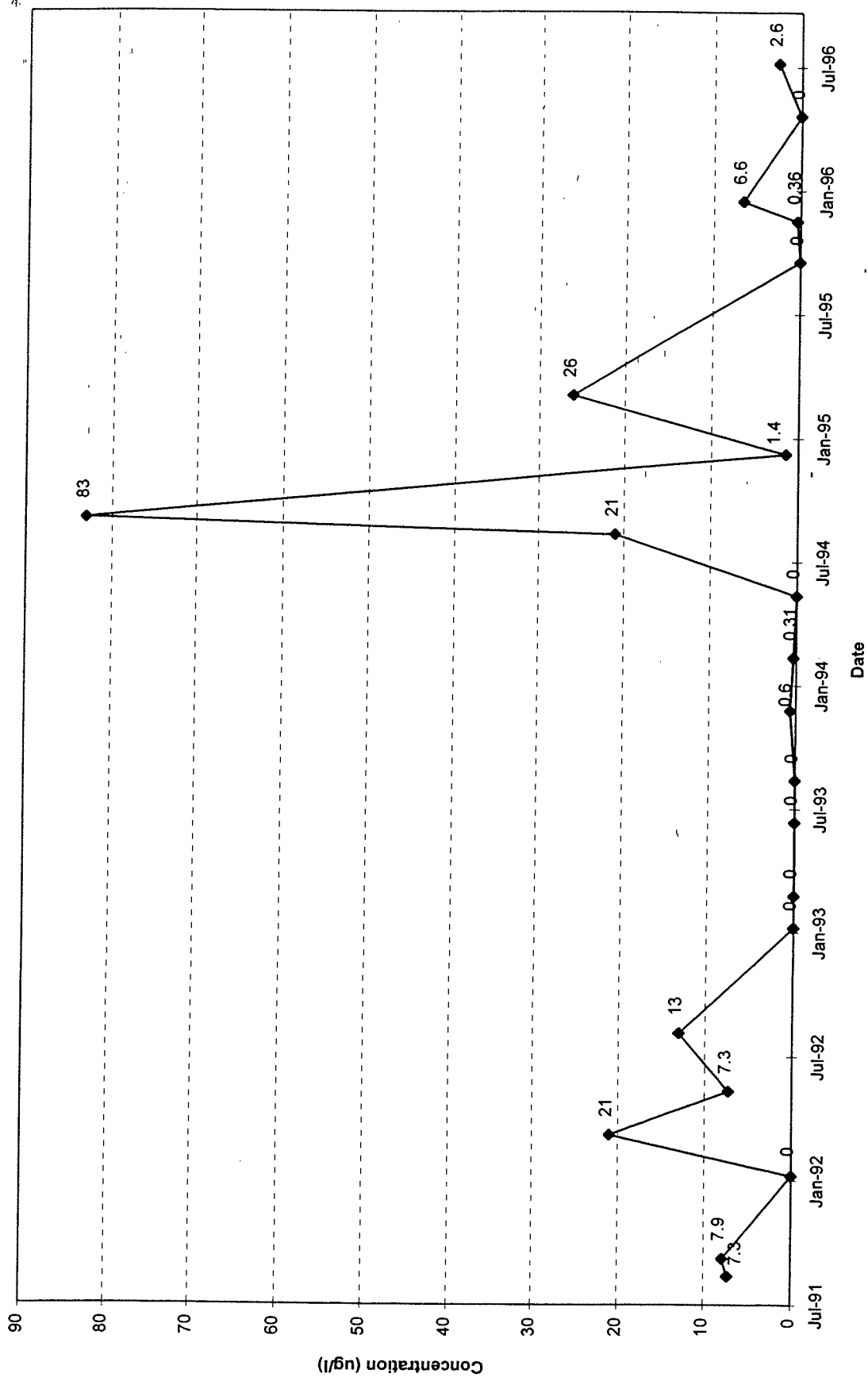


Figure 26
 Historic 1,1-DCA Concentrations in GW-3

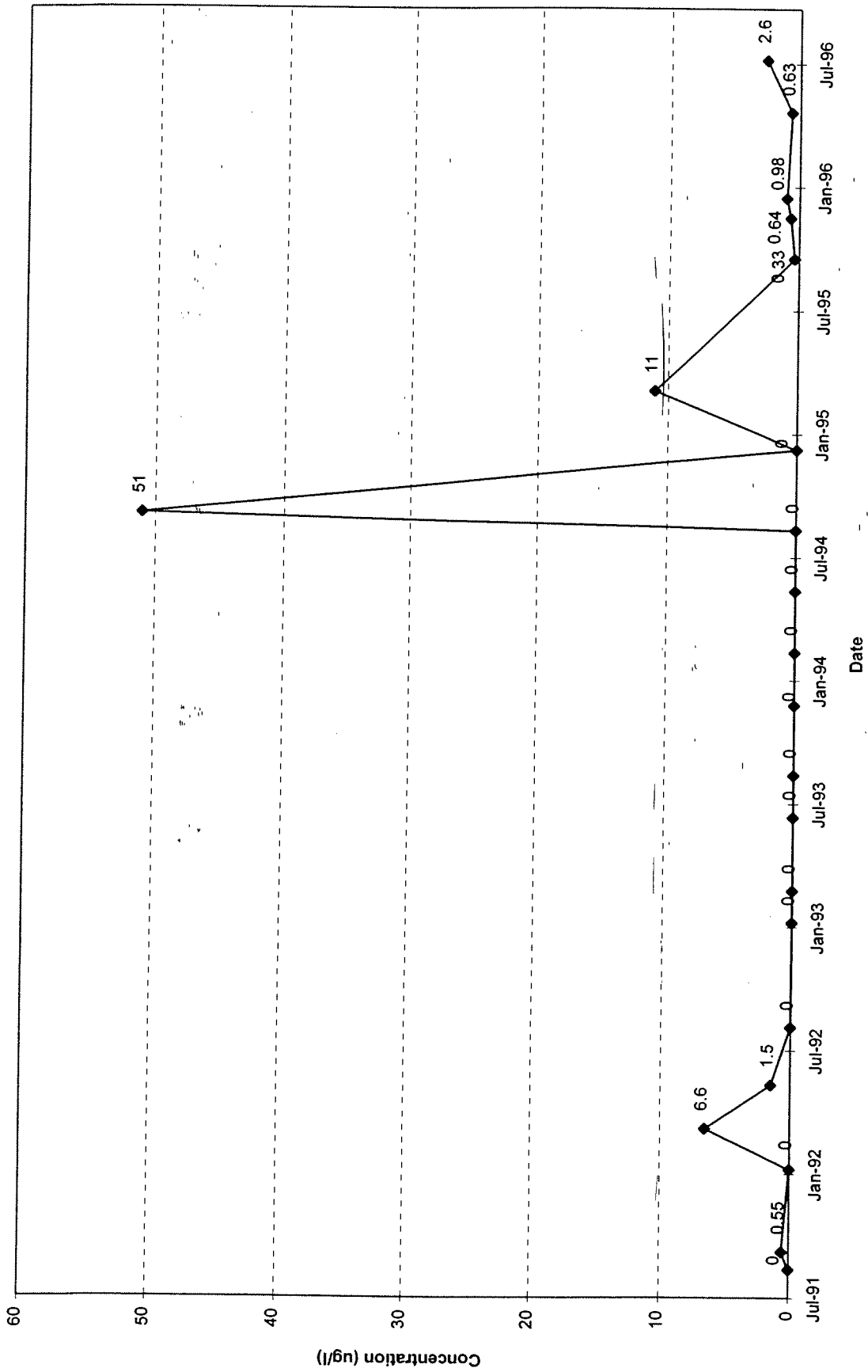


Figure 27
Historic 1,1-DCE Concentrations in GW-3

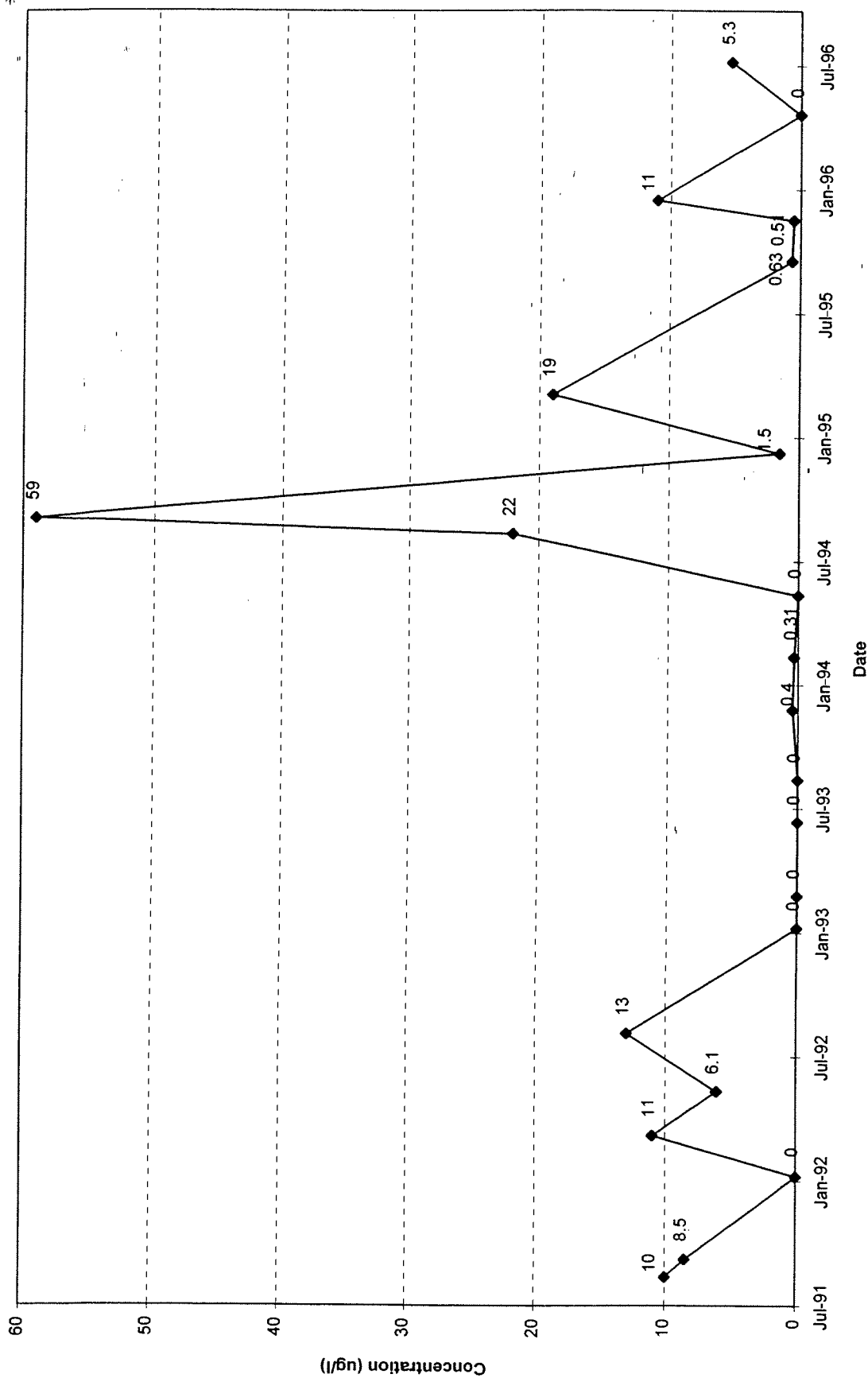


Figure 28
Historic TCE Concentrations in GW-3

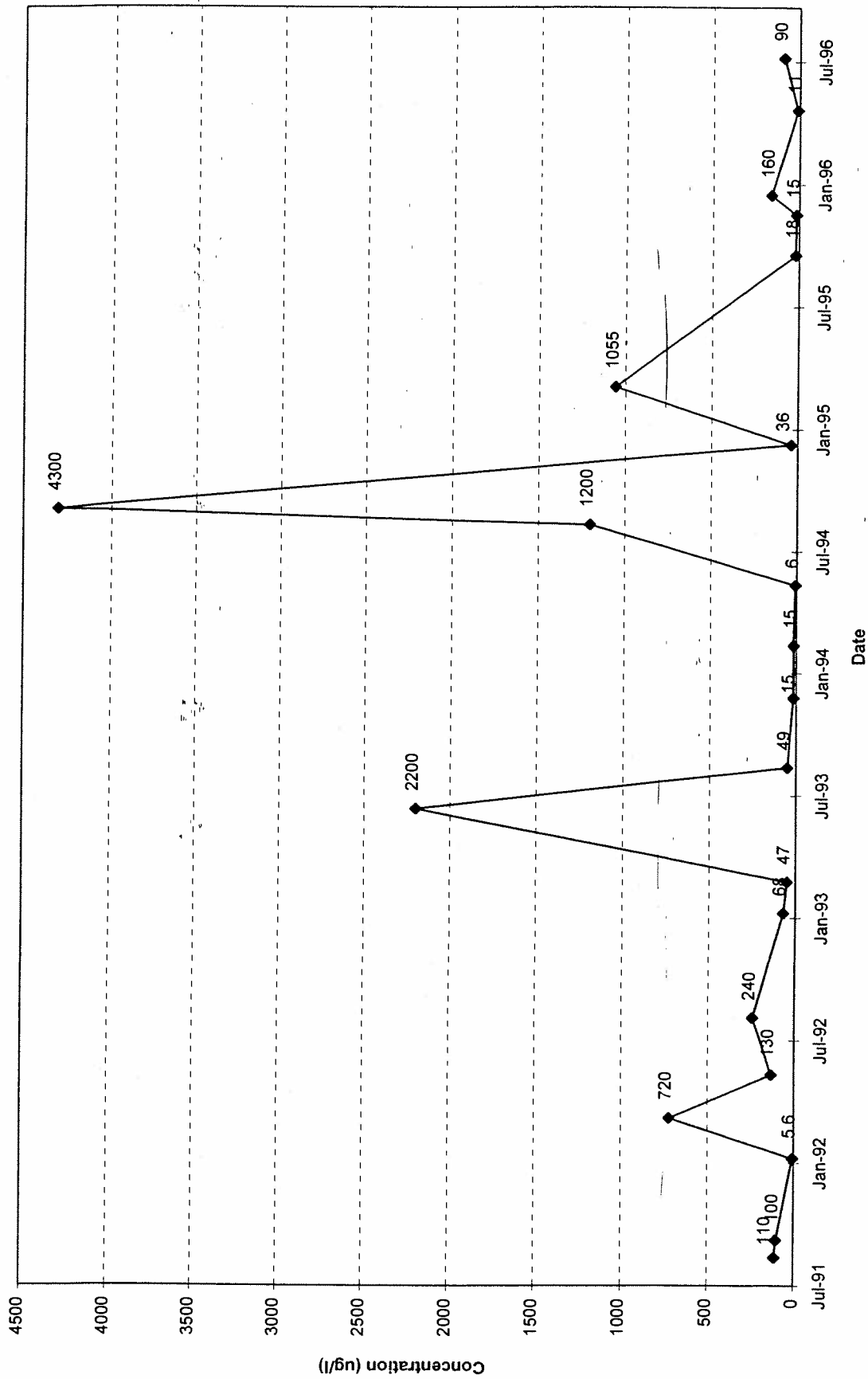


Figure 29
Historic PCE Concentrations in GW-3

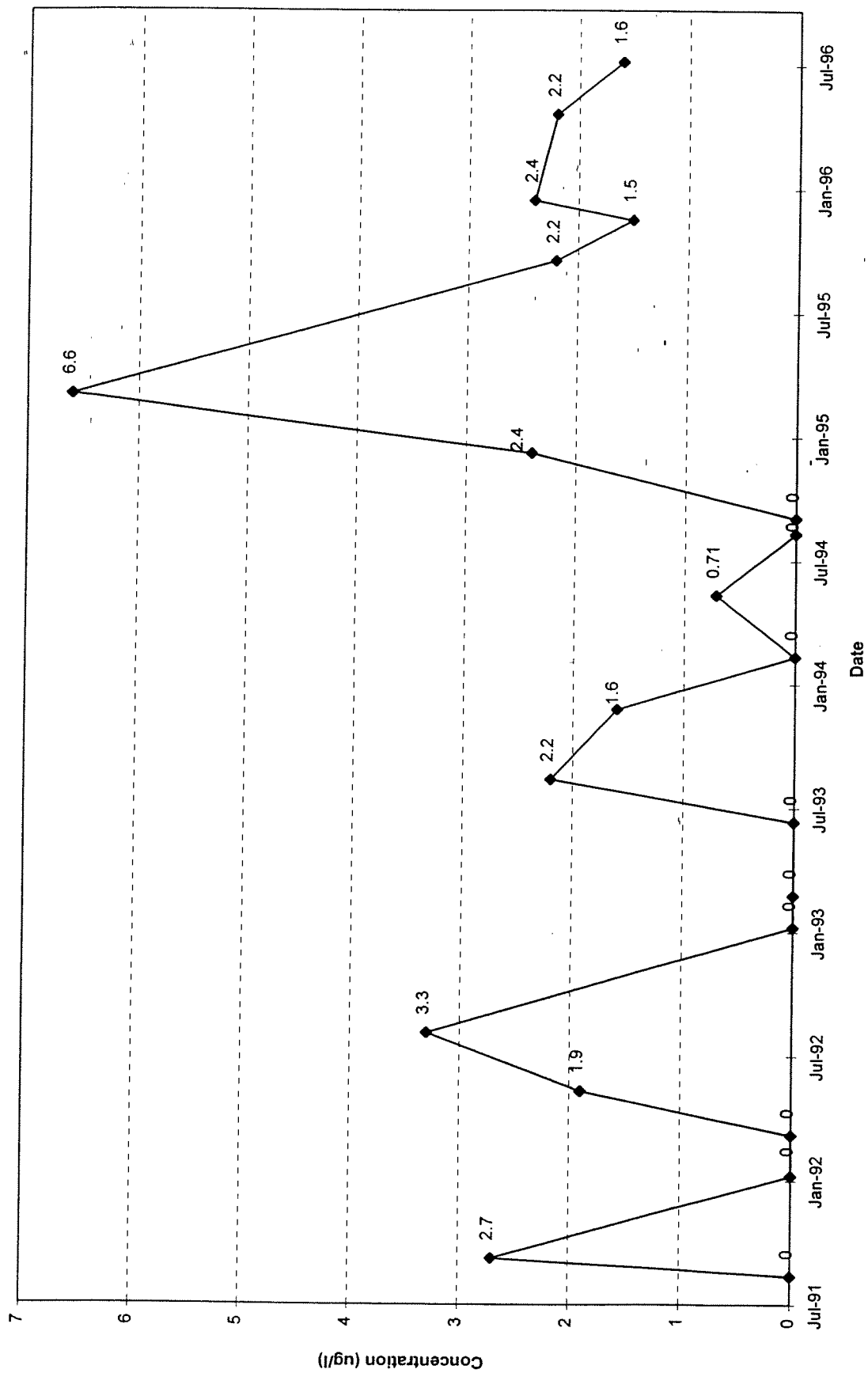


Figure 30



Figure 31
Historic Groundwater Elevations in GW-7

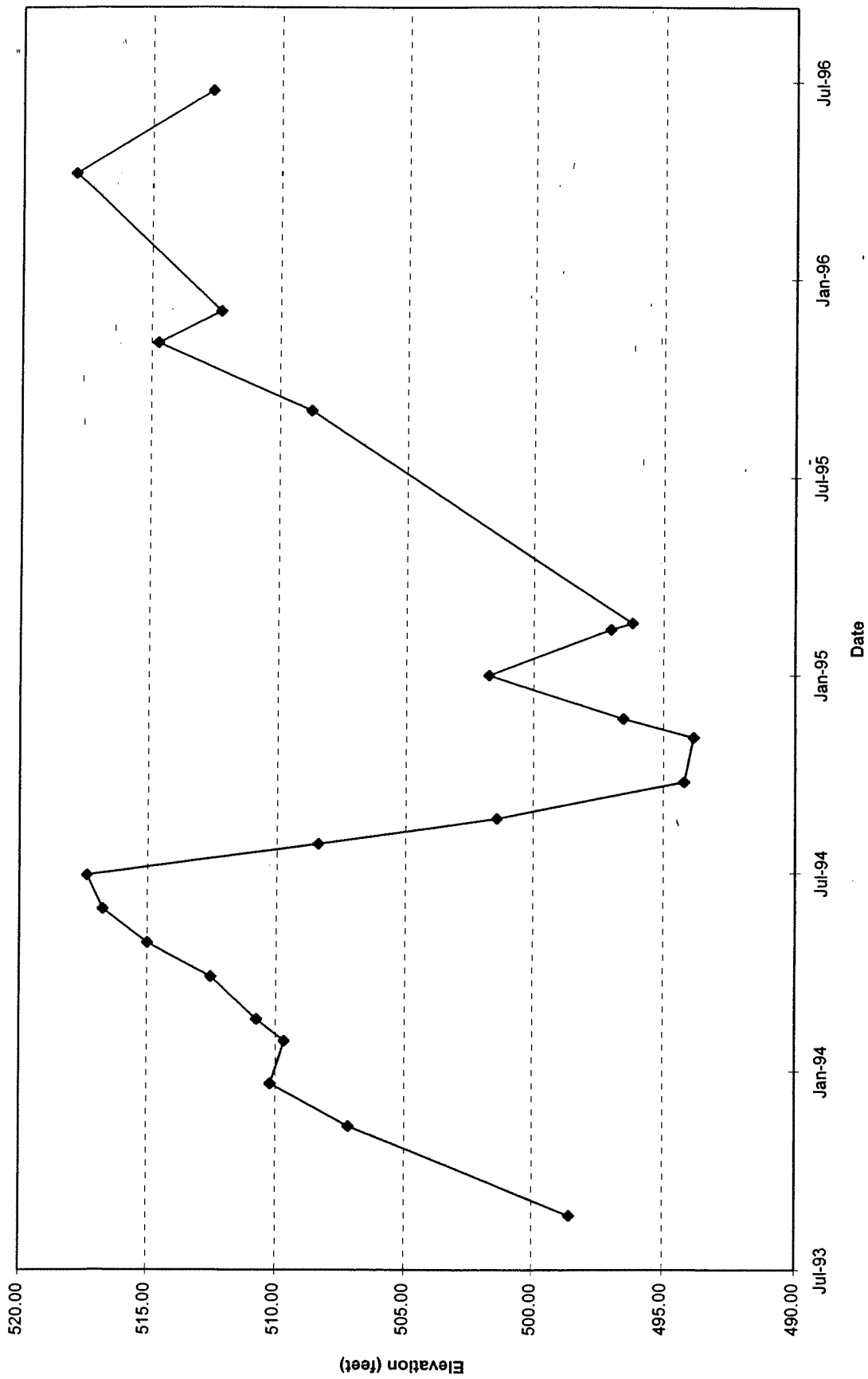


Figure 32
Historic Nitrate Concentrations in GW-7

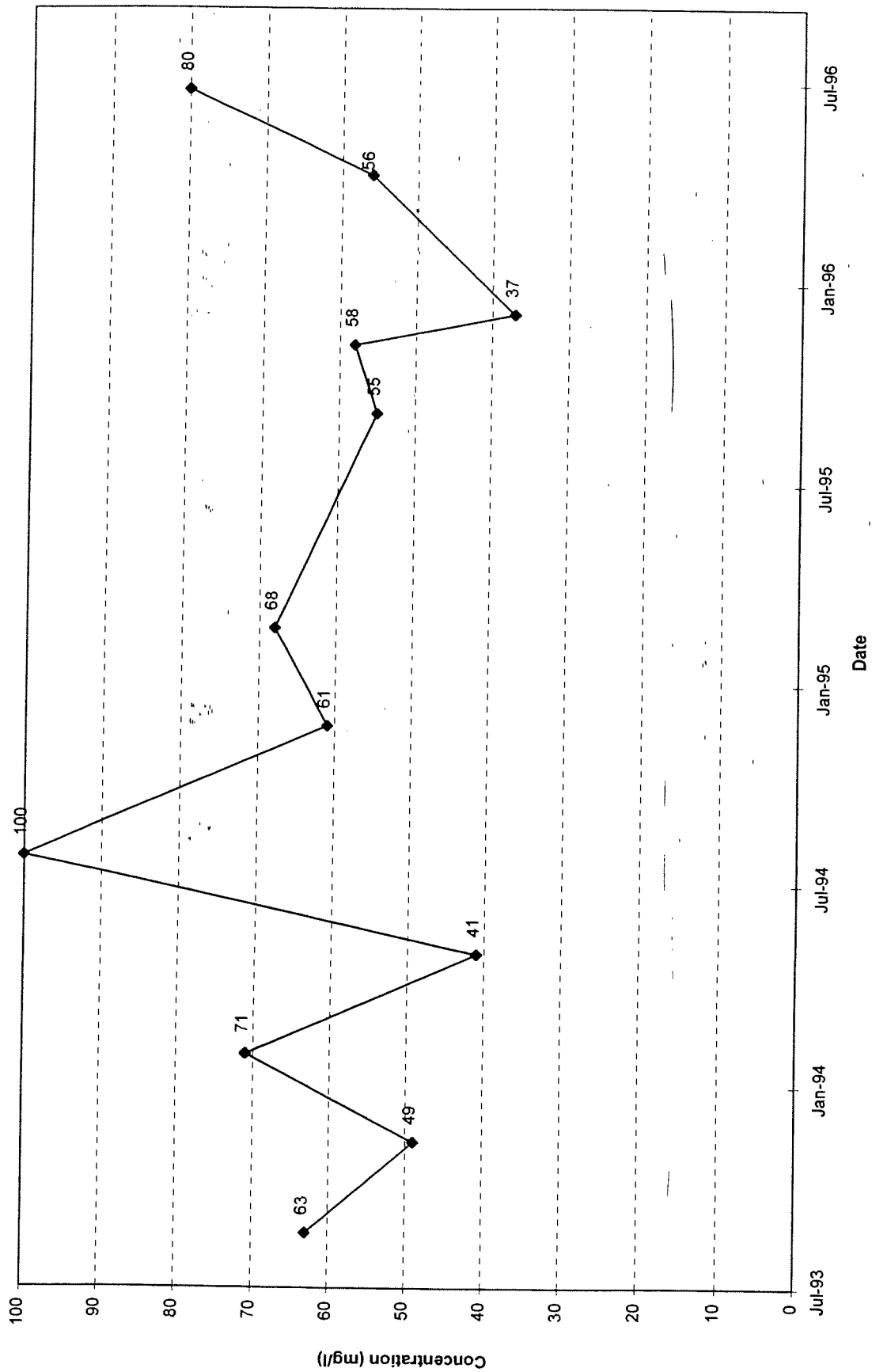


Figure 33
Historic TCE Concentrations in GW-7

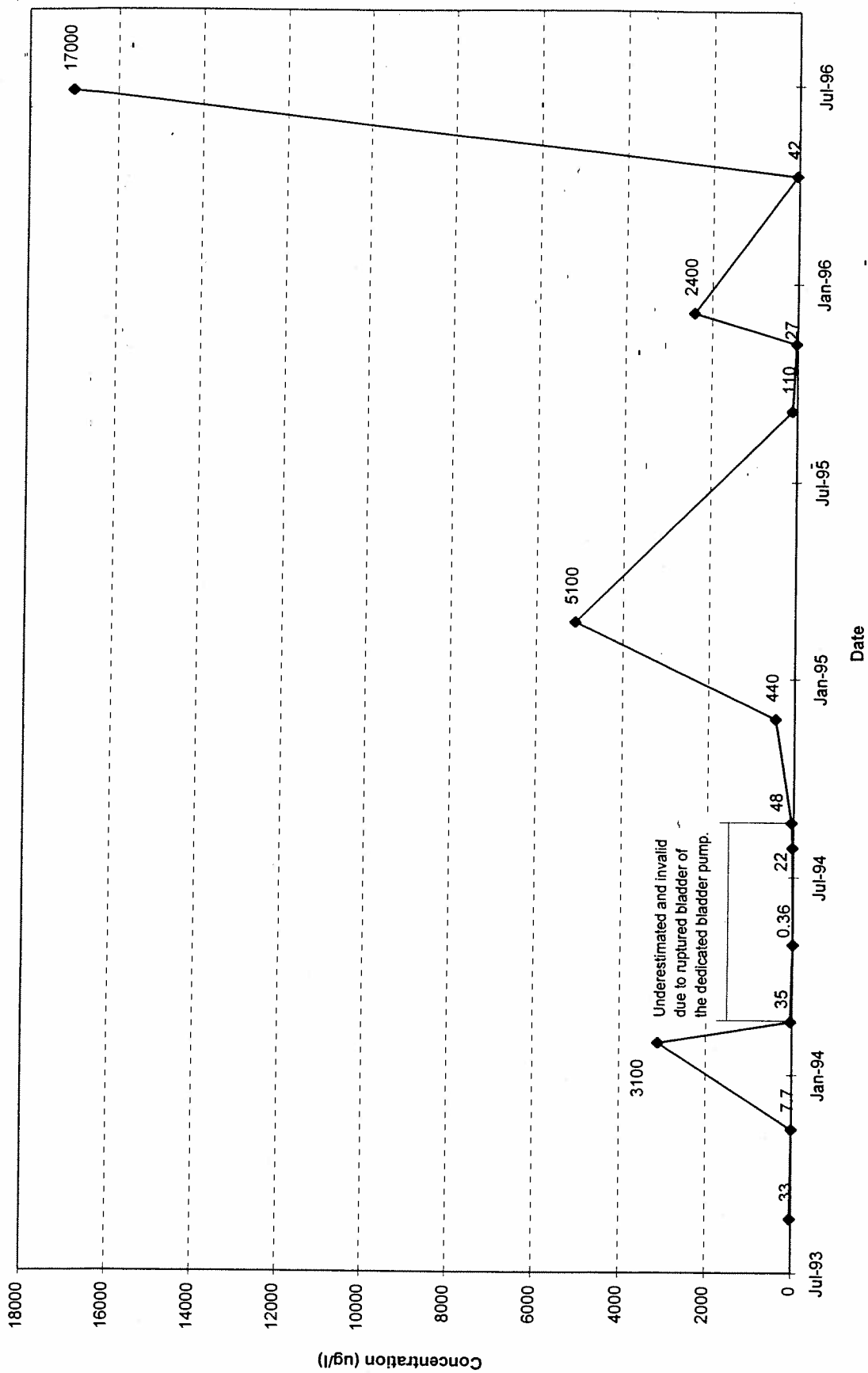


Figure 34
Historic cis-1,2-DCE Concentrations in GW-7

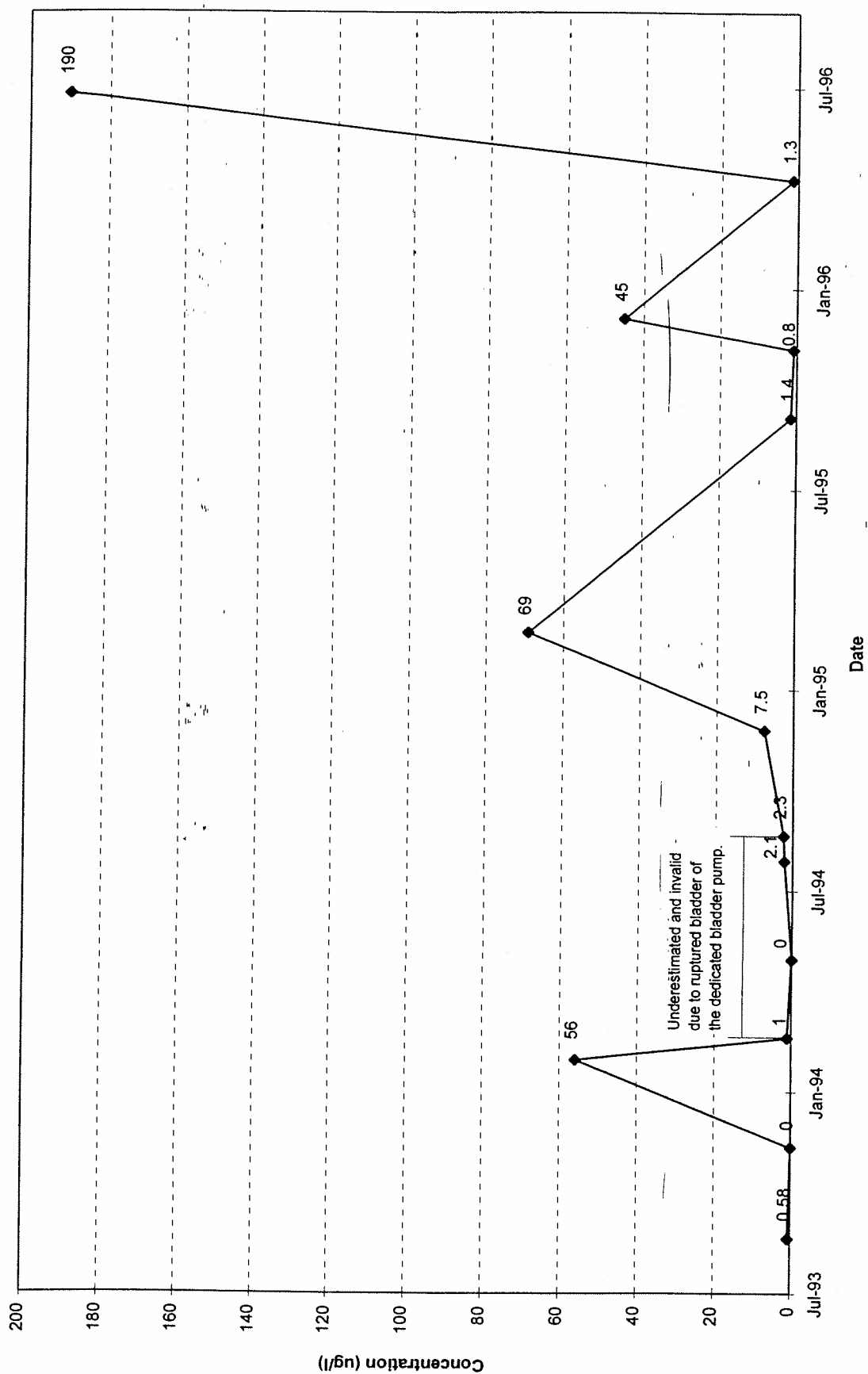


Figure 35
Historic Groundwater Elevations in GW-8

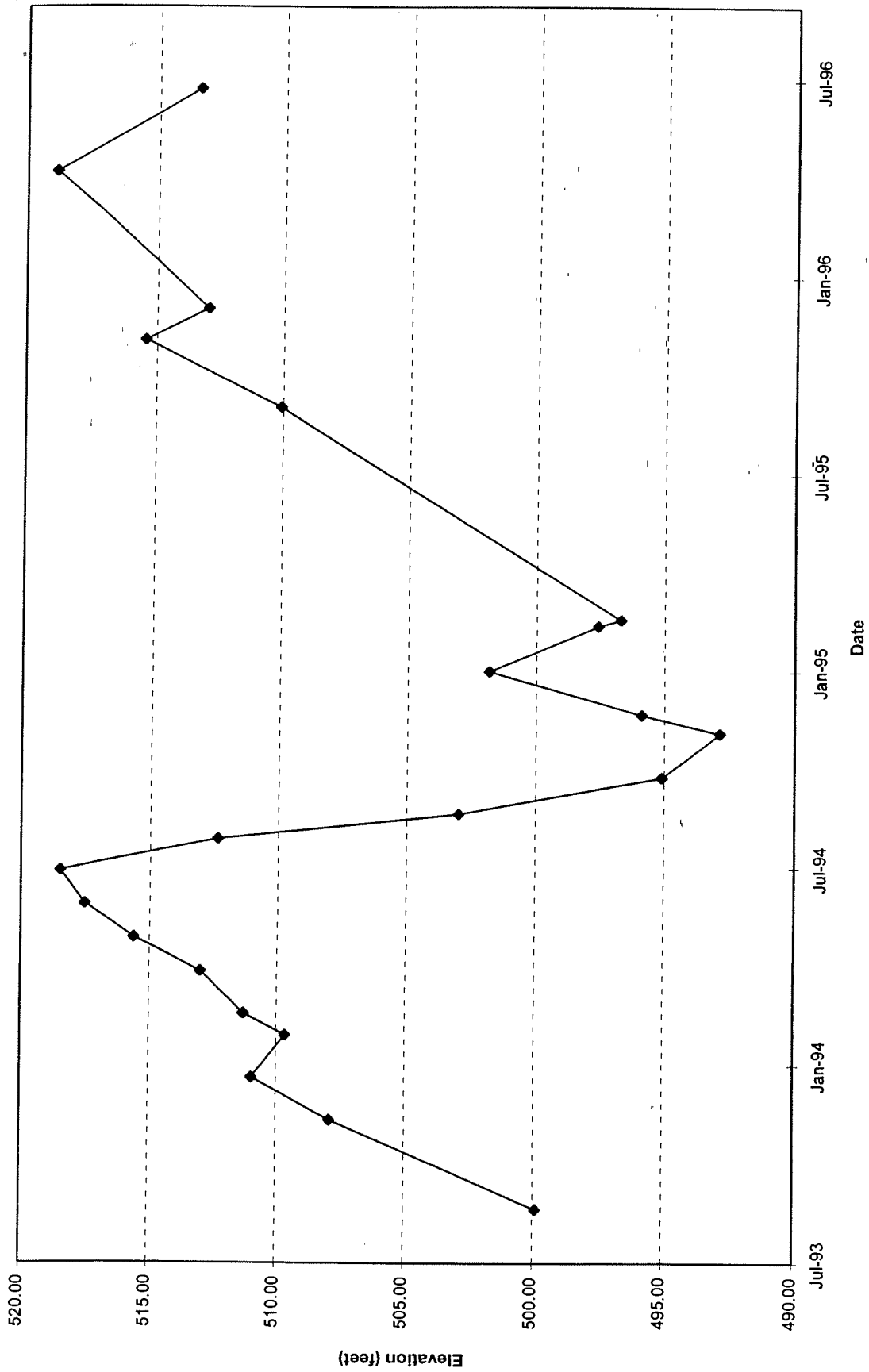


Figure 36
Historic Nitrate Concentrations in GW-8

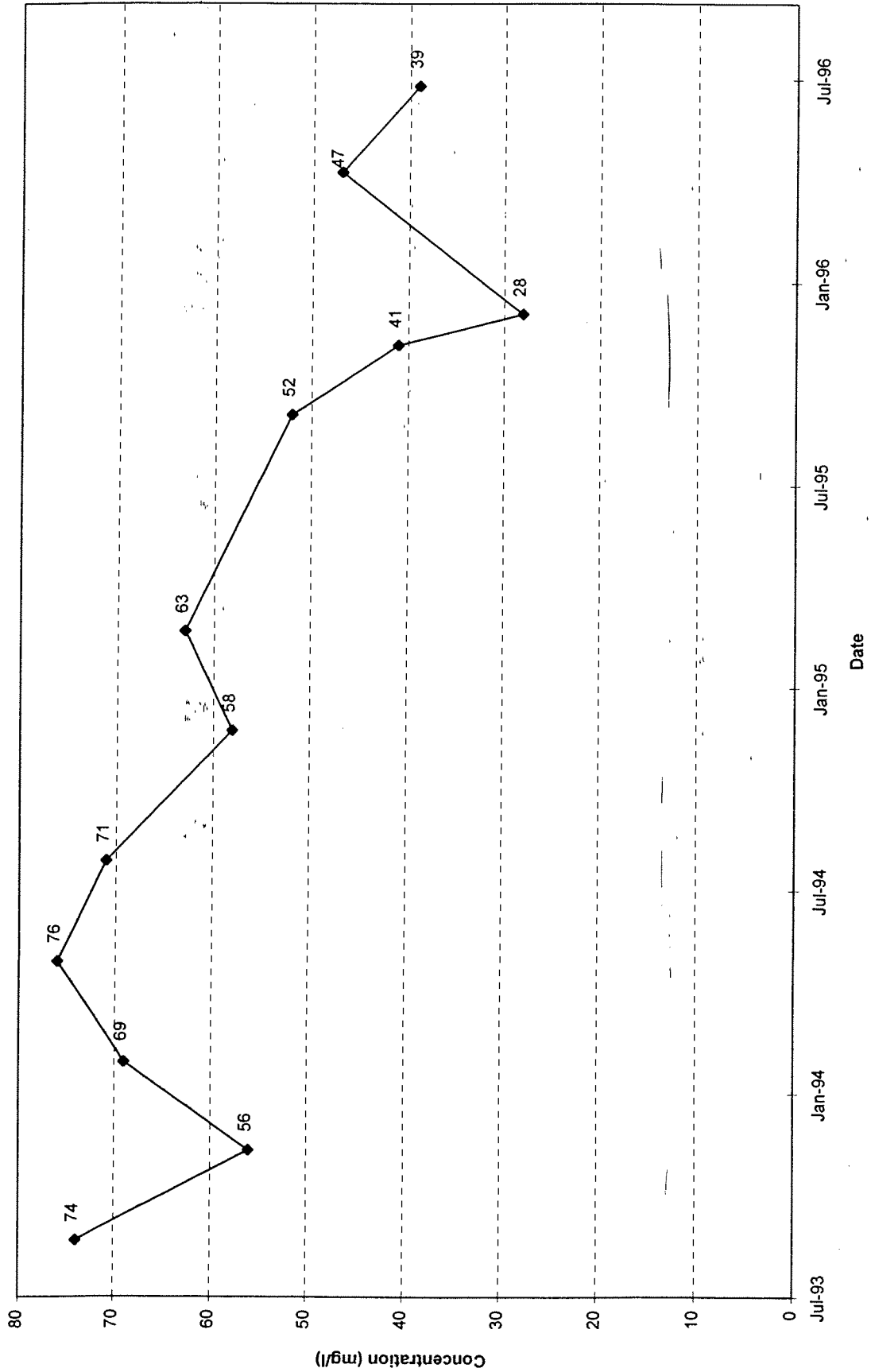


Figure 37
Historic TCE Concentrations in GW-8

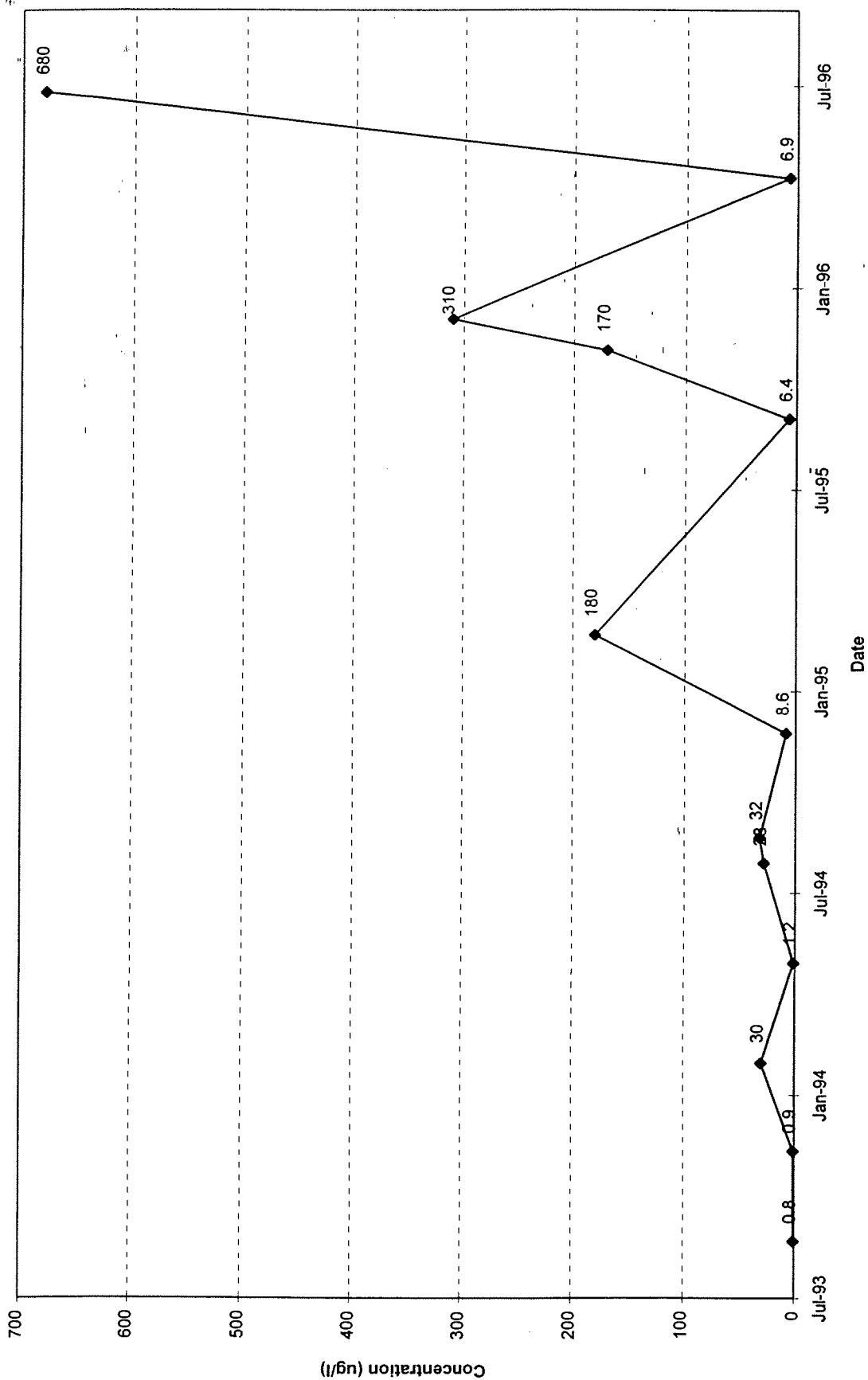


Figure 38
Historic PCE Concentrations in GW-8

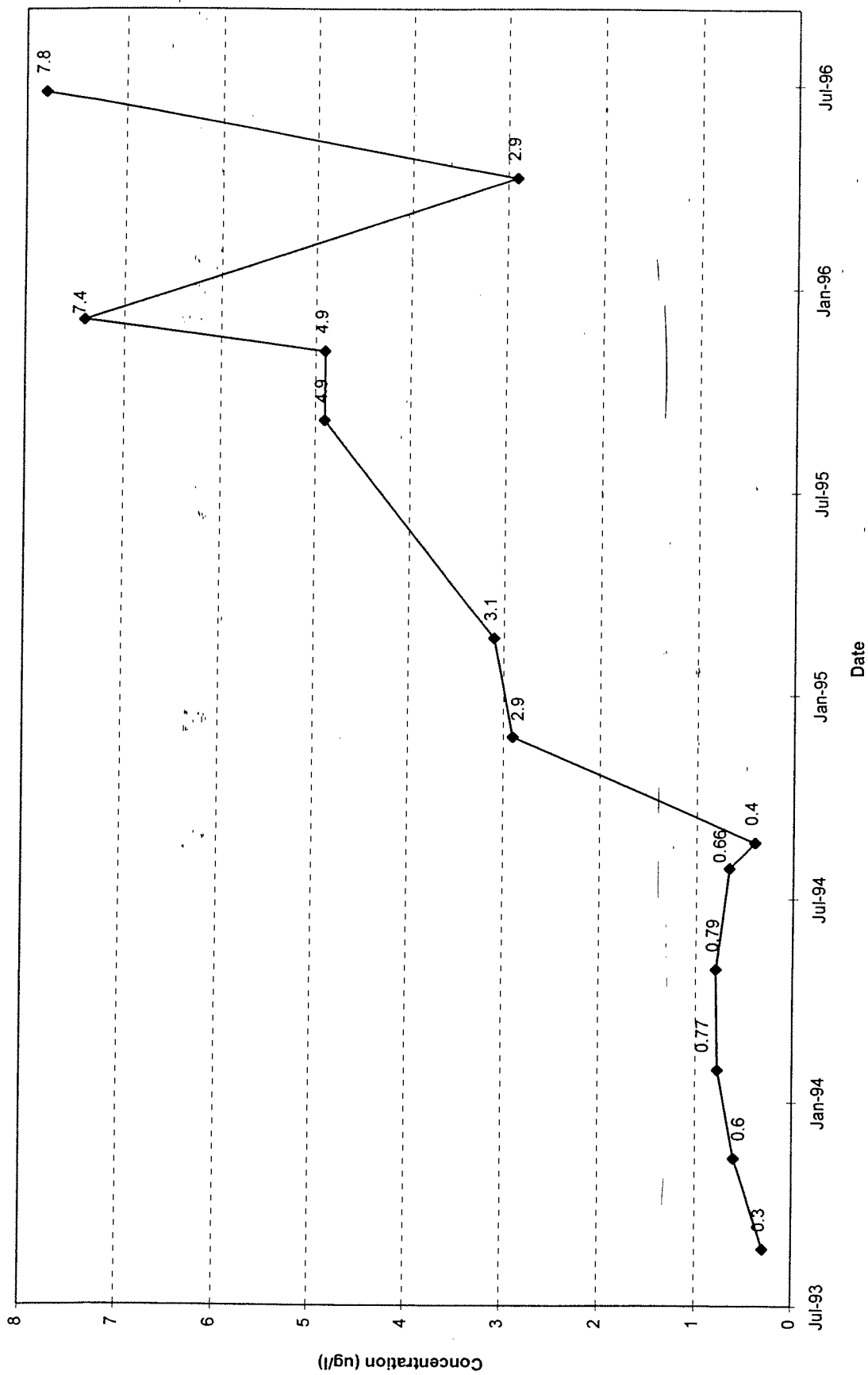


Figure 39
Historic cis-1,2-DCE Concentrations in GW-8

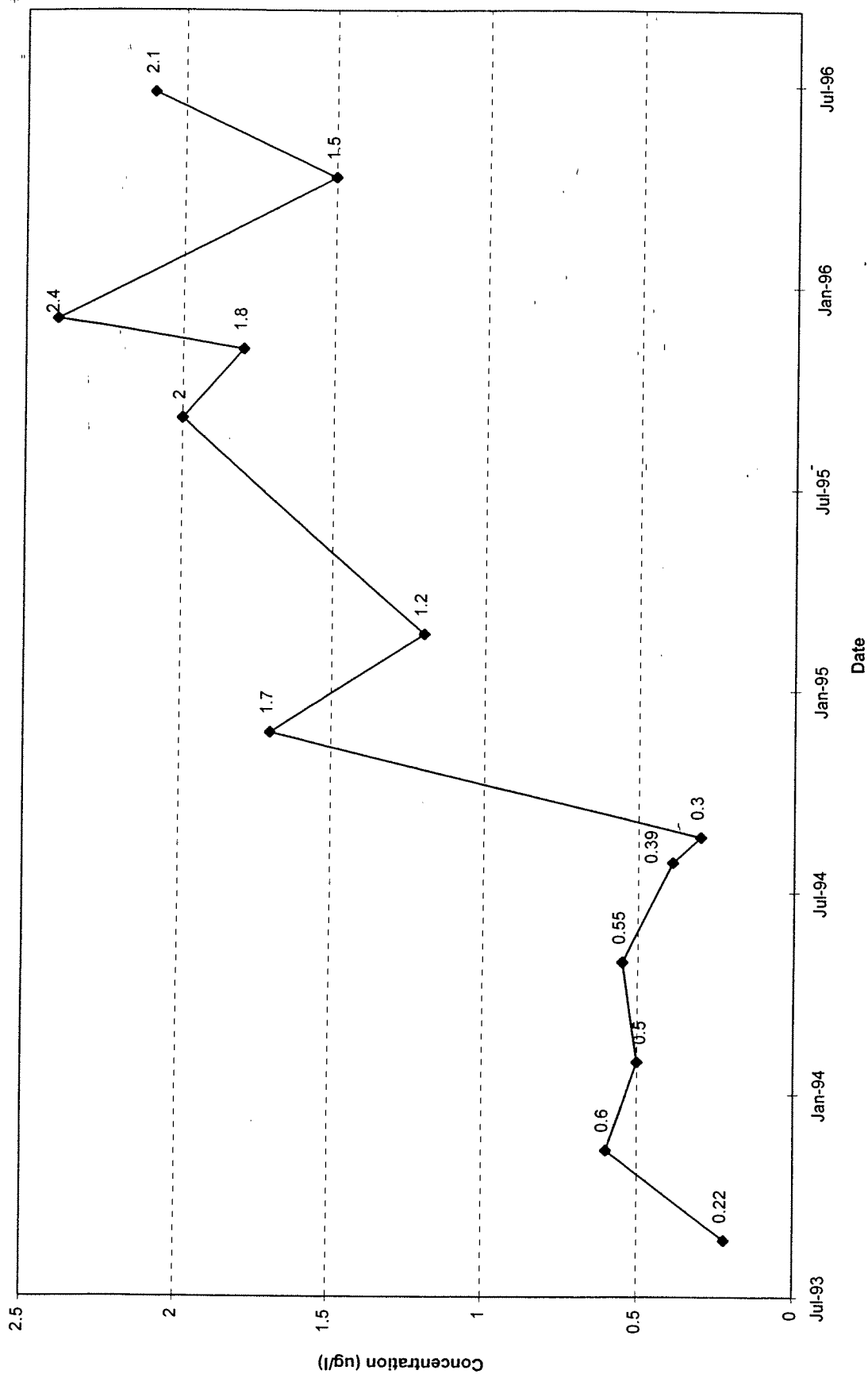


Figure 40
Historic Groundwater Elevations in GW-9

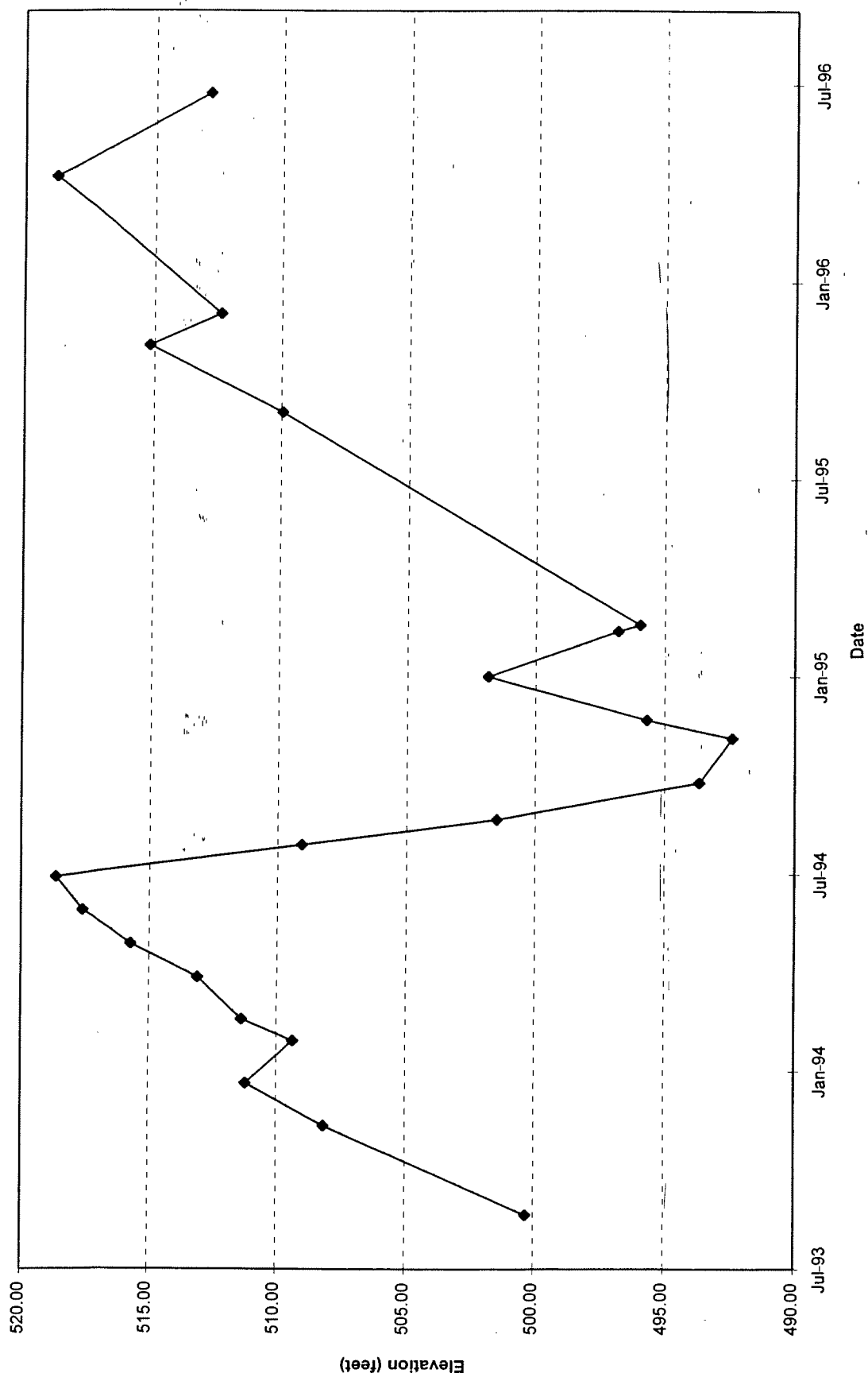


Figure 41
Historic Nitrate Concentrations in GW-9

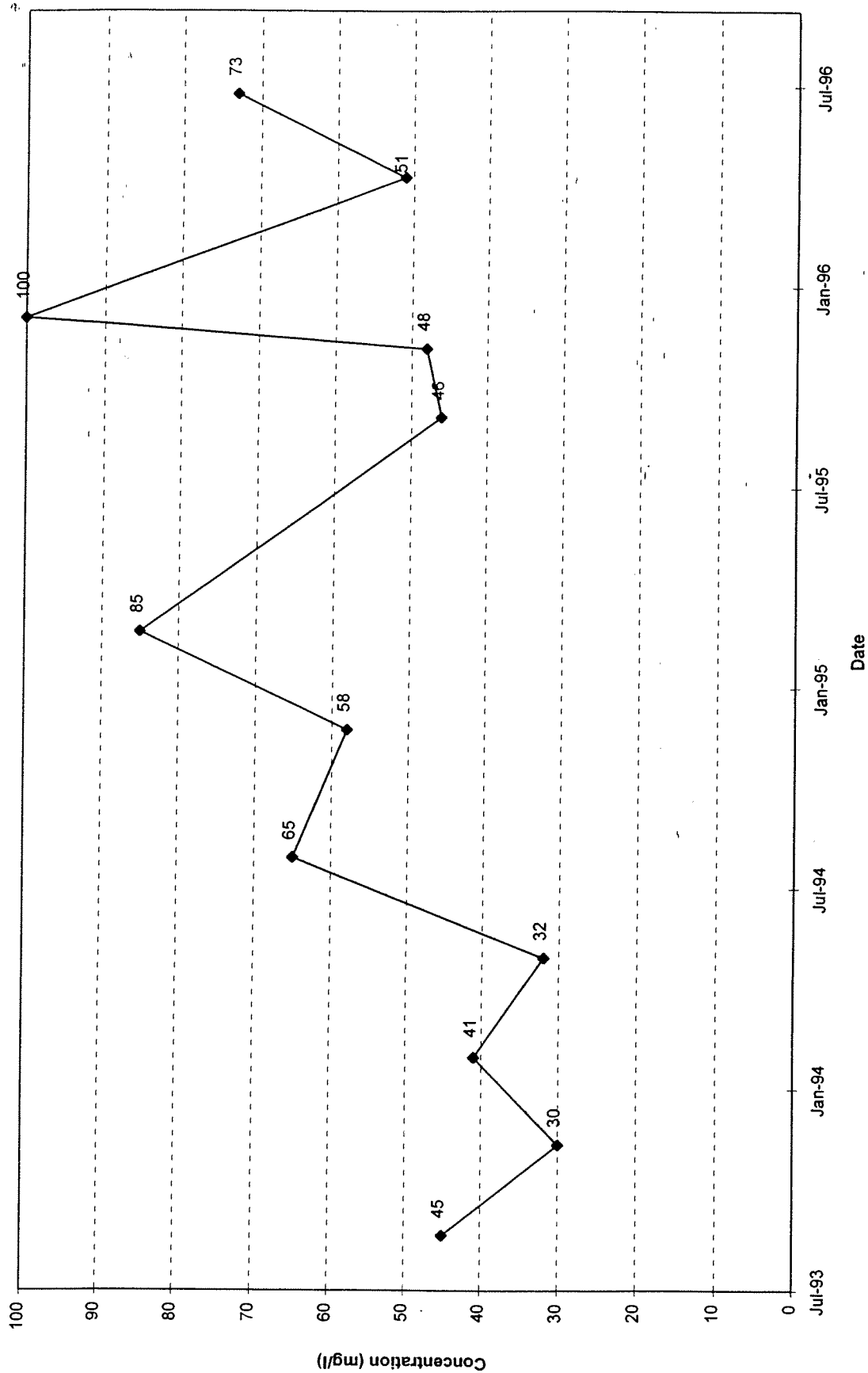


Figure 42
Historic 1,1,1-TCA Concentrations in GW-9

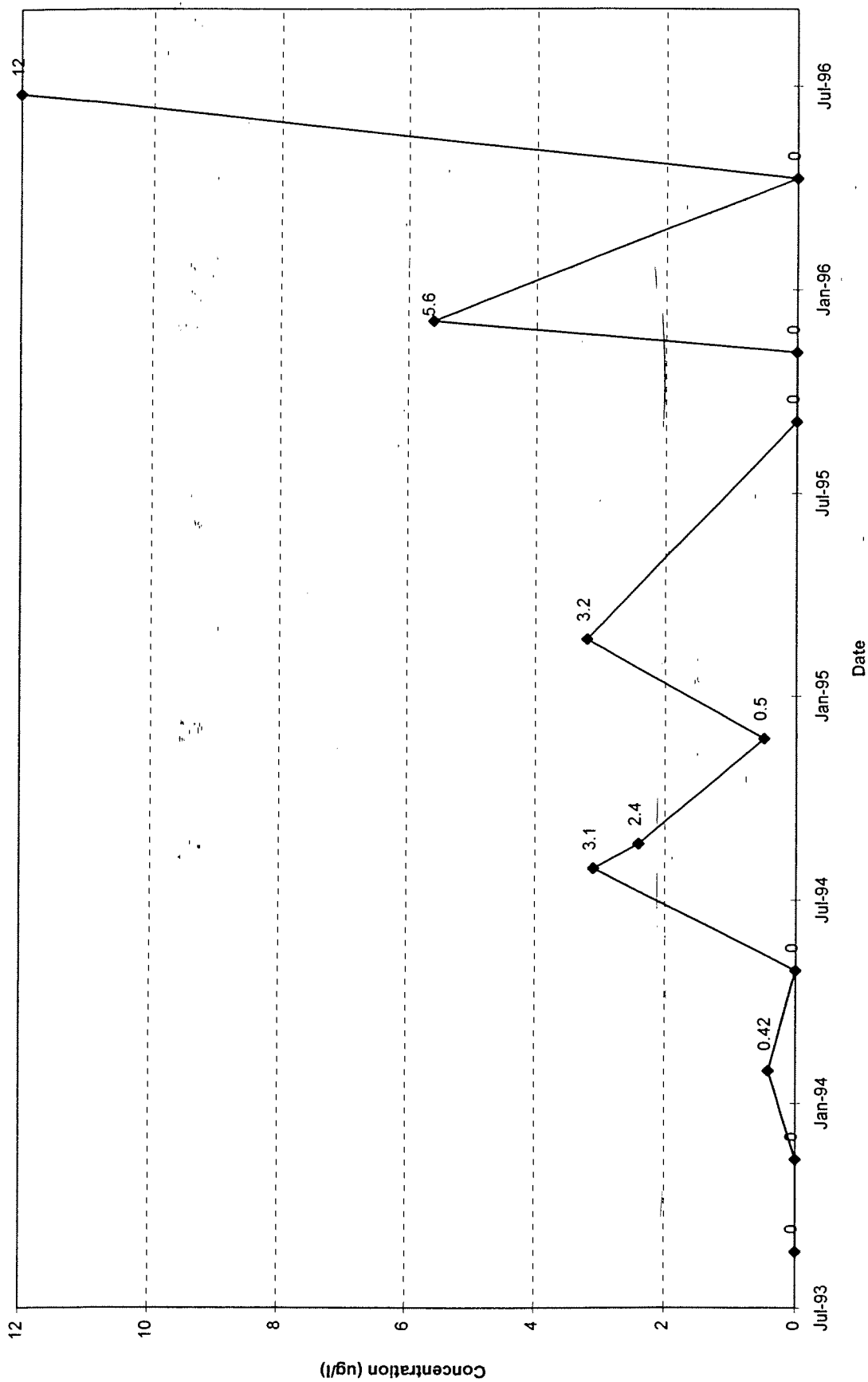


Figure 43
Historic 1,1-DCE Concentrations in GW-9

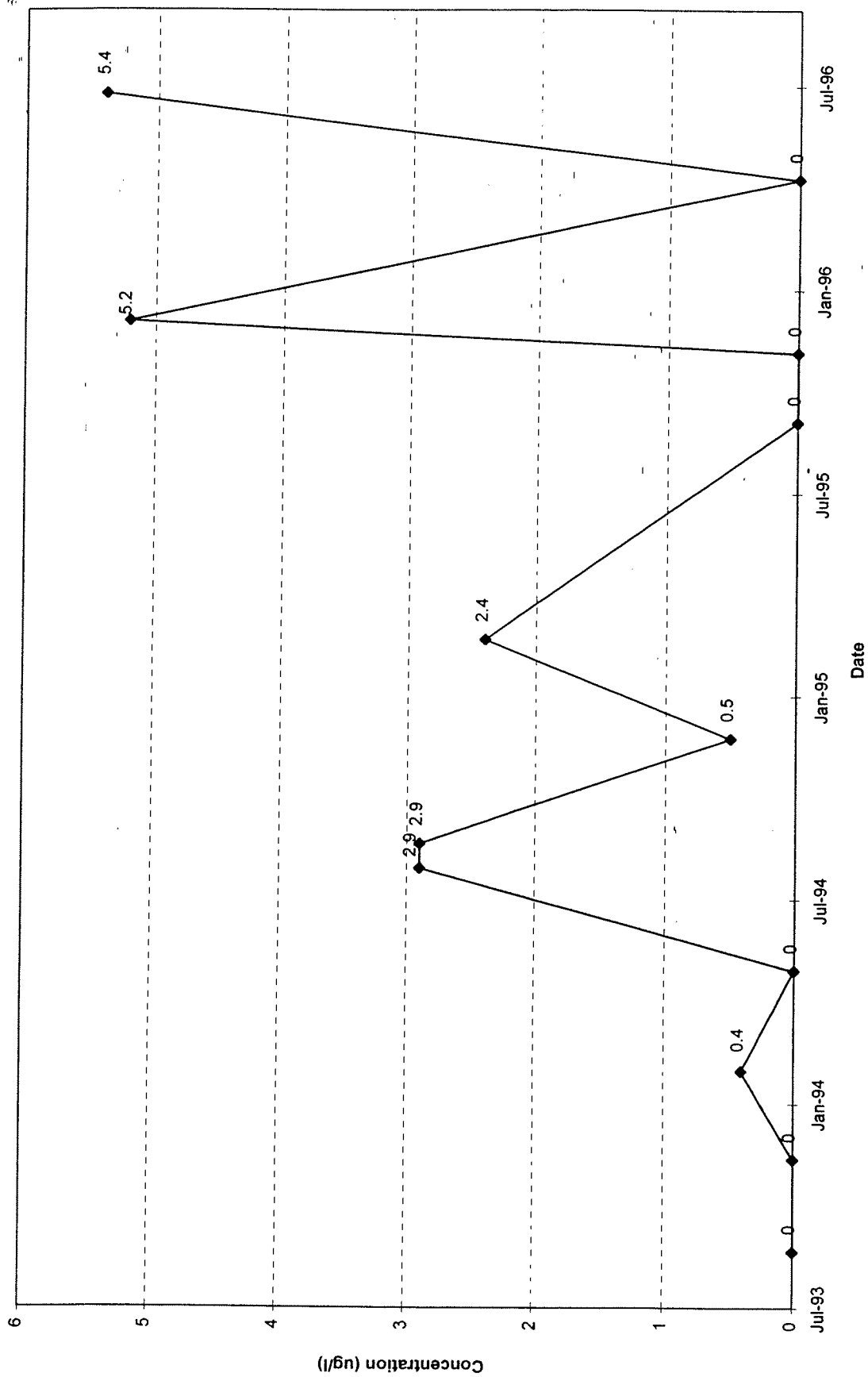


Figure 44
Historic TCE Concentrations in GW-9

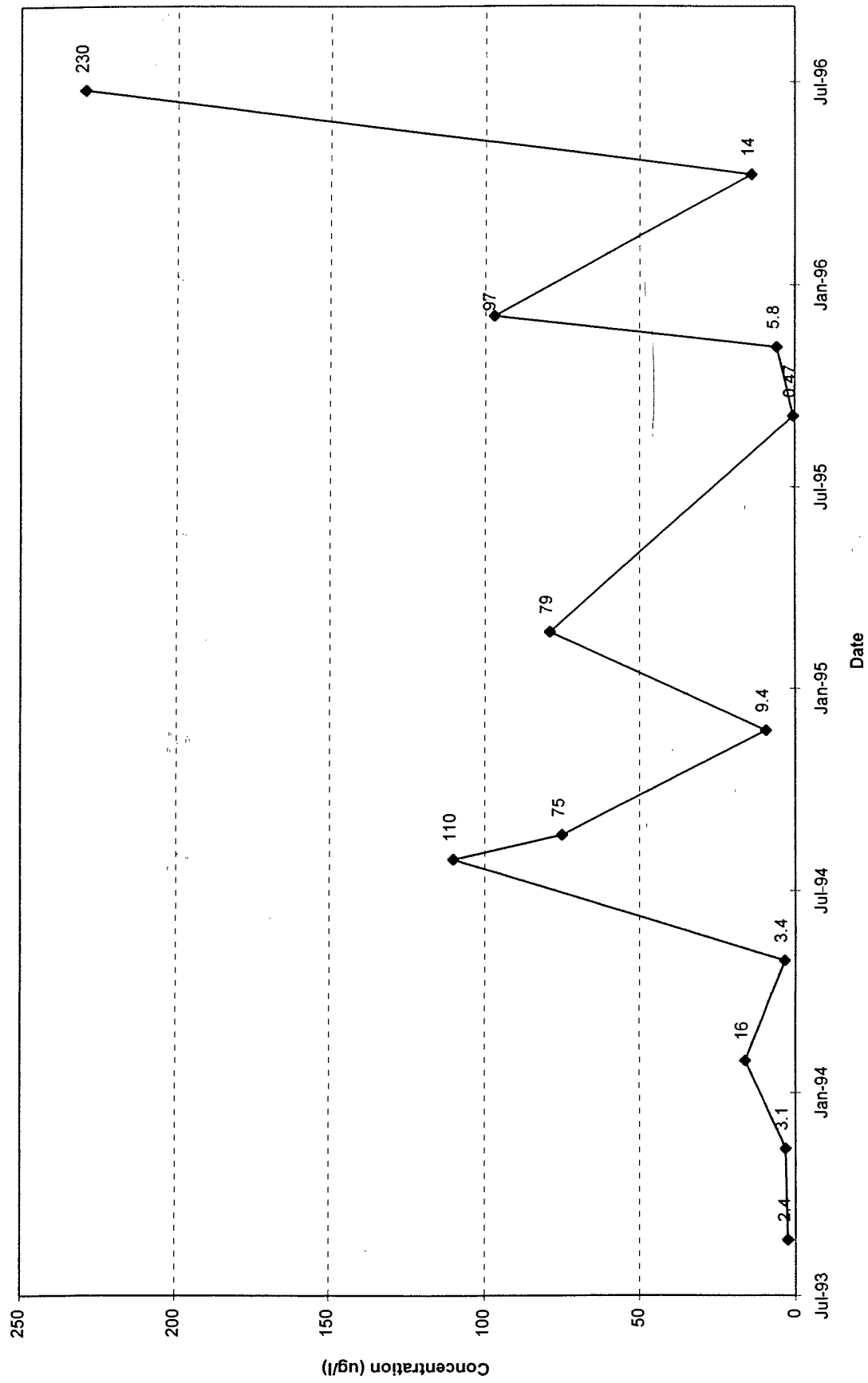


Figure 45
Historic PCE Concentrations in GW-9

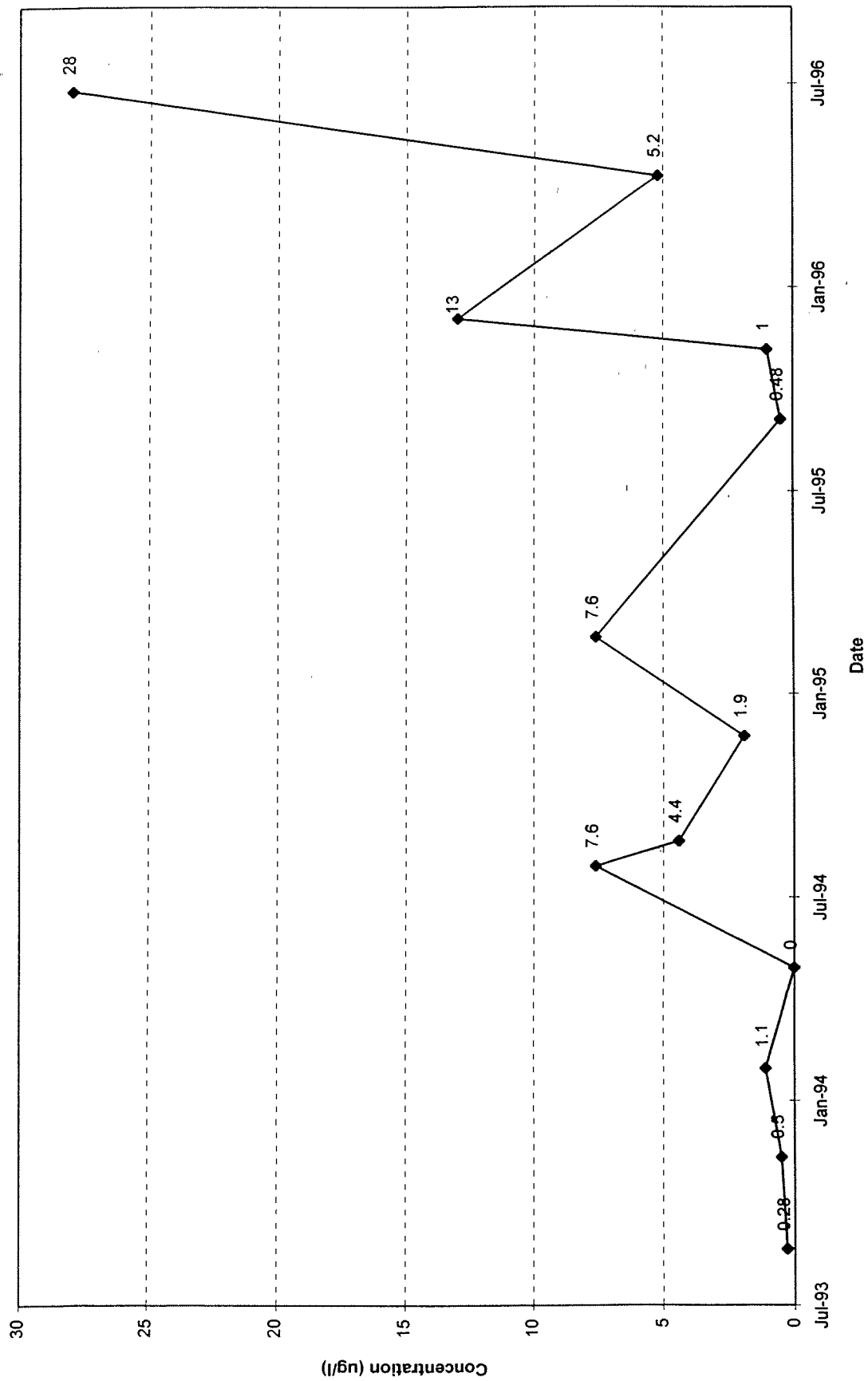


Figure 46
Historic Groundwater Elevations in GW-10

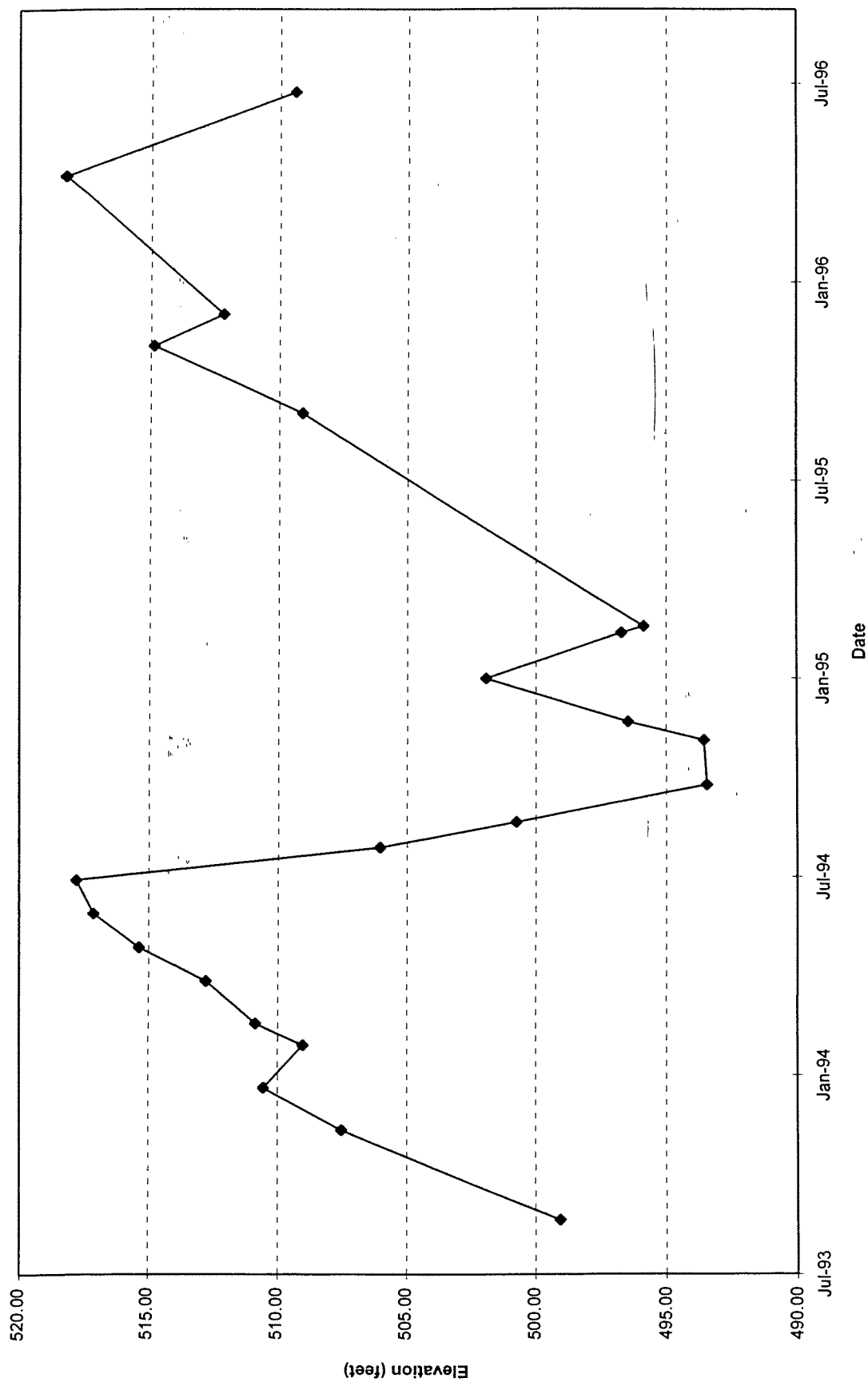


Figure 47
Historic Nitrate Concentrations in GW-10

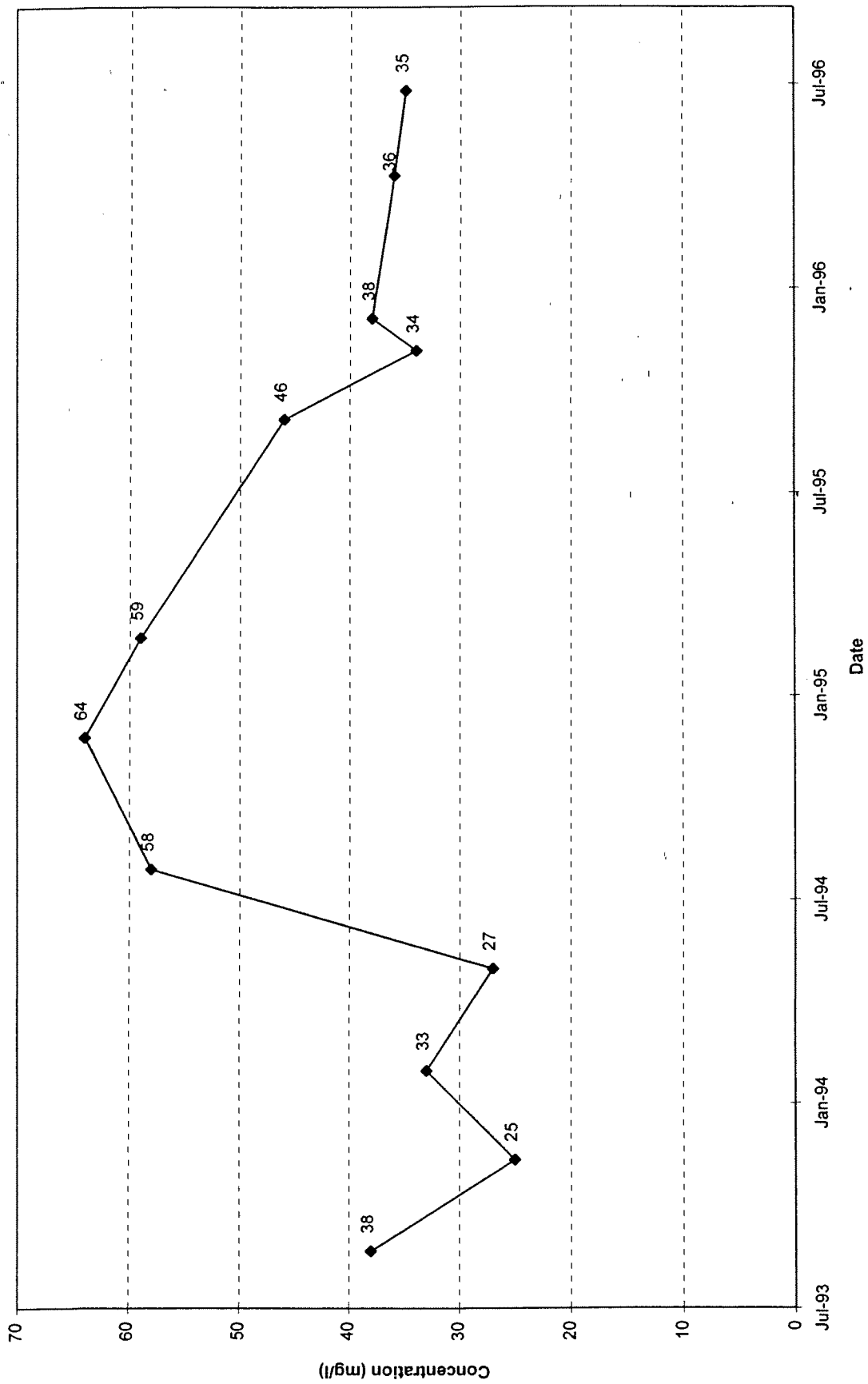


Figure 48
Historic TCE Concentrations in GW-10

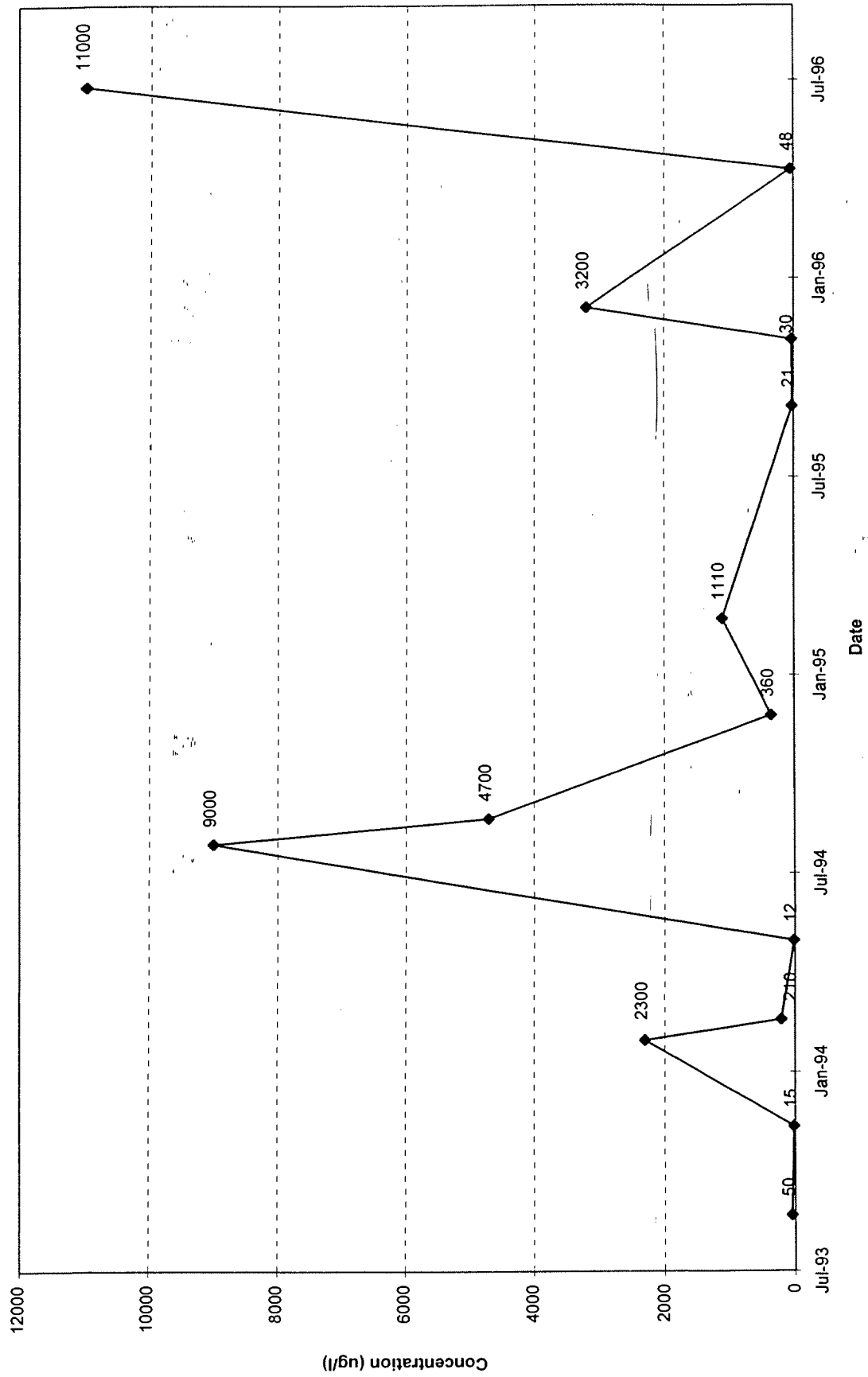
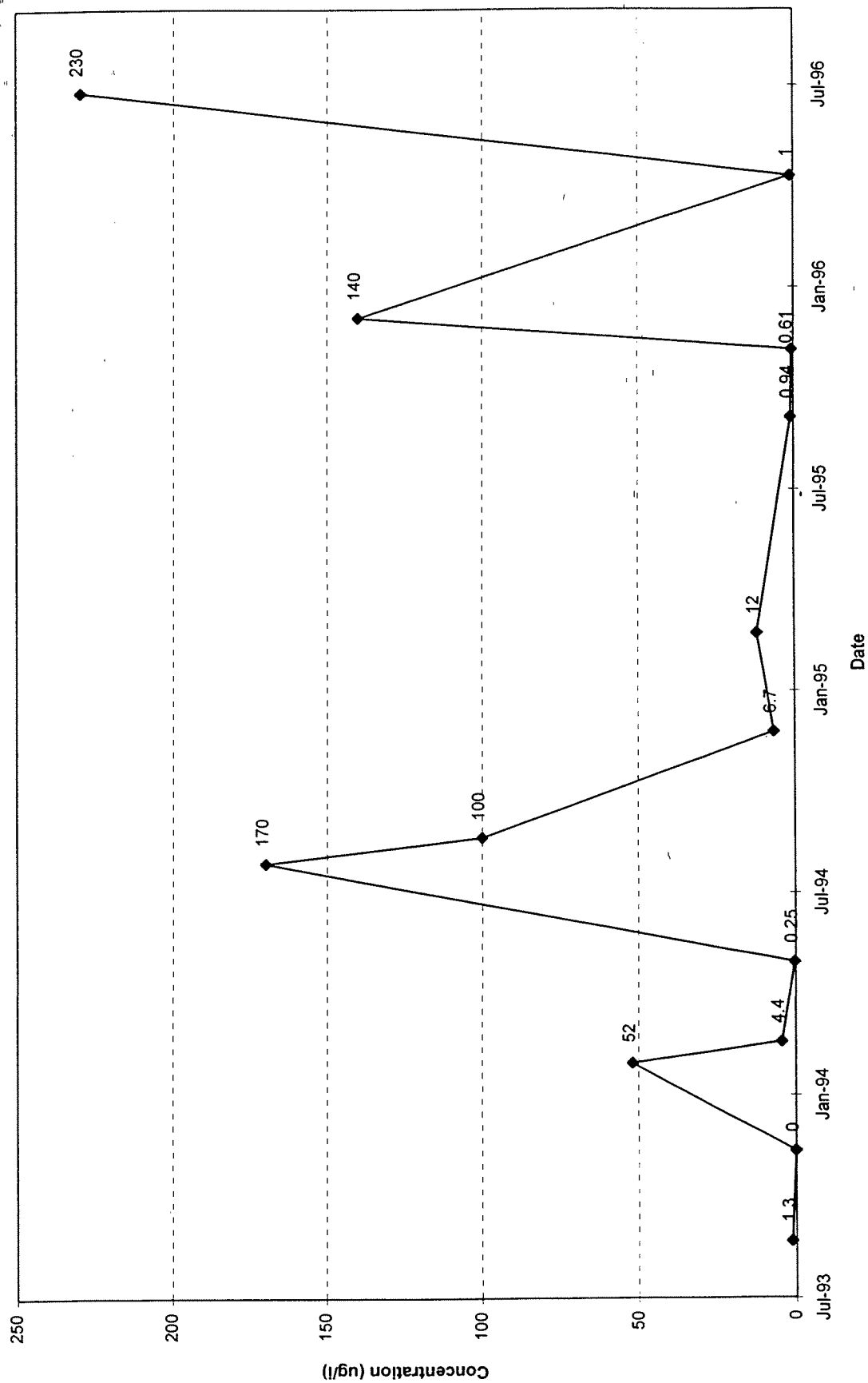


Figure 49
Historic cis-1,2-DCE Concentrations in GW-10



APPENDIX A

STANDARD OPERATING PROCEDURES

GROUNDWATER LEVEL MEASUREMENT PROTOCOL

Prior to purging and sampling of groundwater monitoring wells, an Environmental Instruments Company (EI) water level meter was used to measure the depth to the water surface inside each groundwater monitoring well. Water level measurements were collected from the groundwater monitoring wells in the shortest time-frame possible, in order to obtain an accurate representation of the groundwater potentiometric surface. Initially, the meter was lowered down the groundwater monitoring well until the water surface within the groundwater monitoring well was encountered. The depth to the water surface was measured from a designated point on the well casing to the nearest 0.01 foot and recorded on a standard *SECOR* field data form. This procedure was repeated a second time to confirm the accuracy of the first measurement. The water level meter probe and associated measuring tape were washed in a solution of de-ionized water and a non-phosphate detergent and rinsed with de-ionized water prior to, and between groundwater monitoring wells to reduce the possibility of cross-contamination.

GROUNDWATER PURGING AND SAMPLING PROTOCOL WITH SUBMERSIBLE ELECTRIC PUMP AND BAILER

Groundwater monitoring wells were sampled in order from least contaminated to most contaminated across the Site. A minimum of 3 to 5 well casing volumes of water was purged prior to sampling. Measurements of pH, temperature, and electric conductivity were recorded on a standard *SECOR* field data form during well purging. Stabilization of the physical parameters indicated that water in the monitoring well was representative of water from the formation, and a groundwater sample was collected. All groundwater samples were collected using a 2-inch diameter polypropylene disposable bailer. Sample bottles provided by BCA were filled and placed on ice for transport to the laboratory.

All purging and sampling equipment was decontaminated prior to and between groundwater monitoring wells to reduce the possibility of cross-contamination. The Grundfos™ pumping system was decontaminated by placing the pump in a 35-gallon drum containing a solution of bottled water and a non-phosphate cleanser followed by a 35-gallon drum containing purified bottled water. Once the submersible pump had displaced the water from the drums, the pump was rinsed with de-ionized water. This procedure was performed to ensure the interior of PVC tubing attached to the pump was properly decontaminated. The exterior of the PVC tubing and the reel were also washed with a pressure washer, followed by a rinse with de-ionized water between groundwater monitoring wells. As a final precautionary measure, the bottom of the submersible pump was opened and the water within the pump was replaced with de-ionized water.

APPENDIX B

LABORATORY RESULTS

ANALYTICAL REPORT

B C Analytical

901 Western Avenue
 Lendale, CA 91201
 818/247-5737
 Fax: 818/247-9797

LOG NO: G96-04-512

Received: 23 APR 96

Mailed: MAY - 1 1996

Mr. Greg Vogelpohl
 SECOR
 3437 Empressa Dr., Suite A
 San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-512-1	GW-1	23 APR 96		
04-512-2	GW-2	23 APR 96		
04-512-3	GW-3	23 APR 96		
PARAMETER	04-512-1	04-512-2	04-512-3	
Ammonia (350.1), mg/L	0.12	<0.1	<0.1	
Chloride (300.0), mg/L	19	25	21	
Nitrate (300.0), mg/L	28	29	34	
Sulfate (300.0), mg/L	40	33	33	
Turbidity (180.1), NTU	14	16	13	
Dissolved Solids (160.1), mg/L	290	280	350	
Alkalinity (310.1)				
Carbonate Alk (as CaCO ₃), mg/L	<10	<10	<10	
Bicarbonate Alk (as CaCO ₃), mg/L	170	180	180	
Hydroxide Alk (as CaCO ₃), mg/L	<10	<10	<10	
Total Alkalinity (as CaCO ₃), mg/L	170	180	180	
Calcium (6010), mg/L	59	72	52	
Magnesium (6010), mg/L	12	13	11	
Potassium (6010), mg/L	8.1	8.8	1.9	
Sodium (6010), mg/L	15	16	10	
Digestion (3010), Date	04/29/96	04/29/96	04/29/96	

BCA

B C Analytical

1 Western Avenue
Menlo Park, CA 94025
818/247-5737
Fax: 818/247-9797

LOG NO: G96-04-512

Received: 23 APR 96

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-512-1	GW-1	23 APR 96		
04-512-2	GW-2	23 APR 96		
04-512-3	GW-3	23 APR 96		
PARAMETER	04-512-1	04-512-2	04-512-3	
GRO/DRO (8015M)				
Date Analyzed	04/25/96	04/25/96	04/25/96	
Date Extracted	04/25/96	04/25/96	04/25/96	
Dilution Factor, Times	1	1	1	
TPH (total), mg/L	<2	<2	<2	
Other GRO/DRO (8015M)	---	---	---	
Surrogates **				
Naphthalene Reported, mg/L	2.40	2.23	2.38	
Naphthalene Theoretical, mg/L	2.00	2.00	2.00	

B C Analytical

1 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G96-04-512

Received: 23 APR 96

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-512-1	GW-1	23 APR 96		
04-512-2	GW-2	23 APR 96		
04-512-3	GW-3	23 APR 96		
PARAMETER	04-512-1	04-512-2	04-512-3	
E524.2/VOC (524.2)				
Date Analyzed	04/26/96	04/26/96	04/26/96	
Dilution Factor, Times	1	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5	<0.5	
1,1,1-Trichloroethane, ug/L	<0.5	<0.5	<0.5	
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5	<0.5	
1,1,2-Trichloroethane, ug/L	<0.5	<0.5	<0.5	
1,1-Dichloroethane, ug/L	<0.5	0.71	0.63	
1,1-Dichloroethene, ug/L	<0.5	<0.5	<0.5	
1,1-Dichloropropene, ug/L	<0.5	<0.5	<0.5	
1,2,3-Trichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,2,3-Trichloropropane, ug/L	<0.5	<0.5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5	<0.5	
1,2-Dibromo-3-chloropropane, ug/L	<1	<1	<1	
1,2-Dibromoethane, ug/L	<0.5	<0.5	<0.5	
1,2-Dichloroethane, ug/L	<0.5	<0.5	<0.5	
1,2-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,2-Dichloropropane, ug/L	<0.5	<0.5	<0.5	
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5	<0.5	
1,3-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,3-Dichloropropane, ug/L	<0.5	<0.5	<0.5	
1,4-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	
2,2-Dichloropropane, ug/L	<0.5	<0.5	<0.5	
2-Chlorotoluene, ug/L	<0.5	<0.5	<0.5	

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LOG NO: G96-04-512

Received: 23 APR 96

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San Luis Obispo, CA 93401

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-512-1	GW-1	23 APR 96		
04-512-2	GW-2	23 APR 96		
04-512-3	GW-3	23 APR 96		
PARAMETER		04-512-1	04-512-2	04-512-3
4-Chlorotoluene, ug/L		<0.5	<0.5	<0.5
Bromobenzene, ug/L		<0.5	<0.5	<0.5
Bromochloromethane, ug/L		<0.5	<0.5	<0.5
Bromodichloromethane, ug/L		<0.5	<0.5	<0.5
Bromomethane, ug/L		<0.5	<0.5	<0.5
Benzene, ug/L		<0.5	<0.5	<0.5
Bromoform, ug/L		<0.5	<0.5	<0.5
Chlorobenzene, ug/L		<0.5	<0.5	<0.5
Carbon Tetrachloride, ug/L		<0.5	<0.5	<0.5
Chloroethane, ug/L		<0.5	<0.5	<0.5
Chloroform, ug/L		<0.5	<0.5	<0.5
Chloromethane, ug/L		<0.5	<0.5	<0.5
Dibromochloromethane, ug/L		<0.5	<0.5	<0.5
Dibromomethane, ug/L		<0.5	<0.5	<0.5
Dichlorodifluoromethane, ug/L		1.2	1.4	<0.5
Ethylbenzene, ug/L		<0.5	<0.5	<0.5
Freon 113, ug/L		<0.5	<0.5	<0.5
Hexachlorobutadiene, ug/L		<0.5	<0.5	<0.5
Isopropylbenzene, ug/L		<0.5	<0.5	<0.5
Methylene chloride, ug/L		<1	<1	<1
N-Butylbenzene, ug/L		<0.5	<0.5	<0.5
N-Propylbenzene, ug/L		<0.5	<0.5	<0.5
Naphthalene, ug/L		<1	<1	<1
Styrene, ug/L		<0.5	<0.5	<0.5
Trichloroethene, ug/L		7.1	6.7	11

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-512-1	GW-1	23 APR 96		
04-512-2	GW-2	23 APR 96		
04-512-3	GW-3	23 APR 96		
PARAMETER	04-512-1	04-512-2	04-512-3	
Trichlorofluoromethane, ug/L	<0.5	<0.5	<0.5	
Toluene, ug/L	25	15	13	
Tetrachloroethene, ug/L	2.5	5.0	2.2	
Vinyl chloride, ug/L	<0.5	<0.5	<0.5	
cis-1,2-Dichloroethene, ug/L	1.3	4.3	1.8	
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5	<0.5	
m- and p-Xylene Isomers, ug/L	<1	<1	<1	
o-Xylene, ug/L	<0.5	<0.5	<0.5	
p-Isopropyl toluene, ug/L	0.57	<0.5	<0.5	
sec-Butylbenzene, ug/L	<0.5	<0.5	<0.5	
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5	<0.5	
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5	<0.5	
tert-Butylbenzene, ug/L	<0.5	<0.5	<0.5	
Other E524.2/VOC (524.2)	---	---	---	
Surrogates **				
1,2-Dichlorobenzene-d4 Rep., ug/L	3.88	4.15	4.17	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00	5.00	
4-Bromofluorobenzene Rep., ug/L	4.83	5.24	5.03	
4-Bromofluorobenzene Theo., ug/L	5.00	5.00	5.00	

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REPORT OF ANALYTICAL RESULTS

Page 6

Rinda Heddes Fox DS
Dick Swenson, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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ANALYTICAL REPORT

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1 Western Avenue
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LOG NO: G96-04-530

Received: 24 APR 96

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-530-1	GW-7	24 APR 96		
04-530-2	GW-8	24 APR 96		
04-530-3	GW-9	24 APR 96		
PARAMETER	04-530-1	04-530-2	04-530-3	
Ammonia (350.1), mg/L	<0.1	<0.1	<0.1	
Chloride (300.0), mg/L	31	30	32	
Nitrate (300.0), mg/L	56	47	51	
Sulfate (300.0), mg/L	57	61	61	
Turbidity (180.1), NTU	2.3	26	2.1	
Dissolved Solids (160.1), mg/L	420	440	420	
Alkalinity (310.1)				
Carbonate Alk (as CaCO ₃), mg/L	<10	<10	<10	
Bicarbonate Alk (as CaCO ₃), mg/L	250	250	240	
Hydroxide Alk (as CaCO ₃), mg/L	<10	<10	<10	
Total Alkalinity (as CaCO ₃), mg/L	250	250	240	
Calcium (6010), mg/L	100	110	100	
Magnesium (6010), mg/L	22	25	21	
Potassium (6010), mg/L	3.9	6.4	4.4	
Sodium (6010), mg/L	27	27	27	
Digestion (3010), Date	05/01/96	05/01/96	05/01/96	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-530-1	GW-7	24 APR 96		
04-530-2	GW-8	24 APR 96		
04-530-3	GW-9	24 APR 96		
PARAMETER	04-530-1	04-530-2	04-530-3	
GRO/DRO (8015M)				
Date Analyzed	04/25/96	04/25/96	04/25/96	
Date Extracted	04/25/96	04/25/96	04/25/96	
Dilution Factor, Times	1	1	1	
TPH (total), mg/L	<2	<2	<2	
Other GRO/DRO (8015M)	---	---	---	
Surrogates **				
Naphthalene Reported, mg/L	2.47	2.52	2.34	
Naphthalene Theoretical, mg/L	2.00	2.00	2.00	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-530-1	GW-7	24 APR 96		
04-530-2	GW-8	24 APR 96		
04-530-3	GW-9	24 APR 96		
PARAMETER	04-530-1	04-530-2	04-530-3	
E524.2/VOC (524.2)				
Date Analyzed	04/29/96	04/29/96	04/29/96	
Dilution Factor, Times	1	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5	<0.5	
1,1,1-Trichloroethane, ug/L	0.54	<0.5	<0.5	
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5	<0.5	
1,1,2-Trichloroethane, ug/L	<0.5	<0.5	<0.5	
1,1-Dichloroethane, ug/L	<0.5	<0.5	<0.5	
1,1-Dichloroethene, ug/L	0.80	<0.5	<0.5	
1,1-Dichloropropene, ug/L	<0.5	<0.5	<0.5	
1,2,3-Trichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,2,3-Trichloropropane, ug/L	<0.5	<0.5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5	<0.5	
1,2-Dibromo-3-chloropropane, ug/L	<1	<1	<1	
1,2-Dibromoethane, ug/L	<0.5	<0.5	<0.5	
1,2-Dichloroethane, ug/L	<0.5	<0.5	<0.5	
1,2-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,2-Dichloropropane, ug/L	<0.5	<0.5	<0.5	
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5	<0.5	
1,3-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,3-Dichloropropane, ug/L	<0.5	<0.5	<0.5	
1,4-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	
2,2-Dichloropropane, ug/L	<0.5	<0.5	<0.5	
2-Chlorotoluene, ug/L	<0.5	<0.5	<0.5	



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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-530-1	GW-7	24 APR 96
04-530-2	GW-8	24 APR 96
04-530-3	GW-9	24 APR 96

PARAMETER	04-530-1	04-530-2	04-530-3
4-Chlorotoluene, ug/L	<0.5	<0.5	<0.5
Bromobenzene, ug/L	<0.5	<0.5	<0.5
Bromochloromethane, ug/L	<0.5	<0.5	<0.5
Bromodichloromethane, ug/L	<0.5	<0.5	<0.5
Bromomethane, ug/L	<0.5	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5	<0.5
Bromoform, ug/L	<0.5	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5	<0.5
Carbon Tetrachloride, ug/L	0.89	<0.5	<0.5
Chloroethane, ug/L	<0.5	<0.5	<0.5
Chloroform, ug/L	0.71	<0.5	0.50
Chloromethane, ug/L	<0.5	<0.5	<0.5
Dibromochloromethane, ug/L	<0.5	<0.5	<0.5
Dibromomethane, ug/L	<0.5	<0.5	<0.5
Dichlorodifluoromethane, ug/L	0.69	1.2	1.1
Ethylbenzene, ug/L	<0.5	<0.5	<0.5
Freon 113, ug/L	<0.5	<0.5	<0.5
Hexachlorobutadiene, ug/L	<0.5	<0.5	<0.5
Isopropylbenzene, ug/L	<0.5	<0.5	<0.5
Methylene chloride, ug/L	<1	<1	<1
N-Butylbenzene, ug/L	<0.5	<0.5	<0.5
N-Propylbenzene, ug/L	<0.5	<0.5	<0.5
Naphthalene, ug/L	<1	<1	<1
Styrene, ug/L	<0.5	<0.5	<0.5
Trichloroethene, ug/L	42	6.9	14

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Page 5

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-530-1	GW-7			24 APR 96
04-530-2	GW-8			24 APR 96
04-530-3	GW-9			24 APR 96
PARAMETER		04-530-1	04-530-2	04-530-3
Trichlorofluoromethane, ug/L		<0.5	<0.5	<0.5
Toluene, ug/L		3.1	0.56	<0.5
Tetrachloroethene, ug/L		1.2	2.9	5.2
Vinyl chloride, ug/L		<0.5	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L		1.3	1.5	1.5
cis-1,3-Dichloropropene, ug/L		<0.5	<0.5	<0.5
m- and p-Xylene Isomers, ug/L		<1	<1	<1
o-Xylene, ug/L		<0.5	<0.5	<0.5
p-Isopropyl toluene, ug/L		<0.5	<0.5	<0.5
sec-Butylbenzene, ug/L		<0.5	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L		<0.5	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L		<0.5	<0.5	<0.5
tert-Butylbenzene, ug/L		<0.5	<0.5	<0.5
Other E524.2/VOC (524.2)		---	---	---
Surrogates **				
1,2-Dichlorobenzene-d4 Rep., ug/L		4.31	4.24	4.54
1,2-Dichlorobenzene-d4 Theo, ug/L		5.00	5.00	5.00
4-Bromofluorobenzene Rep., ug/L		5.34	5.19	5.42
4-Bromofluorobenzene Theo., ug/L		5.00	5.00	5.00

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-530-4	Trip Blank AS	24 APR 96		
04-530-5	Field Blank AS	24 APR 96		
04-530-6	Equipment Blank AS	24 APR 96		
PARAMETER	04-530-4	04-530-5	04-530-6	
E524.2/VOC (524.2)				
Date Analyzed	04/26/96	04/26/96	04/26/96	
Dilution Factor, Times	1	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5	<0.5	
1,1,1-Trichloroethane, ug/L	<0.5	<0.5	<0.5	
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5	<0.5	
1,1,2-Trichloroethane, ug/L	<0.5	<0.5	<0.5	
1,1-Dichloroethane, ug/L	<0.5	<0.5	<0.5	
1,1-Dichloroethene, ug/L	<0.5	<0.5	<0.5	
1,1-Dichloropropene, ug/L	<0.5	<0.5	<0.5	
1,2,3-Trichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,2,3-Trichloropropane, ug/L	<0.5	<0.5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5	<0.5	
1,2-Dibromo-3-chloropropane, ug/L	<1	<1	<1	
1,2-Dibromoethane, ug/L	<0.5	<0.5	<0.5	
1,2-Dichloroethane, ug/L	<0.5	<0.5	<0.5	
1,2-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,2-Dichloropropane, ug/L	<0.5	<0.5	<0.5	
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5	<0.5	
1,3-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	
1,3-Dichloropropane, ug/L	<0.5	<0.5	<0.5	
1,4-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	
2,2-Dichloropropane, ug/L	<0.5	<0.5	<0.5	
2-Chlorotoluene, ug/L	<0.5	<0.5	<0.5	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-530-4	Trip Blank AS	24 APR 96		
04-530-5	Field Blank AS	24 APR 96		
04-530-6	Equipment Blank AS	24 APR 96		
PARAMETER		04-530-4	04-530-5	04-530-6
4-Chlorotoluene, ug/L		<0.5	<0.5	<0.5
Bromobenzene, ug/L		<0.5	<0.5	<0.5
Bromochloromethane, ug/L		<0.5	<0.5	<0.5
Bromodichloromethane, ug/L		<0.5	<0.5	<0.5
Bromomethane, ug/L		<0.5	<0.5	<0.5
Benzene, ug/L		<0.5	<0.5	<0.5
Bromoform, ug/L		<0.5	<0.5	<0.5
Chlorobenzene, ug/L		<0.5	<0.5	<0.5
Carbon Tetrachloride, ug/L		<0.5	<0.5	<0.5
Chloroethane, ug/L		<0.5	<0.5	<0.5
Chloroform, ug/L		<0.5	<0.5	<0.5
Chloromethane, ug/L		<0.5	<0.5	<0.5
Dibromochloromethane, ug/L		<0.5	<0.5	<0.5
Dibromomethane, ug/L		<0.5	<0.5	<0.5
Dichlorodifluoromethane, ug/L		<0.5	<0.5	<0.5
Ethylbenzene, ug/L		<0.5	<0.5	<0.5
Freon 113, ug/L		<0.5	<0.5	<0.5
Hexachlorobutadiene, ug/L		<0.5	<0.5	<0.5
Isopropylbenzene, ug/L		<0.5	<0.5	<0.5
Methylene chloride, ug/L		<1	<1	<1
N-Butylbenzene, ug/L		<0.5	<0.5	<0.5
N-Propylbenzene, ug/L		<0.5	<0.5	<0.5
Naphthalene, ug/L		<1	<1	<1
Styrene, ug/L		<0.5	<0.5	<0.5
Trichloroethene, ug/L		<0.5	<0.5	<0.5

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
04-530-4	Trip Blank AS	24 APR 96		
04-530-5	Field Blank AS	24 APR 96		
04-530-6	Equipment Blank AS	24 APR 96		
PARAMETER		04-530-4	04-530-5	04-530-6
Trichlorofluoromethane, ug/L		<0.5	<0.5	<0.5
Toluene, ug/L		<0.5	<0.5	0.79
Tetrachloroethene, ug/L		<0.5	<0.5	<0.5
Vinyl chloride, ug/L		<0.5	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L		<0.5	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L		<0.5	<0.5	<0.5
m- and p-Xylene Isomers, ug/L		<1	<1	<1
o-Xylene, ug/L		<0.5	<0.5	<0.5
p-Isopropyl toluene, ug/L		<0.5	<0.5	<0.5
sec-Butylbenzene, ug/L		<0.5	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L		<0.5	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L		<0.5	<0.5	<0.5
tert-Butylbenzene, ug/L		<0.5	<0.5	<0.5
Other E524.2/VOC (524.2)		---	---	---
Surrogates **				
1,2-Dichlorobenzene-d4 Rep., ug/L		4.33	4.08	4.07
1,2-Dichlorobenzene-d4 Theo, ug/L		5.00	5.00	5.00
4-Bromofluorobenzene Rep., ug/L		5.20	4.96	4.99
4-Bromofluorobenzene Theo., ug/L		5.00	5.00	5.00

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REPORT OF ANALYTICAL RESULTS

Page 9

R. Toghwabi For DS
Dick Swenson Laboratory Director

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-547-1	GW-10	25 APR 96
PARAMETER	04-547-1	
Ammonia (350.1), mg/L	<0.1	
Chloride (300.0), mg/L	23	
Nitrate (300.0), mg/L	36	
Sulfate (300.0), mg/L	57	
Turbidity (180.1), NTU	2.7	
Dissolved Solids (160.1), mg/L	370	
Alkalinity (310.1)		
Carbonate Alk (as CaCO ₃), mg/L	<10	
Bicarbonate Alk (as CaCO ₃), mg/L	220	
Hydroxide Alk (as CaCO ₃), mg/L	<10	
Total Alkalinity (as CaCO ₃), mg/L	220	
Calcium (6010), mg/L	91	
Magnesium (6010), mg/L	19	
Potassium (6010), mg/L	4.0	
Sodium (6010), mg/L	25	
Digestion (3010), Date	05/01/96	



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Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-547-1	GW-10	25 APR 96
PARAMETER	04-547-1	
GRO/DRO (8015M)		
Date Analyzed	04/25/96	
Date Extracted	04/25/96	
Dilution Factor, Times	1	
TPH (total), mg/L	<2	
Other GRO/DRO (8015M)	---	
Surrogates **		
Naphthalene Reported, mg/L	2.28	
Naphthalene Theoretical, mg/L	2.00	

BCA

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Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-547-1	GW-10	25 APR 96
PARAMETER	04-547-1	
E524.2/VOC (524.2)		
Date Analyzed	04/29/96	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.5	
1,1,1-Trichloroethane, ug/L	<0.5	
1,1,2,2-Tetrachloroethane, ug/L	<0.5	
1,1,2-Trichloroethane, ug/L	<0.5	
1,1-Dichloroethane, ug/L	<0.5	
1,1-Dichloroethene, ug/L	<0.5	
1,1-Dichloropropene, ug/L	<0.5	
1,2,3-Trichlorobenzene, ug/L	<0.5	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.5	
1,2,4-Trimethylbenzene, ug/L	<0.5	
1,2-Dibromo-3-chloropropane, ug/L	<1	
1,2-Dibromoethane, ug/L	<0.5	
1,2-Dichloroethane, ug/L	<0.5	
1,2-Dichlorobenzene, ug/L	<0.5	
1,2-Dichloropropane, ug/L	<0.5	
1,3,5-Trimethylbenzene, ug/L	<0.5	
1,3-Dichlorobenzene, ug/L	<0.5	
1,3-Dichloropropane, ug/L	<0.5	
1,4-Dichlorobenzene, ug/L	<0.5	
2,2-Dichloropropane, ug/L	<0.5	
2-Chlorotoluene, ug/L	<0.5	
4-Chlorotoluene, ug/L	<0.5	
Bromobenzene, ug/L	<0.5	

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-547-1	GW-10	25 APR 96
PARAMETER	04-547-1	
Bromochloromethane, ug/L	<0.5	
Bromodichloromethane, ug/L	<0.5	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.5	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.5	
Carbon Tetrachloride, ug/L	<0.5	
Chloroethane, ug/L	<0.5	
Chloroform, ug/L	0.51	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.5	
Dibromomethane, ug/L	<0.5	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.5	
Freon 113, ug/L	<0.5	
Hexachlorobutadiene, ug/L	<0.5	
Isopropylbenzene, ug/L	<0.5	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<0.5	
N-Propylbenzene, ug/L	<0.5	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.5	
Trichloroethene, ug/L	48	
Trichlorofluoromethane, ug/L	<0.5	
Toluene, ug/L	2.3	
Tetrachloroethene, ug/L	2.6	
Vinyl chloride, ug/L	<0.5	

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REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-547-1	GW-10	25 APR 96
PARAMETER	04-547-1	
cis-1,2-Dichloroethene, ug/L	1.0	
cis-1,3-Dichloropropene, ug/L	<0.5	
m- and p-Xylene Isomers, ug/L	<1	
o-Xylene, ug/L	<0.5	
p-Isopropyl toluene, ug/L	<0.5	
sec-Butylbenzene, ug/L	<0.5	
trans-1,2-Dichloroethene, ug/L	<0.5	
trans-1,3-Dichloropropene, ug/L	<0.5	
tert-Butylbenzene, ug/L	<0.5	
Other E524.2/VOC (524.2)	--	
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	4.36	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	
4-Bromofluorobenzene Rep., ug/L	5.18	
4-Bromofluorobenzene Theo., ug/L	5.00	

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LOG NO: G96-04-532

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-532-1	Pump Blank	24 APR 96
PARAMETER	04-532-1	
E524.2/VOC (524.2)		
Date Analyzed	04/26/96	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.5	
1,1,1-Trichloroethane, ug/L	<0.5	
1,1,2,2-Tetrachloroethane, ug/L	<0.5	
1,1,2-Trichloroethane, ug/L	<0.5	
1,1-Dichloroethane, ug/L	<0.5	
1,1-Dichloroethene, ug/L	<0.5	
1,1-Dichloropropene, ug/L	<0.5	
1,2,3-Trichlorobenzene, ug/L	<0.5	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.5	
1,2,4-Trimethylbenzene, ug/L	<0.5	
1,2-Dibromo-3-chloropropane, ug/L	<1	
1,2-Dibromoethane, ug/L	<0.5	
1,2-Dichloroethane, ug/L	<0.5	
1,2-Dichlorobenzene, ug/L	<0.5	
1,2-Dichloropropane, ug/L	<0.5	
1,3,5-Trimethylbenzene, ug/L	<0.5	
1,3-Dichlorobenzene, ug/L	<0.5	
1,3-Dichloropropane, ug/L	<0.5	
1,4-Dichlorobenzene, ug/L	<0.5	
2,2-Dichloropropane, ug/L	<0.5	
2-Chlorotoluene, ug/L	<0.5	
4-Chlorotoluene, ug/L	<0.5	
Bromobenzene, ug/L	<0.5	
Bromochloromethane, ug/L	<0.5	

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Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-532-1	Pump Blank	24 APR 96
PARAMETER	04-532-1	
Bromodichloromethane, ug/L	0.61	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.5	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.5	
Carbon Tetrachloride, ug/L	<0.5	
Chloroethane, ug/L	<0.5	
Chloroform, ug/L	1.6	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.5	
Dibromomethane, ug/L	<0.5	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.5	
Freon 113, ug/L	<0.5	
Hexachlorobutadiene, ug/L	<0.5	
Isopropylbenzene, ug/L	<0.5	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<0.5	
N-Propylbenzene, ug/L	<0.5	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.5	
Trichloroethene, ug/L	0.61	
Trichlorofluoromethane, ug/L	<0.5	
Toluene, ug/L	27	
Tetrachloroethene, ug/L	0.65	
Vinyl chloride, ug/L	<0.5	
cis-1,2-Dichloroethene, ug/L	<0.5	



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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-532-1	Pump Blank	24 APR 96
PARAMETER	04-532-1	
cis-1,3-Dichloropropene, ug/L	<0.5	
m- and p-Xylene Isomers, ug/L	<1	
o-Xylene, ug/L	<0.5	
p-Isopropyl toluene, ug/L	4.3	
sec-Butylbenzene, ug/L	<0.5	
trans-1,2-Dichloroethene, ug/L	<0.5	
trans-1,3-Dichloropropene, ug/L	<0.5	
tert-Butylbenzene, ug/L	<0.5	
Other E524.2/VOC (524.2)	---	
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	4.13	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	
4-Bromofluorobenzene Rep., ug/L	4.97	
4-Bromofluorobenzene Theo., ug/L	5.00	

R. Yaghoubi For GG
Greta Galoustian, Laboratory Director

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Western Avenue
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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
07-191-1	GW-1	09 JUL 96			
07-191-2	GW-2	09 JUL 96			
07-191-3	GW-3	09 JUL 96			
07-191-4	GW-9	09 JUL 96			
PARAMETER	07-191-1	07-191-2	07-191-3	07-191-4	
Ammonia (350.1), mg/L	<0.1	<0.1	0.17	<0.1	
Chloride (300.0), mg/L	23	38	13	29	
Nitrate (300.0), mg/L	39	67	35	73	
Sulfate (300.0), mg/L	36	69	24	58	
Turbidity (180.1), NTU	6.5	3.9	21	2.5	
Dissolved Solids (160.1), mg/L	360	520	230	500	
Alkalinity (310.1)					
Carbonate Alk (as CaCO ₃), mg/L	<10	<10	<10	<10	
Bicarbonate Alk (as CaCO ₃), mg/L	200	270	120	260	
Hydroxide Alk (as CaCO ₃), mg/L	<10	<10	<10	<10	
Total Alkalinity (as CaCO ₃), mg/L	200	270	120	260	
Calcium (6010), mg/L	70	120	44	110	
Magnesium (6010), mg/L	15	25	9.3	24	
Potassium (6010), mg/L	17	4.7	14	4.6	
Sodium (6010), mg/L	19	25	16	27	
Digestion (3010), Date	07/11/96	07/11/96	07/11/96	07/11/96	

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
07-191-1	GW-1	09 JUL 96			
07-191-2	GW-2	09 JUL 96			
07-191-3	GW-3	09 JUL 96			
07-191-4	GW-9	09 JUL 96			
PARAMETER	07-191-1	07-191-2	07-191-3	07-191-4	
GRO/DRO (8015M)					
Date Analyzed	07/16/96	07/16/96	07/16/96	07/16/96	
Date Extracted	07/15/96	07/15/96	07/15/96	07/15/96	
Dilution Factor, Times	1	1	1	1	
TPH (total), mg/kg	<2	<2	<2	<2	
Other GRO/DRO (8015M)	---	---	---	---	
Surrogates **					
Naphthalene Reported, mg/kg	1.92	1.86	1.84	2.02	
Naphthalene Theoretical, mg/kg	2.00	2.00	2.00	2.00	

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Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
07-191-1	GW-1				09 JUL 96
07-191-2	GW-2				09 JUL 96
07-191-3	GW-3				09 JUL 96
07-191-4	GW-9				09 JUL 96
PARAMETER	07-191-1	07-191-2	07-191-3	07-191-4	
E524.2/VOC (524.2)					
Date Analyzed	07/16/96	07/17/96	07/17/96	07/17/96	
Dilution Factor, Times	1	1	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,1,1-Trichloroethane, ug/L	3.8	0.81	2.6	12	
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,1,2-Trichloroethane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,1-Dichloroethane, ug/L	0.96	<0.5	2.6	<0.5	
1,1-Dichloroethene, ug/L	6.2	1.7	5.3	5.4	
1,1-Dichloropropene, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2,3-Trichlorobenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2,3-Trichloropropane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2,4-Trimethylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2-Dibromo-3-chloropropane, ug/L	<1	<1	<1	<1	
1,2-Dibromoethane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2-Dichloroethane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2-Dichloropropane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,3,5-Trimethylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
1,3-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
1,3-Dichloropropane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,4-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
2,2-Dichloropropane, ug/L	<0.5	<0.5	<0.5	<0.5	

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
07-191-1	GW-1	09 JUL 96			
07-191-2	GW-2	09 JUL 96			
07-191-3	GW-3	09 JUL 96			
07-191-4	GW-9	09 JUL 96			
PARAMETER	07-191-1	07-191-2	07-191-3	07-191-4	
2-Chlorotoluene, ug/L	<0.5	<0.5	<0.5	<0.5	
4-Chlorotoluene, ug/L	<0.5	<0.5	<0.5	<0.5	
Bromobenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
Bromochloromethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Bromodichloromethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Bromomethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Benzene, ug/L	<0.5	<0.5	<0.5	<0.5	
Bromoform, ug/L	<0.5	<0.5	<0.5	<0.5	
Chlorobenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
Carbon Tetrachloride, ug/L	1.6	2.0	3.2	2.5	
Chloroethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Chloroform, ug/L	1.0	<0.5	0.99	1.3	
Chloromethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Dibromochloromethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Dibromomethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Dichlorodifluoromethane, ug/L	<0.5	<0.5	<0.5	0.76	
Ethylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
Freon 113, ug/L	<0.5	<0.5	<0.5	<0.5	
Hexachlorobutadiene, ug/L	<0.5	<0.5	<0.5	<0.5	
Isopropylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
Methylene chloride, ug/L	<1	<1	<1	<1	
N-Butylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
N-Propylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
Naphthalene, ug/L	<1	<1	<1	<1	

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Fax: 818/247-9797

LOG NO: G96-07-191

Received: 09 JUL 96

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
07-191-1	GW-1				09 JUL 96
07-191-2	GW-2				09 JUL 96
07-191-3	GW-3				09 JUL 96
07-191-4	GW-9				09 JUL 96
PARAMETER	07-191-1	07-191-2	07-191-3	07-191-4	
Styrene, ug/L	<0.5	<0.5	<0.5	<0.5	
Trichloroethene, ug/L	86	21	90	230	
Trichlorofluoromethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Toluene, ug/L	3.9	3.5	5.8	<0.5	
Tetrachloroethene, ug/L	3.0	2.8	1.6	28	
Vinyl chloride, ug/L	<0.5	<0.5	<0.5	<0.5	
cis-1,2-Dichloroethene, ug/L	1.9	2.1	0.87	0.77	
cis-1,3-Dichloropropene, ug/L	<0.5	<0.5	<0.5	<0.5	
m- and p-Xylene Isomers, ug/L	<1	<1	<1	<1	
o-Xylene, ug/L	<0.5	<0.5	<0.5	<0.5	
p-Isopropyl toluene, ug/L	<0.5	<0.5	<0.5	<0.5	
sec-Butylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
trans-1,2-Dichloroethene, ug/L	<0.5	<0.5	<0.5	<0.5	
trans-1,3-Dichloropropene, ug/L	<0.5	<0.5	<0.5	<0.5	
tert-Butylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	
Other E524.2/VOC (524.2)	---	---	---	---	
Surrogates **					
1,2-Dichlorobenzene-d4 Rep., ug/L	9.53	10.0	10.5	9.78	
1,2-Dichlorobenzene-d4 Theo, ug/L	10.0	10.0	10.0	10.0	
4-Bromofluorobenzene Rep., ug/L	9.87	10.4	10.4	10.0	
4-Bromofluorobenzene Theo., ug/L	10.0	10.0	10.0	10.0	

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Linda Geddes For 66
Greta Galoustian, Laboratory Director

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-1	GW-7	10 JUL 96		
07-215-2	GW-8	10 JUL 96		
07-215-3	GW-10	10 JUL 96		
PARAMETER	07-215-1	07-215-2	07-215-3	
Ammonia (350.1), mg/L	<0.1	<0.1	<0.1	
Chloride (300.0), mg/L	36	28	26	
Nitrate (300.0), mg/L	80	39	35	
Sulfate (300.0), mg/L	120	49	63	
Turbidity (180.1), NTU	1.7	24	0.9	
Dissolved Solids (160.1), mg/L	720	450	610	
Alkalinity (310.1)				
Carbonate Alk (as CaCO3), mg/L	<10	<10	<10	
Bicarbonate Alk (as CaCO3), mg/L	430	260	390	
Hydroxide Alk (as CaCO3), mg/L	<10	<10	<10	
Total Alkalinity (as CaCO3), mg/L	430	260	390	
Calcium (6010), mg/L	180	100	140	
Magnesium (6010), mg/L	38	21	30	
Potassium (6010), mg/L	5.0	4.2	4.7	
Sodium (6010), mg/L	30	25	27	
Digestion (3010), Date	07/11/96	07/11/96	07/11/96	

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-1	GW-7	10 JUL 96		
07-215-2	GW-8	10 JUL 96		
07-215-3	GW-10	10 JUL 96		
PARAMETER	07-215-1	07-215-2	07-215-3	
GRO/DRO (8015M)				
Date Analyzed	07/17/96	07/17/96	07/17/96	
Date Extracted	07/15/96	07/15/96	07/15/96	
Dilution Factor, Times	1	1	1	
TPH (total), mg/kg	<2	<2	<2	
Other GRO/DRO (8015M)	---	---	---	
Surrogates **				
Naphthalene Reported, mg/kg	1.86	2.06	1.94	
Naphthalene Theoretical, mg/kg	2.00	2.00	2.00	

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Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-1	GW-7			10 JUL 96
07-215-2	GW-8			10 JUL 96
07-215-3	GW-10			10 JUL 96
PARAMETER		07-215-1	07-215-2	07-215-3
E524.2/VOC (524.2)				
Date Analyzed		07/23/96	07/17/96	07/17/96
Dilution Factor, Times		20	1	1
1,1,1,2-Tetrachloroethane, ug/L		<10	<0.5	<0.5
1,1,1-Trichloroethane, ug/L		63	4.9	89
1,1,2,2-Tetrachloroethane, ug/L		<10	<0.5	<0.5
1,1,2-Trichloroethane, ug/L		<10	<0.5	4.5
1,1-Dichloroethane, ug/L		60	<0.5	8.6
1,1-Dichloroethene, ug/L		42	4.4	53
1,1-Dichloropropene, ug/L		<10	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L		<10	<0.5	<0.5
1,2,3-Trichloropropane, ug/L		<10	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L		<10	<0.5	<0.5
1,2,4-Trimethylbenzene, ug/L		<10	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L		<20	<1	<1
1,2-Dibromoethane, ug/L		<10	<0.5	<0.5
1,2-Dichloroethane, ug/L		<10	<0.5	1.5
1,2-Dichlorobenzene, ug/L		<10	<0.5	<0.5
1,2-Dichloropropane, ug/L		<10	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L		<10	<0.5	<0.5
1,3-Dichlorobenzene, ug/L		<10	<0.5	<0.5
1,3-Dichloropropane, ug/L		<10	<0.5	<0.5
1,4-Dichlorobenzene, ug/L		<10	<0.5	<0.5
2,2-Dichloropropane, ug/L		<10	<0.5	<0.5
2-Chlorotoluene, ug/L		<10	<0.5	<0.5

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-1	GW-7	10 JUL 96		
07-215-2	GW-8	10 JUL 96		
07-215-3	GW-10	10 JUL 96		
PARAMETER	07-215-1	07-215-2	07-215-3	
4-Chlorotoluene, ug/L	<10	<0.5	<0.5	
Bromobenzene, ug/L	<10	<0.5	<0.5	
Bromochloromethane, ug/L	<10	<0.5	<0.5	
Bromodichloromethane, ug/L	<10	<0.5	<0.5	
Bromomethane, ug/L	<10	<0.5	<0.5	
Benzene, ug/L	<10	<0.5	2.8	
Bromoform, ug/L	<10	<0.5	<0.5	
Chlorobenzene, ug/L	<10	<0.5	<0.5	
Carbon Tetrachloride, ug/L	<10	5.6	8.3	
Chloroethane, ug/L	<10	<0.5	<0.5	
Chloroform, ug/L	140	1.9	150	
Chloromethane, ug/L	<10	<0.5	<0.5	
Dibromochloromethane, ug/L	<10	<0.5	<0.5	
Dibromomethane, ug/L	<10	<0.5	<0.5	
Dichlorodifluoromethane, ug/L	<10	<0.5	<0.5	
Ethylbenzene, ug/L	<10	<0.5	<0.5	
Freon 113, ug/L	<10	<0.5	<0.5	
Hexachlorobutadiene, ug/L	<10	<0.5	<0.5	
Isopropylbenzene, ug/L	<10	<0.5	<0.5	
Methylene chloride, ug/L	<20	1.4	2.5	
N-Butylbenzene, ug/L	<10	<0.5	<0.5	
N-Propylbenzene, ug/L	<10	<0.5	<0.5	
Naphthalene, ug/L	<20	<1	<1	
Styrene, ug/L	<10	<0.5	<0.5	
Trichloroethene, ug/L	17000	680	11000	

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Page 5

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-1	GW-7			10 JUL 96
07-215-2	GW-8			10 JUL 96
07-215-3	GW-10			10 JUL 96
PARAMETER		07-215-1	07-215-2	07-215-3
Trichlorofluoromethane, ug/L		<10	<0.5	<0.5
Toluene, ug/L		<10	<0.5	<0.5
Tetrachloroethene, ug/L		36	7.8	81
Vinyl chloride, ug/L		<10	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L		190	2.1	230
cis-1,3-Dichloropropene, ug/L		<10	<0.5	<0.5
m- and p-Xylene Isomers, ug/L		<20	<1	<1
o-Xylene, ug/L		<10	<0.5	<0.5
p-Isopropyl toluene, ug/L		<10	<0.5	<0.5
sec-Butylbenzene, ug/L		<10	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L		<10	<0.5	5.6
trans-1,3-Dichloropropene, ug/L		<10	<0.5	<0.5
tert-Butylbenzene, ug/L		<10	<0.5	<0.5
Other E524.2/VOC (524.2)		---	---	---
Surrogates **				
1,2-Dichlorobenzene-d4 Rep., ug/L		178	10.1	9.76
1,2-Dichlorobenzene-d4 Theo, ug/L		200	10.0	10.0
4-Bromofluorobenzene Rep., ug/L		189	10.3	10.2
4-Bromofluorobenzene Theo., ug/L		200	10.0	10.0

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REPORT OF ANALYTICAL RESULTS

Page 6

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-4	Field Blank AS	10 JUL 96		
07-215-5	Bailer Blank AS	10 JUL 96		
07-215-6	Trip Blank AS	10 JUL 96		
PARAMETER		07-215-4	07-215-5	07-215-6
E524.2/VOC (524.2)				
Date Analyzed		07/18/96	07/18/96	07/18/96
Dilution Factor, Times		1	1	1
1,1,1,2-Tetrachloroethane, ug/L		<0.5	<0.5	<0.5
1,1,1-Trichloroethane, ug/L		<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane, ug/L		<0.5	<0.5	<0.5
1,1,2-Trichloroethane, ug/L		<0.5	<0.5	<0.5
1,1-Dichloroethane, ug/L		<0.5	<0.5	<0.5
1,1-Dichloroethene, ug/L		<0.5	<0.5	<0.5
1,1-Dichloropropene, ug/L		<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene, ug/L		<0.5	<0.5	<0.5
1,2,3-Trichloropropane, ug/L		<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L		<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene, ug/L		<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane, ug/L		<1	<1	<1
1,2-Dibromoethane, ug/L		<0.5	<0.5	<0.5
1,2-Dichloroethane, ug/L		<0.5	<0.5	<0.5
1,2-Dichlorobenzene, ug/L		<0.5	<0.5	<0.5
1,2-Dichloropropane, ug/L		<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene, ug/L		<0.5	<0.5	<0.5
1,3-Dichlorobenzene, ug/L		<0.5	<0.5	<0.5
1,3-Dichloropropane, ug/L		<0.5	<0.5	<0.5
1,4-Dichlorobenzene, ug/L		<0.5	<0.5	<0.5
2,2-Dichloropropane, ug/L		<0.5	<0.5	<0.5
2-Chlorotoluene, ug/L		<0.5	<0.5	<0.5

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-4	Field Blank AS	10 JUL 96		
07-215-5	Bailer Blank AS	10 JUL 96		
07-215-6	Trip Blank AS	10 JUL 96		
PARAMETER		07-215-4	07-215-5	07-215-6
4-Chlorotoluene, ug/L		<0.5	<0.5	<0.5
Bromobenzene, ug/L		<0.5	<0.5	<0.5
Bromochloromethane, ug/L		<0.5	<0.5	<0.5
Bromodichloromethane, ug/L		<0.5	<0.5	<0.5
Bromomethane, ug/L		<0.5	<0.5	<0.5
Benzene, ug/L		<0.5	<0.5	<0.5
Bromoform, ug/L		<0.5	<0.5	<0.5
Chlorobenzene, ug/L		<0.5	<0.5	<0.5
Carbon Tetrachloride, ug/L		<0.5	<0.5	<0.5
Chloroethane, ug/L		<0.5	<0.5	<0.5
Chloroform, ug/L		<0.5	<0.5	<0.5
Chloromethane, ug/L		<0.5	<0.5	<0.5
Dibromochloromethane, ug/L		<0.5	<0.5	<0.5
Dibromomethane, ug/L		<0.5	<0.5	<0.5
Dichlorodifluoromethane, ug/L		<0.5	<0.5	<0.5
Ethylbenzene, ug/L		<0.5	<0.5	<0.5
Freon 113, ug/L		<0.5	<0.5	<0.5
Hexachlorobutadiene, ug/L		<0.5	<0.5	<0.5
Isopropylbenzene, ug/L		<0.5	<0.5	<0.5
Methylene chloride, ug/L		<1	<1	<1
N-Butylbenzene, ug/L		<0.5	<0.5	<0.5
N-Propylbenzene, ug/L		<0.5	<0.5	<0.5
Naphthalene, ug/L		<1	<1	<1
Styrene, ug/L		<0.5	<0.5	<0.5
Trichloroethene, ug/L		<0.5	<0.5	<0.5



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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
07-215-4	Field Blank AS	10 JUL 96		
07-215-5	Bailer Blank AS	10 JUL 96		
07-215-6	Trip Blank AS	10 JUL 96		
PARAMETER		07-215-4	07-215-5	07-215-6
Trichlorofluoromethane, ug/L		<0.5	<0.5	1.5
Toluene, ug/L		<0.5	<0.5	<0.5
Tetrachloroethene, ug/L		<0.5	<0.5	<0.5
Vinyl chloride, ug/L		<0.5	<0.5	<0.5
cis-1,2-Dichloroethene, ug/L		<0.5	<0.5	<0.5
cis-1,3-Dichloropropene, ug/L		<0.5	<0.5	<0.5
m- and p-Xylene Isomers, ug/L		<1	<1	<1
o-Xylene, ug/L		<0.5	<0.5	<0.5
p-Isopropyl toluene, ug/L		<0.5	<0.5	<0.5
sec-Butylbenzene, ug/L		<0.5	<0.5	<0.5
trans-1,2-Dichloroethene, ug/L		<0.5	<0.5	<0.5
trans-1,3-Dichloropropene, ug/L		<0.5	<0.5	<0.5
tert-Butylbenzene, ug/L		<0.5	<0.5	<0.5
Other E524.2/VOC (524.2)		---	---	---
Surrogates **				
1,2-Dichlorobenzene-d4 Rep., ug/L		9.82	10.1	10.6
1,2-Dichlorobenzene-d4 Theo, ug/L		10.0	10.0	10.0
4-Bromofluorobenzene Rep., ug/L		9.74	10.1	10.2
4-Bromofluorobenzene Theo., ug/L		10.0	10.0	10.0

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
07-189-1	Pump Blank	09 JUL 96
PARAMETER	07-189-1	
E524.2/VOC (524.2)		
Date Analyzed	07/16/96	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.5	
1,1,1-Trichloroethane, ug/L	<0.5	
1,1,2,2-Tetrachloroethane, ug/L	<0.5	
1,1,2-Trichloroethane, ug/L	<0.5	
1,1-Dichloroethane, ug/L	<0.5	
1,1-Dichloroethene, ug/L	<0.5	
1,1-Dichloropropene, ug/L	<0.5	
1,2,3-Trichlorobenzene, ug/L	<0.5	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.5	
1,2,4-Trimethylbenzene, ug/L	<0.5	
1,2-Dibromo-3-chloropropane, ug/L	<1	
1,2-Dibromoethane, ug/L	<0.5	
1,2-Dichloroethane, ug/L	<0.5	
1,2-Dichlorobenzene, ug/L	<0.5	
1,2-Dichloropropane, ug/L	<0.5	
1,3,5-Trimethylbenzene, ug/L	<0.5	
1,3-Dichlorobenzene, ug/L	<0.5	
1,3-Dichloropropane, ug/L	<0.5	
1,4-Dichlorobenzene, ug/L	<0.5	
2,2-Dichloropropane, ug/L	<0.5	
2-Chlorotoluene, ug/L	<0.5	
4-Chlorotoluene, ug/L	<0.5	
Bromobenzene, ug/L	<0.5	
Bromochloromethane, ug/L	<0.5	

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Fax: 818/247-9797

LOG NO: G96-07-189

Received: 09 JUL 96

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
07-189-1	Pump Blank	09 JUL 96
PARAMETER	07-189-1	
Bromodichloromethane, ug/L	<0.5	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.5	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.5	
Carbon Tetrachloride, ug/L	<0.5	
Chloroethane, ug/L	<0.5	
Chloroform, ug/L	1.4	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.5	
Dibromomethane, ug/L	<0.5	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.5	
Freon 113, ug/L	<0.5	
Hexachlorobutadiene, ug/L	<0.5	
Isopropylbenzene, ug/L	<0.5	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<0.5	
N-Propylbenzene, ug/L	<0.5	
Naphthalene, ug/L	0.66	
Styrene, ug/L	<0.5	
Trichloroethene, ug/L	1.2	
Trichlorofluoromethane, ug/L	<0.5	
Toluene, ug/L	43	
Tetrachloroethene, ug/L	1.4	
Vinyl chloride, ug/L	<0.5	
cis-1,2-Dichloroethene, ug/L	1.0	

B C Analytical

Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G96-07-189

Received: 09 JUL 96

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, CA 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
07-189-1	Pump Blank	09 JUL 96
PARAMETER	07-189-1	
cis-1,3-Dichloropropene, ug/L	<0.5	
m- and p-Xylene Isomers, ug/L	<1	
o-Xylene, ug/L	<0.5	
p-Isopropyl toluene, ug/L	<0.5	
sec-Butylbenzene, ug/L	<0.5	
trans-1,2-Dichloroethene, ug/L	<0.5	
trans-1,3-Dichloropropene, ug/L	<0.5	
tert-Butylbenzene, ug/L	<0.5	
Other E524.2/VOC (524.2)	---	
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	9.71	
1,2-Dichlorobenzene-d4 Theo, ug/L	10.0	
4-Bromofluorobenzene Rep., ug/L	10.2	
4-Bromofluorobenzene Theo., ug/L	10.0	

Greta Galoustian
Greta Galoustian, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

This report shall not be reproduced, except in full, without the written approval of BCA. No use of this report for promotional or advertising purposes is permitted without prior written BCA approval.

APPENDIX C
CHAIN-OF-CUSTODY DOCUMENTS

BCA Log Number

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum
WW—Wastewater

BCA Log Number

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.

*KEY: AG---Aqueous NA---Nonaqueous SL---Sludge
GW---Groundwater SO---Soil PE---Petroleum

ANALYTICAL
1085 Shary Circle, Concord, CA 94518 (510) 825-3994
301 Western Avenue, Glendale, CA 91201 (818) 247-5737
2200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

BCA Log Number

96011532

B C ANALYTICAL
☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737

CHAIN OF CUSTODY RECORD

BCA Log Number 27001111

Client name SEWR		Project or PO# Albera Sign	
Address 3437 Empress Dr. Ste A		Phone # 805-546-0455	
City, State, Zip San Luis Obispo, CA 93401		Report attention Greg Vogelbehl	
Lab sample number	Date sampled	Time sampled	Type* See key below
1	7-9-96	1200	AQ
2	7-9-96	1400	AQ
3	7-9-96	1615	AQ
4	7-9-96	1845	AQ
Sampled by Mark Hemming/Dave Fairbanks			
Sample description			
Number of containers			
9			
GW-1			
GW-2			
GW-3			
GW-9			

Relinquished by Bill Hemming	Signature Bill Hemming	Print Name Mark Hemming	Company SECOR	Date 7-9-96	Time 20:40
Received by E. T. Tolson	Signature E. T. Tolson	Print Name E. T. Tolson	Company BCA	Date 7/9/96	Time 20:40
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

IC ANALYTICAL
 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
 Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
 GW—Groundwater SO—Soil PE—Petroleum
 WW—Wastewater

96-67-215

BCA Log Number

[illegible]

C ANALYTICAL

1085 Shary Circle, Concord, CA 94518 (510) 825-3894

801 Western Avenue, Glendale, CA 91201 (818) 247-5737

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client's expense..

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum
WW—Wastewater

BCA Log Number 59607189

[illegible]

ANALYTICAL
2085 Shary Circle, Concord, CA 94518 (510) 825-3894

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum



January 10, 1997

AlliedSignal Inc.
Aerospace Equipment Systems
2525 W. 190th Street
Torrance, CA 90504-6099

310 323 9500
310 512 2221 Fax

Mr. Walter Salas
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Los Angeles, CA 91754-2156

RE: Requested Documents

Dear Mr. Salas:

Enclosed, please find four (4) copies of the below referenced document:

**RESULTS OF GROUNDWATER MONITORING
THIRD AND FOURTH QUARTERS 1995**

AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA

Volume I

Prepared by:

SECOR International Incorporated

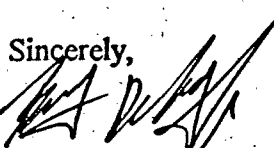
November 8, 1996

Job Number A0057-001-01/ASN42, ASN43

In addition, two (2) copies of Volume II (Books 1 & 2) and Volume III (Books 1,2 & 3) of the above referenced document are enclosed.

If you have any questions or comments, please call me at (310) 512-2296.

Sincerely,



Benny Deghi
Remediation Manager
Health, Safety & Environmental

(14) Enclosures

By Federal Express

cc: J. Das, RWQCB
H. Kang, RWQCB
E. Nupen, RWQCB

cc/enc. M. Blevins, ULARA, (Vol. 1 only)
B. Foose, Kaiser, (Vol. 1 only)

003027



AlliedSignal Inc.
Aerospace Equipment Systems
2525 W. 190th Street
Torrance, CA 90504-6099

310 323 9500
310 512 2221 Fax

July 29, 1996

Mr. Walter Salas
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Los Angeles, CA 91754-2156

RE: Requested Documents

Dear Mr. Salas:

Enclosed, please find four (4) copies of the below referenced document:

RESULTS OF GROUNDWATER MONITORING
FIRST AND SECOND QUARTERS 1995

AlliedSignal Inc.
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA

Volume I

Prepared by:

SECOR International Incorporated

July 22, 1996

Job Number A0057-001-01/ASN41

In addition, two (2) copies of Volume II (Books 1 & 2) and Volume III (Books 1 & 2) of the above referenced document are enclosed.

If you have any questions or comments, please call me at (310) 512-2296.

Sincerely,

Benny Dehghi
Remediation Manager
Health, Safety & Environmental

(12) Enclosures

By Federal Express

cc: M. Blevins, ULARA, (Vol. I)
J. Das, RWQCB
B. Foose, Kaiser, (Vol. I)
H. Kang, RWQCB
E. Nupen, RWQCB

003028

**RESULTS OF GROUNDWATER MONITORING
FIRST AND SECOND QUARTERS 1995**

**AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

VOLUME I

Prepared for:
AlliedSignal Aerospace
2525 West 190th Street
Torrance, California 90509

Prepared by:
SECOR International Incorporated
3437 Empresa Drive, Suite A
San Luis Obispo, California 93401

July 19, 1996
Job Number: A0057-001-01/ASN41

Prepared by:

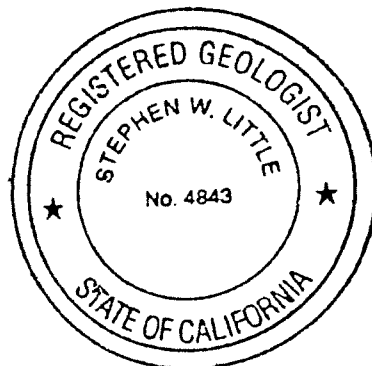
Bruce B. Cutting FOR

Kirk Henning
Project Scientist

Reviewed by:

Steve Little

Steve Little, R.G.
Principal Geologist



1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the first and second quarters of 1995 was conducted at the AlliedSignal Aerospace property in North Hollywood, California on March 6-10 and September 18-21, 1995, respectively, in accordance with the California Regional Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. In accordance with the RWQCB approved *Soil Gas Monitoring Summary* report prepared by Hydrologue, Inc., dated March 3, 1995, two on-site groundwater monitoring wells (GW-2 and GW-3) and four off-site (located on Kaiser Permanente Property) groundwater monitoring wells (GW-7 through GW-10) were sampled during the two groundwater monitoring events. Groundwater monitoring well GW-1, located on site, was not sampled during these monitoring episodes. This well was damaged during the remedial activities conducted as a part of on-site treatment of shallow soil impacted by Total Petroleum Hydrocarbons (TPH).

During the period between March 6 and September 18, 1995, groundwater levels increased between 9.55 feet (groundwater monitoring well GW-6) and 13.98 feet (groundwater monitoring well GW-9). Groundwater levels beneath the Site and the adjacent Kaiser property increased in groundwater monitoring wells GW-2, GW-3, GW-4, GW-6, GW-8 and GW-9 between 0.23 feet (groundwater monitoring well GW-4) and 3.45 feet (groundwater monitoring well GW-6) during the period between December 8, 1994 and March 6, 1995. The groundwater levels in groundwater monitoring wells GW-5, GW-7 and GW-10 decreased between 0.34 feet (GW-7) and 0.60 feet (GW-10) over the same period. Based on the groundwater level measurements obtained on January 17, 1995, the instantaneous groundwater flow direction was northeasterly beneath the western portion of the Site and the central portion of the Kaiser property, and north/northwesterly beneath the eastern portion of the Home Depot property. The groundwater level measurements collected on February 28, 1995 indicated that the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. Based on the groundwater level measurements obtained on March 6, 1995, the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. The instantaneous groundwater flow direction was southeasterly beneath the Site, the Kaiser property and the Home Depot property based on the September 18, 1995 measurements. Determination of an average groundwater flow direction based on the groundwater contours in a transient system such as the one present beneath the Site is questionable.

Consistent with regional data, nitrate was detected in the first quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 through GW-10 and from second

quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL). The compound Trichloroethene (TCE) was detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 and in the second quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-10 at concentrations above the DHS MCL. The compound Tetrachloroethene (PCE) was detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-3 and GW-9 and from the second quarter 1995 groundwater sample obtained from groundwater monitoring well GW-2 at concentrations above the DHS MCL. The Carbon Tetrachloride (CT) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-8 and GW-9; the cis-1,2-Dichloroethene (cis-1,2-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-3, GW-7 and GW-10; the 1,1-Dichloroethene (1,1-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7; and the 1,1-Dichloroethane (1,1-DCA) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 were all above their respective DHS MCLs during the March 1995 groundwater sampling event. CT concentrations detected in groundwater samples obtained from groundwater monitoring wells GW-3 and GW-7 were also above the DHS MCL during the second quarter 1995 groundwater sampling episode. All other Volatile Organic Compounds (VOCs) detected in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 during the first and second quarter 1995 sampling events were either non-detect or present at concentrations below their respective DHS MCLs.

During the last eight groundwater sampling events, concentrations of TCE in groundwater generally increased from November 1993 to February 1994, but subsequently decreased in several of the groundwater monitoring wells between February/March 1994 and May 1994. TCE concentrations again increased in groundwater samples collected from all the groundwater monitoring wells between May 1994 and August/September 1994 and then decreased in groundwater samples collected from the groundwater monitoring wells between August/September 1994 and November/December 1994. TCE concentrations increased in groundwater samples obtained from all the groundwater monitoring wells between November/December 1994 and March 1995 and then decreased between March and September 1995. For example, the TCE concentrations detected in groundwater samples collected from groundwater monitoring wells GW-1, GW-2, and GW-7 through GW-10 increased between one and two orders of magnitude from the November 1993 groundwater sampling event to the February 1994 groundwater sampling event, whereas the TCE concentrations in groundwater samples collected from groundwater monitoring well GW-3 remained consistent during this period. However, the TCE concentrations detected in groundwater samples from all six groundwater monitoring wells decreased as much as two orders of magnitude from the February/March 1994 sampling episode to the May 1994 sampling event. The concentrations of TCE detected in groundwater samples obtained from

all six groundwater monitoring wells increased as much as three orders of magnitude from the May 1994 sampling event to the August/September 1994 sampling episodes. In addition, the concentrations of TCE detected in groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-8 through GW-10 decreased up to two orders of magnitude from the August/September 1994 sampling events to the November/December 1994 sampling episodes, whereas the TCE concentration in groundwater samples collected from groundwater monitoring well GW-7 increased one order of magnitude during the same period. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 increased up to two orders of magnitude from the November/December 1994 sampling episodes to the March 1995 sampling event, whereas the TCE concentration in groundwater samples collected from groundwater monitoring well GW-5 decreased slightly over the same period. Finally, the concentrations of TCE detected in groundwater samples obtained from all six groundwater monitoring wells decreased up to two orders of magnitude from the March 1995 sampling event to the September 1995 sampling episodes. An off-site source together with groundwater extraction from production wells in the North Hollywood and Rinaldi-Toluca well fields may account for the fluctuation in TCE concentrations detected in groundwater samples collected from the groundwater monitoring wells at the Site.

hydrologue, Inc.

Consulting Engineers & Geologists

email: hydrologue@worldnet.att.net

Remediation Engineering

Hazardous Substances

Geology and Hydrogeology

Geotechnical Engineering

March 13, 1997

Mr. Barry A. Foose
Kaiser Regional Laboratories
Health and Environmental Safety Officer
11668 Sherman Way
North Hollywood CA 91605

Dear Mr. Foose:

Thank you for taking the time to speak with Carmen Suarez, a member of our Business Development team, and allowing her to introduce hydrologue, Inc. to you. I would like to take this opportunity to further introduce you to the environmental and geotechnical contracting and consulting services that we offer.

As an indication of the quality of work we perform, I am enclosing a copy of an award presented to us by AlliedSignal Aerospace, in recognition and appreciation of our outstanding performance and commitment during a Superfund project we completed for them.

hydrologue is a multi-disciplinary professional firm that provides extensive environmental, geotechnical, and laboratory services. All technical work is completed under the supervision of registered and certified professionals. We feel that our technical expertise, cost-effective project management, use of cutting-edge technologies, and the personal level of attention that we provide to our clients are some of our most valuable assets.

hydrologue has extensive experience in working with major industrial companies such as AlliedSignal and GTE, for a number of sites in which soil and groundwater were impacted by chlorinated hydrocarbons (i.e., PCE, TCE, 1,1,1-TCA, 1,1-DCE, etc.), and fuel petroleum hydrocarbons (i.e., gasoline, diesel, jet fuel, and motor, hydraulic, and cutting oils). hydrologue has worked on a significant number of state-of-the-art environmental investigations for industrial sites in which soil and groundwater were impacted by former manufacturing activities. hydrologue has successfully obtained closure from lead regulatory agencies in the Los Angeles Basin, resulting in considerable savings in remediation costs to our clients.

Our environmental work has covered all the facets of environmental services such as:

- Phase I and Phase II Environmental Investigations
- Aquifer Characterization
- Soil and Groundwater Cleanup
- Establishing of Baseline for Real Estate Transactions
- Environmental Compliance
- Groundwater and Vadose Zone Modeling
- Environmental Litigation Support Services

Barry Foose

Page 2 of 2

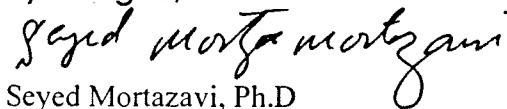
Our technical staff includes five Ph.D.s, four Registered Geologists and Certified Hydrogeologists, two Registered Civil Engineers, and two computer modelers. Cumulatively, our registered professionals have more than 100 years of total experience with extensive backgrounds in environmental assessment and remediation; seldom can such a concentration of experts be found in one office of any environmental consulting company.

hydrologue has provided services associated with real property transactions up to \$20 million in value. Our client list includes Fortune 500TM companies such as AlliedSignal, GTE, Prudential, and Fidelity Federal. We have successfully met stringent deadlines imposed by sellers/buyers in order to clean up sites for transaction. Specifically, hydrologue obtained an unprecedented closure for one Superfund site from a state regulatory agency while the client was still in litigation with the U.S. EPA, resulting in a successful and timely completion of transaction.

Per your suggestion, I have enclosed some brochures with more details about hydrologue's services, and our schedule of fees, for your review. I would appreciate if you also forward this information to the company's attorneys in Oakland for consideration for future work.

We will call you soon to follow up, should you have any questions. Please do not hesitate to contact Carmen or me at (818) 585-9696. I look forward to meeting with you in the near future.

Sincerely,
hydrologue, Inc.



Seyed Mortazavi, Ph.D
Principal

\\Triton\projects\MARKET\Mktg Corresp\Retail & Consumer\Kaiser-Foose.doc

hydrologue, Inc.

003034

LABORATORY TESTS

Non-Contaminated Soils

Moisture-Density Relations of Soils, ASTM D 1557, Method A	\$ 110.00 each	Direct Shear Test, ASTM D 3080:	
Moisture-Density Relations of Soils, ASTM D 1557, Method B, C	\$ 120.00 each	Consolidated, Drained, 1 Point	\$ 80.00 each
Moisture-Density Check Point	\$ 25.00 each	Consolidated, Undrained, 1 Point	\$ 60.00 each
California Impact, CAL 216	\$ 150.00 each	Unconsolidated, Undrained, 1 Point	\$ 30.00 each
"R" (Resistance) Value, Lime Treated or Requiring Recombining	\$ 250.00 each		
"R" (Resistance) Value, Calif. 301, ASTM D 2844	\$ 195.00 each	Unconfined Compression Test, ASTM D 2166	\$ 60.00 each
California Bearing Ratio, ASTM D 1883	\$ 400.00 each	Permeability, Falling Head, ASTM D 5084, CAL 220	\$ 225.00 each
Chunk Density	\$ 40.00 each	Sieve and Hydrometer Analysis, ASTM D 422	\$ 100.00 each
Moisture and Density ASTM 2216, D 4643	\$ 25.00 each	Sieve Analysis, Fine or Coarse, ASTM C 136	\$ 60.00 each
Moisture Test, ASTM D 2216, D4643	\$ 15.00 each	Material Finer - #200 Sieve, ASTM D 1140/C 117	\$ 30.00 each
Relative Density (max/min) D 4254	\$ 300.00 each	Atterberg Limits, ASTM D 4318	\$ 80.00 each
Consolidation Test, ASTM D 2435	\$ 200.00 each	Expansion Index, UBC-29-2, ASTM D 4829	\$ 100.00 each
Consolidation Time/Rate Curves, 1 Point	\$ 30.00 each	Specific Gravity for Soils, ASTM D 854	\$ 50.00 each
Collapse Potential	\$ 100.00 each	Sulfate Content	\$ 30.00 each
Permeability, Constant Head, ASTM D 2434, CAL 220	\$ 175.00 each	Porosity Test	\$ 20.00 each
Field Hydraulic Conductivity testing	by quotation	VES Column Testing	by quotation

Contaminated Soil Testing

Most geotechnical laboratories do not conduct testing on contaminated soil samples. However, Hydrologue uses OSHA trained staff to handle your contaminated soil testing needs. Upon completion of testing, the contaminated soil samples will be returned to the client for disposal or will be disposed of by Hydrologue with a disposal cost which includes a 15% surcharge. All hazardous waste samples will be returned to the client.

All tests performed on non-hazardous contaminated soils will be in accordance with the above schedule with an additional 30% surcharge. All tests performed on hazardous materials will be charged using the above schedule with an additional 75% surcharge.



Presents This Award to

SEYED M. MORTAZAVI, PH.D

hydrologue, Inc.

**In Grateful Appreciation for
Outstanding
Performance and Commitment**

during the

**North Hollywood Site
Environmental Remediation
and Closure**

**RESULTS OF GROUNDWATER MONITORING
THIRD AND FOURTH QUARTERS 1995
AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

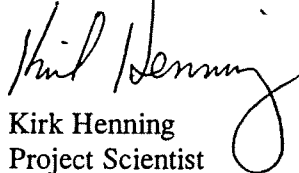
VOLUME I

Prepared for:
AlliedSignal Aerospace
2525 West 190th Street
Torrance, California 90509


Prepared by:
SECOR International Incorporated
3437 Empresa Drive, Suite A
San Luis Obispo, California 93401

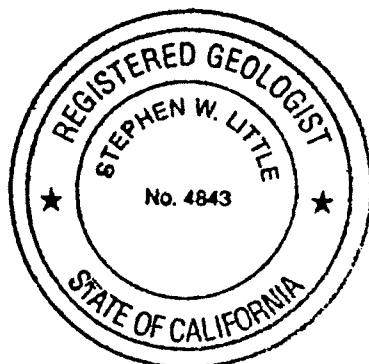
November 8, 1996
Job Number: A0057-001-01/ASN42, ASN43

Prepared by:


Kirk Henning
Project Scientist

Reviewed by:


Steve Little, R.G.
Principal Geologist



**RESULTS OF GROUNDWATER MONITORING
THIRD AND FOURTH QUARTERS 1995**

**AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

November 7, 1996

Job Number: A0057-001-01/ASN42, ASN43

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1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the third and fourth quarters of 1995 was conducted at the AlliedSignal Aerospace property at 11600 Sherman Way in North Hollywood, California on November 19-22 and December 18-20, 1995, respectively. The groundwater monitoring was conducted in accordance with the California Regional Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. Three on-site groundwater monitoring wells (GW-1 through GW-3) and four off-site groundwater monitoring wells (GW-7 through GW-10) were sampled during the two monitoring events.

During the period between September 18 and November 19, 1995, groundwater levels increased between 5.23 feet (well GW-9) and 6.17 feet (well GW-5). The instantaneous groundwater flow direction beneath the Site, the Kaiser Permanente property and the Home Depot property was southeasterly, based on the November 19, 1995 measurements. During the period between November 19 and December 18, 1995, groundwater levels decreased between 0.50 feet (well GW-6) and 2.81 feet (well GW-9). The instantaneous groundwater flow direction beneath the Site and the Kaiser Permanente property was southwesterly, based on the December 18, 1995 measurements. Beneath the Home Depot property, the instantaneous groundwater flow direction was south/southeasterly based on the December 18, 1995 measurements.

Consistent with regional data, nitrate was detected in the third quarter 1995 groundwater samples collected from groundwater monitoring wells GW-7 and GW-9 and in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2 and GW-9 at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL). Trichloroethene (TCE) was detected in the third quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-1, GW-3 and GW-7 through GW-10 and in the fourth quarter 1995 groundwater samples collected from all seven groundwater monitoring wells at concentrations above the MCL. Tetrachloroethene (PCE) was detected in the third quarter 1995 groundwater sample obtained from groundwater monitoring well GW-8 and in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-7 through GW-10 at concentrations above the MCL. The compounds 1,1,2-trichloroethane (1,1,2-TCA), benzene (for the first time) and 1,2-dichloroethane (1,2-DCA) were detected in the fourth quarter 1995 groundwater samples collected from groundwater monitoring well GW-10 at concentrations above their respective MCLs. The compounds 1,1-dichloroethane (1,1-DCA) and cis-1,2-dichloroethene (cis-1,2-DCE) were detected in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 at concentrations above their respective MCLs. The compound 1,1-dichloroethene (1,1-DCE) was detected in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3, GW-7 and GW-10 at concentrations above the MCL. Carbon tetrachloride (CT) was detected in the third quarter 1995 groundwater samples collected from groundwater monitoring wells GW-7 and GW-8, and in the fourth quarter 1995 samples collected from groundwater

monitoring wells GW-2, GW-3, and GW-7 through GW-10 at concentrations above the MCL. All other Volatile Organic Compounds (VOCs) detected in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 during the third and fourth quarter 1995 sampling events were present at concentrations below their respective MCLs.

During the last ten sampling events, concentrations of TCE in groundwater generally increased from November 1993 to February 1994, but subsequently decreased in several of the groundwater monitoring wells between February/March 1994 and May 1994. TCE concentrations again increased in all the groundwater monitoring wells (GW-1 through GW-3 and GW-7 through GW-10) between May 1994 and August/September 1994 and then decreased in the wells between August/September 1994 and November/December 1994. TCE concentrations increased in groundwater samples from all the groundwater monitoring wells between November/December 1994 and March 1995 and then decreased between March and September 1995. For example, the TCE concentrations detected in groundwater samples from groundwater monitoring wells GW-1, GW-2, and GW-7 through GW-10 increased between one and two orders of magnitude from the November 1993 to the February 1994 sampling episode, whereas the TCE concentrations in samples from groundwater monitoring well GW-3 remained consistent during this period. However, the TCE concentrations detected in groundwater samples from all seven groundwater monitoring wells decreased as much as two orders of magnitude from the February/March 1994 sampling episode to the May 1994 sampling event. The concentrations of TCE detected in groundwater samples from all seven groundwater monitoring wells increased as much as three orders of magnitude from the May 1994 monitoring event to the August/September 1994 sampling episode. The concentrations of TCE detected in groundwater samples from groundwater monitoring wells GW-2, GW-3 and GW-8 through GW-10 decreased as much as two orders of magnitude from the August/September 1994 monitoring event to the November/December 1994 sampling episode, whereas the TCE concentration in groundwater samples from monitoring well GW-7 increased one order of magnitude during the same period.

The concentrations of TCE detected in groundwater samples from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 increased to two orders of magnitude from the November/December 1994 monitoring episode to the March 1995 sampling event. The concentrations of TCE detected in groundwater samples from monitoring wells GW-2, GW-3 and GW-7 through GW-10 decreased as much as two orders of magnitude from the March 1995 to the September 1995 monitoring episodes.

The concentrations of TCE decreased in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 and increased in groundwater samples collected from groundwater monitoring wells GW-8 through GW-10 from September 1995 to November 1995. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring well GW-1 decreased from 6,400 $\mu\text{g}/\text{l}$ in November 1994 to 7.0 $\mu\text{g}/\text{l}$ in November 1995. The concentrations of TCE detected in groundwater samples collected from all seven groundwater monitoring wells increased up to two orders of magnitude from November 1995 to December 1995. For example, the concentration of TCE detected in groundwater samples collected from groundwater monitoring wells GW-7 and GW-

10 increased from 27 $\mu\text{g}/\ell$ and 30 $\mu\text{g}/\ell$, respectively, during November 1995 sampling event to 2,400 $\mu\text{g}/\ell$ and 3,200 $\mu\text{g}/\ell$ during the December 1995 sampling event. Pumping of the production wells in the North Hollywood and the Rinaldi-Toluca well fields, and municipal aeration wells together with an off-site source may account for the fluctuation in TCE concentrations detected in groundwater samples collected from the groundwater monitoring wells at the Site.

2.0 INTRODUCTION

On behalf of AlliedSignal Aerospace, *SECOR* International Incorporated (*SECOR*) has prepared this report presenting the results of groundwater monitoring conducted by *SECOR* in November and December 1995 at the AlliedSignal Aerospace property located at 11600 Sherman Way in North Hollywood, California (see Figure 1). Groundwater monitoring and sampling of groundwater monitoring wells GW-1 through GW-3 at the Site and groundwater monitoring wells GW-7 through GW-10 at the adjacent Kaiser Permanente property (see Figure 2) was conducted in accordance with the RWQCB WIP guidelines.

Groundwater monitoring activities commenced at the Site with the installation of a two-level groundwater monitoring well, W-1, in 1987. After two monitoring events were conducted, well W-1 was abandoned at the request of the RWQCB. Well W-1 was formerly located near the southwestern corner of the AlliedSignal property and was abandoned by *SECOR* in June 1993 in accordance with a workplan approved by the RWQCB. Volatile Organic Compound (VOC) analytical results obtained from groundwater monitoring well W-1 in May and June 1987 are presented in Table 14.

Quarterly groundwater monitoring at the Site has been conducted regularly since the third quarter of 1991. Historical groundwater elevations and analytical results from the most recent and previous groundwater monitoring events are presented in Tables 6 through 21 and Figures 7 through 49.

3.0 GROUNDWATER LEVEL MEASUREMENTS

During the third and fourth quarters of 1995, depth to groundwater was measured in three on-site groundwater monitoring wells (GW-1 through GW-3) and seven off-site groundwater monitoring wells (GW-4 through GW-10) on November 19 and December 18, 1995, respectively. An Environmental Instruments Company (EI) water level meter was used to measure the depth to groundwater in the wells according to the protocol described in Appendix A. Water level data obtained on November 19 and December 18, 1995 are summarized in Table 1.

The data indicate that groundwater levels increased in groundwater monitoring wells GW-2 through GW-10 between 5.23 feet (well GW-9) and 6.17 feet (well GW-5) from September 18, 1995 to November 19, 1995. Between December 8, 1994 and November 19, 1995, the groundwater level increased 18.28 feet in groundwater monitoring well GW-1. Between November 19 and December 18, 1995, groundwater levels decreased in all ten groundwater monitoring wells between 0.50 feet (well GW-6) and 2.81 feet (well GW-9). Historic groundwater elevations are presented in Table 6.

Based on water level measurements obtained on November 19, 1995, the instantaneous groundwater flow direction was southeasterly at a gradient of 0.0020 beneath the Site and the Kaiser Permanente property, and southeasterly at a gradient of 0.0034 beneath the Home Depot property. Based on water level measurements obtained on December 18, 1995, the instantaneous groundwater flow direction was southwesterly at a gradient of 0.0022 beneath the Site and the Kaiser Permanente property, and south/southeasterly at a gradient of 0.0045 beneath the Home Depot property. Figures 3 and 4 present the groundwater elevation contour maps based on the November 19 and December 18, 1995 groundwater surface elevations.

The groundwater flow direction beneath, and in the vicinity of the Site, appears to be strongly influenced by groundwater extraction from aeration wells and from supply wells in the North Hollywood and Rinaldi-Toluca well fields located south and northwest of the Site, respectively (Remedial Investigation Report for Groundwater Contamination in the San Fernando Valley - Volume 1, James M. Montgomery, December 1992). Although groundwater elevation contour maps have been prepared based on groundwater elevations measured at the Site, the calculated groundwater flow direction(s) are not representative of instantaneous groundwater flow direction, due to the influence of regional pumping. Under transient conditions, groundwater pathlines and streamlines are not coincidental.

4.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 were purged with a submersible electric pump and sampled with disposable polypropylene bailers on November 19-22 and December 18-20, 1995 according to the protocol described in Appendix A.

All groundwater analyses were conducted by BC Analytical (BCA) in Glendale, California. For Quality Assurance/Quality Control (QA/QC) purposes, field blank, equipment blank and trip blank samples for each sampling event were collected on November 21 and December 18, 1995. The groundwater samples obtained from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 on November 19-22 and December 18-20, 1995 were delivered to BCA in Glendale and analyzed for the following:

- Method 524.2 - Volatile Organics Compounds;
- Method 8015M - Total Petroleum Hydrocarbons, as Diesel or Gasoline;
- Method 300.0-L - Sulfates, Chlorides;
- Method 310.1-L - Alkalinity - total, hydroxyl, carbonate, and bicarbonate;
- Method 6010-L - Calcium, Magnesium, Potassium, Sodium;
- Method 160.1 and 180.1 - Total Dissolved Solids and Turbidity; and
- Method 300.0-N - Nitrate

All samples were immediately placed on ice following collection. Individual samples were collected in pre-cleaned, analysis-specific containers supplied by the laboratory with the appropriate preservative and clearly marked and dated for identification. Samples were securely packed and delivered to the laboratory within 24 hours of collection via courier. All samples were preserved and stored for analysis no longer than the maximum allowable holding time. The following table presents the appropriate sample containers, holding time, container size and preservative for each analytical method used in this project.

TABLE 4.1 - SAMPLING GUIDE			
ANALYSIS	HOLDING TIME	CONTAINER SIZE	PRESERVATIVE
Volatile Organics Compounds EPA Test Method 524.2	14 days	2-40 ml (glass) with septum	Cool, HCL No headspace
Total Petroleum Hydrocarbons EPA Test Method 8015M	14 days	4 oz (amber glass) with septum	Cool, HCL No headspace
Sulfates & Chlorides EPA Test Method 300.0 L	28 days	4 oz (plastic)	Cool
Alkalinity (total, hydroxyl, carbonate, bicarbonate) EPA Test Method 310.1 L	14 Days	4 oz (plastic)	Cool
Calcium, Magnesium, Potassium, Sodium EPA Test Method 6010 L	6 months	16 oz (plastic)	Cool, HNO ₃
Total Dissolved Solids EPA Test Method 160.1	7 days	16 oz (plastic)	Cool
Turbidity EPA Test Method 180.1	2 days	4 oz (plastic)	Cool
Nitrate EPA Test Method 300.0 N	48 hours	4 oz (plastic)	Cool

Note: oz - ounce
 ml - milliliter
 HCL - Hydrochloric Acid
 HNO₃ - Nitric Acid

Laboratory reports and chain-of-custody documents for both groundwater monitoring events are presented in Appendices B and C, respectively.

5.0 DATA QUALITY ASSURANCE/QUALITY CONTROL

BCA performed all the laboratory analyses for the third and fourth quarters of 1995. BCA followed the details of the data reporting process outlined in the Laboratory Requirements for Data Validation (EPA Document Control Number 9QA-07-90) and the RWQCB Quality Assurance/Quality Control Guidance Document for Well Investigation Program - San Gabriel and San Fernando Basins.

Field blank, equipment blank and trip blank samples were analyzed along with the groundwater samples collected on November 19-22 and December 18-20, 1995. The field blank and equipment blank samples were used to demonstrate that ambient conditions, the sample bottle and the sampling procedures were not contaminating the sample. For the field blanks, laboratory-grade water supplied by BCA was decanted into sample bottles adjacent to the well being sampled. For the bailer equipment blanks, laboratory-grade water was transported to one of the groundwater monitoring wells and a sample of the laboratory-grade water was prepared using a bailer. During the fourth quarter 1995, an equipment blank was also prepared using the pump. For the pump equipment blank, distilled water supplied by a water distributor was passed through the pump and hose after decontamination, and then collected in sample bottles. Trip blanks, supplied by BCA, were used to provide a measure of the positive interferences introduced by the sample preservation, transportation, storage, and analysis. Case summaries describing the data quality assurance/quality control (QA/QC) are presented in Volume II, Appendix B for the third quarter 1995, and Volume III, Appendix B for the fourth quarter 1995.

No VOCs were detected in the field blank, the equipment blank or the trip blank samples collected on November 21, 1995. No VOCs were detected in the field blank or trip blank samples collected on December 18, 1995. The compound toluene was detected at a concentration of 0.23 micrograms per liter ($\mu\text{g}/\ell$) in the fourth quarter 1995 equipment blank sample collected from the bailer. The compounds 1,1,1-TCA, 1,1-DCE, Chloroform, PCE, cis-1,2-DCE and p-Isopropyl Toluene were detected at concentrations of 0.38 $\mu\text{g}/\ell$, 0.34 $\mu\text{g}/\ell$, 0.65 $\mu\text{g}/\ell$, 1.8 $\mu\text{g}/\ell$, 0.84 $\mu\text{g}/\ell$ and 0.97 $\mu\text{g}/\ell$, respectively, in the equipment blank collected from the pump.

6.0 GROUNDWATER ANALYTICAL RESULTS

6.1 INORGANIC COMPOUNDS

Chloride, sulfate, alkalinity, calcium, magnesium, potassium, sodium, TDS, turbidity and nitrate were detected in groundwater samples collected from all seven groundwater monitoring wells (GW-1 through GW-3 and GW-7 through GW-10) sampled during the third and fourth quarter 1995 monitoring events. The following table presents the low and high concentration of each inorganic constituent detected in the third and fourth quarter 1995 groundwater samples and the corresponding groundwater monitoring well in which these values were measured:

TABLE 6.1 - INORGANIC COMPOUNDS DETECTED (all results in milligrams per liter, except turbidity)				
Constituent	Third Quarter Low	Third Quarter High	Fourth Quarter Low	Fourth Quarter High
Chloride	19 (GW-3)	31 (GW-7)	17 (GW-1)	26 (GW-9)
Sulfate	32 (GW-3)	60 (GW-9)	34 (GW-1)	60 (GW-10)
Total Alkalinity	150 (GW-3)	260 (GW-8)	140 (GW-1)	410 (GW-10)
Calcium	61 (GW-3)	96 (GW-7)	50 (GW-1)	120 (GW-10)
Magnesium	13 (GW-3)	21 (GW-7)	11 (GW-1)	25 (GW-10)
Potassium	3.6 (GW-7)	5.7 (GW-3)	3.1 (GW-7)	8.0 (GW-1)
Sodium	9.7 (GW-3)	26 (GW-8, GW-9, GW-10)	17 (GW1, GW2)	27 (GW-9)
TDS	300 (GW-3)	480 (GW-8)	280 (GW-1)	620 (GW-10)
Turbidity*	1.4 (GW-10)	15 (GW-2)	3.3 (GW-9)	84 (GW-8)
Nitrate	34 (GW-3, GW- 10)	58 (GW-7)	27 (GW-1)	100 (GW-9)

*: Turbidity measured in Nephelometric Turbidity Units.

During the third and fourth quarters 1995, sodium was detected in samples from all seven groundwater monitoring wells at concentrations above the EPA Suggested No-Adverse-Response Level (SNARL) of 2 mg/l. SNARLs are human health-related criteria that are published by the National Academy of

Sciences. The turbidity levels detected in the third quarter 1995 groundwater samples collected from groundwater monitoring wells GW-1 through GW-3 and the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-1 through GW-3, GW-7, GW-8, and GW-10 were above the DHS Secondary MCL of 5 Nephelometric Turbidity Units (NTU). Primary MCLs include a potential of health risk, whereas, secondary MCLs are derived from human welfare considerations (usually taste and odor) and do not include a consideration of health risk. The concentrations of nitrate detected in the third quarter 1995 groundwater samples collected from groundwater monitoring wells GW-7 and GW-9 and the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2 and GW-9 were above the MCL of 45 mg/l.

Inorganic compound analytical results for the third and fourth quarter 1995 monitoring events are presented in Table 2. Historic inorganic compound analytical results are presented in Tables 7 through 13. Please note that nitrate values reported prior to January 1993 were quantified as nitrate as N, whereas recent data are reported as nitrate as NO₃ in accordance with the Sampling and Analysis Plan approved by the RWQCB. Nitrate concentrations detected during the third and fourth quarter 1995 monitoring events are shown on Figure 5 and Figure 6, respectively.

6.2 VOLATILE ORGANIC COMPOUNDS

6.2.1 Groundwater Sample Results (November 19-22, 1995)

TCE was detected at concentrations ranging from 4.8 µg/l (well GW-2) to 170 µg/l (well GW-8) in the groundwater samples collected from all seven groundwater monitoring wells (GW-1 through GW-3 and GW-7 through GW-10) during the third quarter 1995 sampling event. The highest concentration of TCE was detected in the groundwater sample obtained from groundwater monitoring well GW-8, located within the northern portion of the Kaiser Permanente property. The concentrations of TCE detected in groundwater samples from groundwater monitoring wells GW-1, GW-3 and GW-7 through GW-10 were above the MCL of 5 µg/l.

PCE was detected at concentrations ranging from 0.53 µg/l (well GW-7) to 5.0 µg/l (well GW-8) in the groundwater samples obtained from the seven groundwater monitoring wells during the third quarter 1995. The concentrations of PCE detected in the groundwater sample obtained from groundwater monitoring well GW-8 was above the MCL of 5 µg/l.

The compound 1,1,1-trichloroethane (1,1,1-TCA) was detected at concentrations of 0.36 µg/l and 0.34 µg/l in the third quarter 1995 groundwater samples obtained from monitoring wells GW-3 and GW-7, respectively. 1,1,1-TCA was not detected above a detection limit of 0.2 µg/l in the groundwater samples collected from the other five groundwater monitoring wells during that quarter.

The compound 1,1-DCA was detected at concentrations ranging from 0.20 µg/l (well GW-1) to 0.64 µg/l (well GW-3) in the third quarter 1995 groundwater samples collected from groundwater

monitoring wells GW-1, GW-2, GW-3, GW-7 and GW-8. 1,1-DCA was not detected in the other two groundwater samples, above a detection limit of 0.2 µg/l. None of the concentrations of 1,1-DCA detected in the groundwater samples were above the MCL of 5 µg/l.

Although the compound 1,1-DCE was detected at concentrations from 0.48 µg/l (well GW-7) to 2.2 µg/l (well GW-8) in the third quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-3, GW-7 and GW-8, none were above the MCL of 6 µg/l. 1,1-DCE was not detected in the other four groundwater samples above the detection limit of 0.2 µg/l.

Carbon tetrachloride (CT) was detected at concentrations ranging from 0.49 µg/l (well GW-3) to 2.4 µg/l (well GW-8) in the third quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3, GW-7 and GW-8. CT was not detected above a detection limit of 0.2 µg/l in the other four groundwater monitoring wells. The concentrations of CT detected in the samples from groundwater monitoring wells GW-7 and GW-8 were above the MCL of 0.5 µg/l.

Chloroform was detected at concentrations from 0.32 µg/l (well GW-10) to 1.3 µg/l (well GW-8) in the third quarter 1995 groundwater samples obtained from the seven groundwater monitoring wells. None of the concentrations of chloroform detected in the third quarter groundwater samples were above the MCL of 100 µg/l for total trihalomethanes (THMs).

The compound cis-1,2-DCE was detected at concentrations from 0.54 µg/l (well GW-9) to 2.7 µg/l (well GW-2) in groundwater samples collected during the third quarter 1995 groundwater sampling event. No detections of cis-1,2-DCE were above the MCL of 6.0 µg/l.

Dichlorodifluoromethane was detected at concentrations from 0.56 µg/l (well GW-7) to 1.6 µg/l (well GW-2) in the third quarter 1995 groundwater samples obtained from the groundwater monitoring wells.

The compound p-isopropyl toluene was detected at concentrations of 0.31 µg/l and 0.40 µg/l in the third quarter 1995 groundwater samples collected from groundwater monitoring wells GW-1 and GW-3, respectively. P-isopropyl toluene was not detected in the groundwater samples from the other five groundwater monitoring wells above the detection limit of 0.2 µg/l.

No other VOCs were detected in the seven groundwater monitoring wells above their respective detection limits during the third quarter 1995 sampling events.

No VOCs were detected in the field, equipment and trip blank samples above their respective detection limits during the third quarter 1995.

VOC analytical results for the groundwater samples collected from the groundwater monitoring wells during the third quarter 1995 are presented in Table 5 and Figure 5. VOC analytical results for the

first and second quarters of 1995 are provided for reference in Table 3 and Table 4. Historical VOC analytical results are presented in Tables 14 through 21. Historical groundwater surface elevations, nitrate and VOC concentrations for the seven groundwater monitoring wells (GW-1 through GW-3 and GW-7 through GW-10) are presented in Figures 5 through Figure 49.

6.2.2 Groundwater Sample Results (December 18-20, 1995)

TCE was detected at concentrations ranging from 25 $\mu\text{g}/\ell$ (well GW-1) to 3,200 $\mu\text{g}/\ell$ (well GW-10) in samples collected during the fourth quarter 1995 from the groundwater monitoring wells. The concentrations of TCE detected in the groundwater samples were above the MCL of 5 $\mu\text{g}/\ell$.

PCE was detected at concentrations ranging from 1.8 $\mu\text{g}/\ell$ (well GW-2) to 44 $\mu\text{g}/\ell$ (well GW-10) in the fourth quarter 1995 groundwater samples collected from the seven groundwater monitoring wells. The concentrations of PCE detected in the groundwater samples obtained from groundwater monitoring wells GW-7 through GW-10 were above the MCL.

The compound 1,1,1-TCA was detected at concentrations ranging from 1.2 $\mu\text{g}/\ell$ (well GW-1) to 48 $\mu\text{g}/\ell$ (well GW-10) in groundwater samples collected during the fourth quarter 1995 groundwater monitoring event. None of the concentrations of 1,1,1-TCA detected during the fourth quarter 1995 sampling event were above the MCL of 200 $\mu\text{g}/\ell$.

The compound 1,1-DCA was detected in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-1 through GW-3, GW-7, GW-8, and GW-10 at concentrations ranging from 0.22 $\mu\text{g}/\ell$ (well GW-8) to 14 $\mu\text{g}/\ell$ (well GW-7). The concentrations of 1,1-DCA detected in the groundwater samples from groundwater monitoring wells GW-7 and GW-10 were above the MCL of 5 $\mu\text{g}/\ell$.

During the fourth quarter 1995, 1,1-DCE was detected at concentrations ranging from 2.0 $\mu\text{g}/\ell$ (well GW-1) to 35 $\mu\text{g}/\ell$ (well GW-10) in groundwater samples collected from the groundwater monitoring wells. The compound 1,1-DCE was detected at concentrations above the MCL in the groundwater samples collected from groundwater monitoring wells GW-3, GW-7, and GW-10 only.

Carbon Tetrachloride (CT) was detected in the fourth quarter 1995 groundwater samples from the seven groundwater monitoring wells at concentrations ranging from 0.32 $\mu\text{g}/\ell$ (well GW-1) to 5.3 $\mu\text{g}/\ell$ (well GW-10). The concentrations of CT detected in the groundwater samples from groundwater monitoring wells GW-2, GW-3, and GW-7 through GW-10 were above the MCL of 0.5 $\mu\text{g}/\ell$.

Chloroform was detected at concentrations from 0.72 $\mu\text{g}/\ell$ (well GW-1) to 90 $\mu\text{g}/\ell$ (well GW-10) in the fourth quarter 1995 groundwater samples obtained from the groundwater monitoring wells. None of the chloroform detected in the samples collected during the fourth quarter groundwater monitoring event were above the MCL of 100 $\mu\text{g}/\ell$ for total trihalomethanes.

The compound cis-1,2-DCE was detected in the fourth quarter 1995 groundwater samples collected from the groundwater monitoring wells at concentrations from 0.95 $\mu\text{g}/\ell$ (GW-9) to 45 $\mu\text{g}/\ell$ (GW-7). The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-7 and GW-10 were above the MCL of 6.0 $\mu\text{g}/\ell$.

Dichlorodifluoromethane was detected at concentrations ranging from 0.44 $\mu\text{g}/\ell$ (well GW-7) to 2.3 $\mu\text{g}/\ell$ (well GW-9) in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-9. Dichlorodifluoromethane was not detected in the groundwater sample obtained from groundwater monitoring well GW-10. The detection limit for dichlorodifluoromethane was 0.5 $\mu\text{g}/\ell$.

During the fourth quarter 1995, p-isopropyl toluene was detected in the groundwater samples collected from groundwater monitoring wells GW-1, GW-3, and GW-7 at concentrations of 0.29 $\mu\text{g}/\ell$, 0.44 $\mu\text{g}/\ell$, and 0.20 $\mu\text{g}/\ell$, respectively. P-isopropyl toluene was not detected in the other four groundwater monitoring wells during this quarter.

The compound 1,1,2-TCA was detected at concentrations of 0.53 $\mu\text{g}/\ell$ and 5.3 $\mu\text{g}/\ell$ in the groundwater samples collected during the fourth quarter 1995 from groundwater monitoring wells GW-7 and GW-10, respectively. The concentration of 1,1,2-TCA detected in the groundwater sample collected from groundwater monitoring well GW-10 was above the MCL of 5.0 $\mu\text{g}/\ell$.

The compound 1,2-DCA was detected in the fourth quarter 1995 groundwater sample collected from groundwater monitoring well GW-10 at a concentration of 2.0 $\mu\text{g}/\ell$. This concentration of 1,2-DCA was above the MCL of 0.5 $\mu\text{g}/\ell$.

Benzene was detected for the first time in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-1, GW-7, and GW-10, at concentrations of 0.19 $\mu\text{g}/\ell$, 0.59 $\mu\text{g}/\ell$, and 2.7 $\mu\text{g}/\ell$, respectively. The concentration of benzene detected in the groundwater sample collected from groundwater monitoring well GW-10 was above the MCL of 1.0 $\mu\text{g}/\ell$.

The compound trans-1,2-DCE was detected in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 at concentrations of 0.39 $\mu\text{g}/\ell$ and 1.1 $\mu\text{g}/\ell$, respectively. None of the concentrations of trans-1,2-DCE detected were above the MCL of 10 $\mu\text{g}/\ell$.

Bromodichloromethane was detected at a concentration of 0.25 $\mu\text{g}/\ell$ in the groundwater sample collected from groundwater monitoring well GW-3. Bromodichloromethane was not detected in the remaining six groundwater monitoring wells. The concentration of bromodichloromethane detected was below the MCL 100 $\mu\text{g}/\ell$.

No other VOCs were detected in the seven groundwater monitoring wells above their respective detection limits during the fourth quarter 1995 sampling event.

During the fourth quarter 1995, toluene was detected at a concentration of 0.23 $\mu\text{g}/\ell$ in the equipment blank sample collected from the bailer. The compounds 1,1,1-TCA; 1,1-DCE; chloroform; PCE; cis-1,2-DCE; and p-isopropyl toluene were detected at concentrations of 0.38 $\mu\text{g}/\ell$, 0.34 $\mu\text{g}/\ell$, 0.65 $\mu\text{g}/\ell$, 1.8 $\mu\text{g}/\ell$, 0.84 $\mu\text{g}/\ell$, and 0.97 $\mu\text{g}/\ell$, respectively, in the equipment blank collected from the pump. No VOCs were detected in the field blank or trip blank samples collected during the fourth quarter 1995.

VOC analytical results for the groundwater samples collected from the groundwater monitoring wells during the fourth quarter 1995 are presented in Table 5 and Figure 6.

7.0 DISCUSSION

Based on groundwater level measurements obtained on November 19, 1995, groundwater elevations increased in groundwater monitoring wells GW-2 through GW-10 between 5.23 feet (well GW-9) and 6.17 feet (well GW-5) since September 18, 1995. During the period between December 8, 1994 and November 19, 1995, the groundwater levels increased by 18.28 feet in groundwater monitoring well GW-1. During the period between November 19 and December 18, 1995, groundwater levels decreased in all ten groundwater monitoring wells between 0.50 feet (well GW-6) and 2.81 feet (well GW-9). The groundwater level measurements performed on November 19, 1995 indicate that the instantaneous groundwater flow direction was southeasterly beneath the Site, the Kaiser Permanente property and the Home Depot property. The groundwater level measurements performed on December 18, 1995 indicated that the instantaneous groundwater flow direction was southwesterly beneath the Site and the Kaiser Permanente property and south/southeasterly beneath the Home Depot property. Instantaneous groundwater flow direction beneath the Site is significantly impacted by pumping of aeration wells and supply wells located within the Rinaldi-Toluca and North Hollywood well fields.

TCE was detected in the groundwater samples collected from groundwater monitoring wells GW-1, GW-3 and GW-7 through GW-10 during the third quarter 1995 sampling event at concentrations above the DHS MCL. TCE was also detected at concentrations above the MCL in the groundwater samples collected from all seven groundwater monitoring wells during the fourth quarter 1995. The concentration of PCE detected exceeded the MCL in the groundwater samples obtained from groundwater monitoring well GW-8 during the third quarter 1995 and from groundwater monitoring wells GW-7 through GW-10 in the fourth quarter 1995. The compounds 1,1,2-TCA, benzene (for the first time), and 1,2-DCA were detected only in the fourth quarter 1995 groundwater samples collected from groundwater monitoring well GW-10 at concentrations above their respective MCLs. 1,1-DCE was detected in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3, GW-7, and GW-10 at concentrations above the MCL. The compounds 1,1-DCA and cis-1,2-DCE were detected in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 at concentrations above the MCL. The compound CT was detected in the third quarter 1995 groundwater samples collected from groundwater monitoring wells GW-7 and GW-8, and from the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3, and GW-7 through GW-10 at concentrations above the DHS MCL. All other VOCs included in the analysis of groundwater samples collected from groundwater monitoring wells GW-1 through GW-3 and GW-7 through GW-10 were either not detected (ND) or present at concentrations below their respective MCLs.

Nitrate was detected at concentrations above the MCL, in the third quarter 1995 groundwater samples collected from groundwater monitoring wells GW-7 and GW-9, and in the fourth quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2 and GW-9. The turbidity

levels detected in the third quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-1 through GW-3, and the fourth quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-1 through GW-3, GW-7, GW-8, and GW-10 were above the secondary MCL. No other inorganic constituents were detected above the primary or secondary MCLs during the third and fourth quarter 1995 sampling events.

In general, the concentrations of VOCs detected in groundwater monitoring wells GW-2, GW-3 and GW-7 decreased from the September 1995 sampling event to the November 1995 sampling event. The concentrations of TCE detected in groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 decreased from 5.1 $\mu\text{g}/\ell$, 18 $\mu\text{g}/\ell$ and 110 $\mu\text{g}/\ell$, respectively, during the September 1995 sampling event to 4.8 $\mu\text{g}/\ell$, 15 $\mu\text{g}/\ell$ and 27 $\mu\text{g}/\ell$, respectively, during the November 1995 sampling event. The TCE concentrations detected in groundwater samples collected from groundwater monitoring well GW-1 decreased from 6,400 $\mu\text{g}/\ell$ in September 1994 to 7.0 $\mu\text{g}/\ell$ in November 1995. The TCE concentrations detected in groundwater samples from groundwater monitoring wells GW-8 through GW-10 increased from the September 1995 sampling event to the November 1995 sampling event. The concentrations of TCE detected in the third quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-8, GW-9, and GW-10 increased from 6.4 $\mu\text{g}/\ell$, 0.47 $\mu\text{g}/\ell$ and 21 $\mu\text{g}/\ell$, to 170 $\mu\text{g}/\ell$, 5.8 $\mu\text{g}/\ell$ and 30 $\mu\text{g}/\ell$, respectively. The concentrations of TCE detected in the fourth quarter 1995 groundwater samples obtained from all seven groundwater monitoring wells represented an increase of as much as two orders of magnitude when compared to third quarter 1995 concentrations. The concentrations of TCE detected in the groundwater samples from groundwater monitoring wells GW-1, GW-2, GW-3, GW-7, GW-8, GW-9, and GW-10 increased to 25 $\mu\text{g}/\ell$, 50 $\mu\text{g}/\ell$, 160 $\mu\text{g}/\ell$, 2 $\mu\text{g}/\ell$, 400 $\mu\text{g}/\ell$, 310 $\mu\text{g}/\ell$, 97 $\mu\text{g}/\ell$ and 3,200 $\mu\text{g}/\ell$, respectively. Pumping of the production wells in the North Hollywood and Rinaldi-Toluca well fields, and municipal aeration wells together with an off-site source may account for the fluctuation in TCE concentrations detected in the groundwater monitoring wells at the Site.

8.0 LIMITATIONS

SECOR has prepared this report for the exclusive use of AlliedSignal Aerospace, their representatives, and other authorized parties. The findings and conclusions presented herein are based primarily upon the laboratory analyses of groundwater samples collected during this study. All work has been conducted in accordance with generally accepted practices in the fields of environmental engineering, geology, and hydrogeology that exist in Los Angeles County at this time. No other warranty, either expressed or implied, is made.

TABLES

TABLE 1 - GROUNDWATER SURFACE ELEVATIONS (all elevations in feet above mean sea level)					
Well ID	Wellhead Elevation	Depth to Water (11/19/95)	Groundwater Elevation (11/19/95)	Depth to Water (12/18/95)	Groundwater Elevation (12/18/95)
GW-1	734.30	219.90	514.40	222.04	512.26
GW-2	737.82	222.69	515.13	224.63	513.19
GW-3	735.53	220.75	514.78	222.86	512.67
GW-4	740.65	226.18	514.47	227.88	512.77
GW-5	738.13	225.05	513.08	227.13	511.00
GW-6	742.46	228.06	514.40	228.56	513.90
GW-7	734.48	219.76	514.72	222.20	512.28
GW-8	741.80	226.39	515.41	228.86	512.94
GW-9	740.55	225.39	515.16	228.20	512.35
GW-10	737.44	222.57	514.87	225.25	512.19

Notes:

NM: Not Measured.
NE: Not Estimated.

TABLE 2 - INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS
(all results in milligrams per liter, except turbidity)

Constituent	GW-1 (11/20/95)	GW-1 (12/18/95)	GW-2 (11/19/95)	GW-2 (12/19/95)	GW-3 (11/20/95)	GW-3 (12/19/95)
Chloride	24	17	26	18	19	20
Sulfate	52	34	42	39	32	38
Carbonate Alkalinity	<10	<10	<10	<10	<10	<10
Bicarbonate Alkalinity	210	140	200	170	150	200
Hydroxide Alkalinity	<10	<10	<10	<10	<10	<10
Total Alkalinity	210	140	200	170	150	200
Calcium	73	50	77	73	61	71
Magnesium	16	11	17	15	13	15
Potassium	4.9	8.0	5.2	4.6	5.7	7.2
Sodium	19	17	20	17	9.7	18
TDS	410	280	400	350	300	370
Turbidity	8.6	14	15	7.4	12	5.3
Nitrate	40	27	38	47	34	38

TABLE 2 - INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS
(all results in milligrams per liter, except turbidity)

Constituent	GW-7 (11/22/95)	GW-7 (12/20/95)	GW-8 (11/21/95)	GW-8 (12/19/95)	GW-9 (11/21/95)	GW-9 (12/19/96)	GW-10 (11/21/95)	GW-10 (12/20/95)
Chloride	31	18	29	25	28	26	23	22
Sulfate	57	44	52	44	60	56	59	60
Carbonate Alkalinity	<10	<10	<10	<10	<10	<10	<10	<10
Bicarbonate Alkalinity	230	180	260	290	210	220	200	410
Hydroxide Alkalinity	<10	<10	<10	<10	<10	<10	<10	<10
Total Alkalinity	230	180	260	290	210	220	200	410
Calcium	96	92	88	98	78	97	77	120
Magnesium	21	19	19	22	17	21	17	25
Potassium	3.6	3.1	3.9	5.3	3.7	4.3	3.7	3.9
Sodium	25	21	26	26	26	27	26	24
TDS	450	320	480	480	470	570	470	620
Turbidity	2.5	13	3.1	84	2.6	3.3	1.4	6.4
Nitrate	58	37	41	28	48	100	34	38

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<10: Less than the denoted detection limit.

**RESULTS OF GROUNDWATER MONITORING
FIRST AND SECOND QUARTERS 1995**

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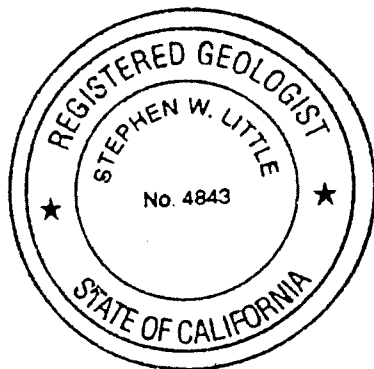
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1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the first and second quarters of 1995 was conducted at the AlliedSignal Aerospace property in North Hollywood, California on March 6-10 and September 18-21, 1995, respectively, in accordance with the California Regional Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. In accordance with the RWQCB approved *Soil Gas Monitoring Summary* report prepared by Hydrologue, Inc., dated March 3, 1995, two on-site groundwater monitoring wells (GW-2 and GW-3) and four off-site (located on Kaiser Permanente Property) groundwater monitoring wells (GW-7 through GW-10) were sampled during the two groundwater monitoring events. Groundwater monitoring well GW-1, located on site, was not sampled during these monitoring episodes. This well was damaged during the remedial activities conducted as a part of on-site treatment of shallow soil impacted by Total Petroleum Hydrocarbons (TPH).

During the period between March 6 and September 18, 1995, groundwater levels increased between 9.55 feet (groundwater monitoring well GW-6) and 13.98 feet (groundwater monitoring well GW-9). Groundwater levels beneath the Site and the adjacent Kaiser property increased in groundwater monitoring wells GW-2, GW-3, GW-4, GW-6, GW-8 and GW-9 between 0.23 feet (groundwater monitoring well GW-4) and 3.45 feet (groundwater monitoring well GW-6) during the period between December 8, 1994 and March 6, 1995. The groundwater levels in groundwater monitoring wells GW-5, GW-7 and GW-10 decreased between 0.34 feet (GW-7) and 0.60 feet (GW-10) over the same period. Based on the groundwater level measurements obtained on January 17, 1995, the instantaneous groundwater flow direction was northeasterly beneath the western portion of the Site and the central portion of the Kaiser property, and north/northwesterly beneath the eastern portion of the Home Depot property. The groundwater level measurements collected on February 28, 1995 indicated that the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. Based on the groundwater level measurements obtained on March 6, 1995, the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. The instantaneous groundwater flow direction was southeasterly beneath the Site, the Kaiser property and the Home Depot property based on the September 18, 1995 measurements. Determination of an average groundwater flow direction based on the groundwater contours in a transient system such as the one present beneath the Site is questionable.

Consistent with regional data, nitrate was detected in the first quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 through GW-10 and from second

quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL). The compound Trichloroethene (TCE) was detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 and in the second quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-10 at concentrations above the DHS MCL. The compound Tetrachloroethene (PCE) was detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-3 and GW-9 and from the second quarter 1995 groundwater sample obtained from groundwater monitoring well GW-2 at concentrations above the DHS MCL. The Carbon Tetrachloride (CT) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-8 and GW-9; the cis-1,2-Dichloroethene (cis-1,2-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-3, GW-7 and GW-10; the 1,1-Dichloroethene (1,1-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7; and the 1,1-Dichloroethane (1,1-DCA) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 were all above their respective DHS MCLs during the March 1995 groundwater sampling event. CT concentrations detected in groundwater samples obtained from groundwater monitoring wells GW-3 and GW-7 were also above the DHS MCL during the second quarter 1995 groundwater sampling episode. All other Volatile Organic Compounds (VOCs) detected in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 during the first and second quarter 1995 sampling events were either non-detect or present at concentrations below their respective DHS MCLs.

During the last eight groundwater sampling events, concentrations of TCE in groundwater generally increased from November 1993 to February 1994, but subsequently decreased in several of the groundwater monitoring wells between February/March 1994 and May 1994. TCE concentrations again increased in groundwater samples collected from all the groundwater monitoring wells between May 1994 and August/September 1994 and then decreased in groundwater samples collected from the groundwater monitoring wells between August/September 1994 and November/December 1994. TCE concentrations increased in groundwater samples obtained from all the groundwater monitoring wells between November/December 1994 and March 1995 and then decreased between March and September 1995. For example, the TCE concentrations detected in groundwater samples collected from groundwater monitoring wells GW-1, GW-2, and GW-7 through GW-10 increased between one and two orders of magnitude from the November 1993 groundwater sampling event to the February 1994 groundwater sampling event, whereas the TCE concentrations in groundwater samples collected from groundwater monitoring well GW-3 remained consistent during this period. However, the TCE concentrations detected in groundwater samples from all six groundwater monitoring wells decreased as much as two orders of magnitude from the February/March 1994 sampling episode to the May 1994 sampling event. The concentrations of TCE detected in groundwater samples obtained from

all six groundwater monitoring wells increased as much as three orders of magnitude from the May 1994 sampling event to the August/September 1994 sampling episodes. In addition, the concentrations of TCE detected in groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-8 through GW-10 decreased up to two orders of magnitude from the August/September 1994 sampling events to the November/December 1994 sampling episodes, whereas the TCE concentration in groundwater samples collected from groundwater monitoring well GW-7 increased one order of magnitude during the same period. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 increased up to two orders of magnitude from the November/December 1994 sampling episodes to the March 1995 sampling event, whereas the TCE concentration in groundwater samples collected from groundwater monitoring well GW-5 decreased slightly over the same period. Finally, the concentrations of TCE detected in groundwater samples obtained from all six groundwater monitoring wells decreased up to two orders of magnitude from the March 1995 sampling event to the September 1995 sampling episodes. An off-site source together with groundwater extraction from production wells in the North Hollywood and Rinaldi-Toluca well fields may account for the fluctuation in TCE concentrations detected in groundwater samples collected from the groundwater monitoring wells at the Site.

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TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - March 6-10, 1995
(all results in micrograms per liter)

Organic Constituent	GW-2 (03/09/95)	GW-3 (03/09/95)	GW-7 (03/10/95)	GW-8 (03/09/95)	GW-9 (03/09/95)	GW-10 (03/10/95)	Equipment Blank (03/09/95)	Trip Blank (03/09/95)
TPH	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1000
1,1,1,2-Tetrachloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,1,1,1-Trichloroethane	11/10	30/21	51/43	1.6	3.1/3.2	<10	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,1-Dichloroethane	0.9	12/9.3	37	<0.2	<0.2	<10	<0.2	<0.2
1,1-Dichloroethene	10/8.5	22/15	22	2.0	2.2/2.6	<10	<0.2	<0.2
1,1-Dichloropropene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2,3-Trichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2,3-Trichloropropane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2,4-Trimethylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
1,2-Dibromomethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dichloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dichloropropane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,3,5-Trimethylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,3-Dichloropropane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
2,2-Dichloropropane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
2-Chlorotoluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
4-Chlorotoluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromochloromethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromodichloromethane	0.3	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromomethane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
Benzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromoform	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
Chlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Carbon Tetrachloride	3.7	2.8	<20	2.0	1.4/1.6	<10	<0.2	<0.2
Chloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Chloroform	2.3	5.7/10	64/39	1.0	1.1/0.7	<10	<0.2	<0.2
Chloromethane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - March 6-10, 1995
(all results in micrograms per liter)

Organic Constituent	GW-2 (03/09/95)	GW-3 (03/09/95)	GW-7 (03/10/95)	GW-8 (03/09/95)	GW-9 (03/09/95)	GW-10 (03/10/95)	Equipment Blank (03/09/95)	Trip Blank (03/09/95)
Dibromochloromethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Dibromomethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Dichlorodifluoromethane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
Ethylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Freon 113	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Hexachlorobutadiene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Isopropylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Methylene Chloride	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
N-Butylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
N-Propylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Naphthalene	<1	<5	<100	<1	<1	<50	<1	<1
Styrene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Trichloroethene	250/180	1300/810	4700/5500	190/170	71/87	1100	<0.2	<0.2
Trichlorofluoromethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Toluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Tetrachloroethene	2.7	6.6	<20	2.5/3.6	6.0/9.2	<10	<0.2	<0.2
Vinyl Chloride	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
cis-1,2-Dichloroethene	1.1	13/9.8	70/67	1.2	<0.2	12	<0.2	<0.2
cis-1,3-Dichloropropene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
m- & p-xylenes	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
o-xylene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
p-Isopropyl toluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
sec-Butylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
trans-1,3-Dichloropropene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
tert-Butylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2

TPH: Total Petroleum Hydrocarbons.
<0.2 Less than the detection limit of 0.2.

003069

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 824.2) - September 18-21, 1995
(all results in micrograms per liter)

Organic Constituent	GW-2 (09/21/95)	GW-3 (09/21/95)	GW-7 (09/21/95)	GW-8 (09/20/95)	GW-9 (09/20/95)	GW-10 (09/21/95)	Equipment Blank (09/21/95)	Trip Blank (09/21/95)
TPH	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000
1,1,1,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,1-Trichloroethane	<0.2	<0.2	1.6	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane	0.59	0.33	0.67	0.40	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene	<0.2	0.63	1.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichloropropane	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dibromooethane	<0.2	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3,5-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
4-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromomethane	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Benzene	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2
Bromoform	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2
Chlorobenzene	<0.2	<0.5	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5
Carbon Tetrachloride	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2
Chloroethane	<0.2	0.84	1.6	<0.2	<0.2	<0.2	<0.5	<0.5
Chloroform	0.44	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloromethane	<0.5	0.50	1.3	0.47	<0.2	0.42	0.31	<0.2
		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

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TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - September 18-21, 1995
(all results in micrograms per liter)

Organic Constituent	GW-2 (09/21/95)	GW-3 (09/21/95)	GW-7 (09/21/95)	GW-8 (09/20/95)	GW-9 (09/20/95)	GW-10 (09/21/95)	Equipment Blank (09/21/95)	Trip Blank (09/21/95)
Dibromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromomethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichlorodifluoromethane	3.3	1.6	0.64	3.9	<0.5	1.5	<0.5	<0.5
Ethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Freon 113	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Hexachlorobutadiene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Isopropylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	<1	<1	<1	<1	<1	<1	<1	<1
N-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
N-Propylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene	5.1	18	110	6.4	0.47	21	<0.2	<0.2
Trichlorofluoromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tetrachloroethene	5.0	2.2	1.6	4.9	0.48	2.3	<0.2	<0.2
Vinyl Chloride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	3.4	1.3	1.4	2.0	0.37	0.94	<0.2	<0.2
cis-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
m- & p-xylenes	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
o-xylene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p-Isopropyl toluene	<0.2	0.48	0.51	<0.2	<0.2	<0.2	<0.2	<0.2
sec-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
tert-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

TPH: Total Petroleum Hydrocarbons.
<0.2 Less than the detection limit of 0.2.

TABLE 5 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2)
(all results in micrograms per liter)

Organic Constituent	GW-9 (11/21/95)	GW-9 (12/19/95)	GW-10 (11/21/95)	GW-10 (12/20/95)	Equipment Blank (11/21/95)	Equipment Blank (12/18/95)	Trip Blank (11/21/95)	Trip Blank (12/18/95)	Field Blank (11/21/95)	Field Blank (12/18/95)	Pump Equipment Blank (12/20/95)
TPH	<2,000	<2,000	<2,000	<2,000	NA	NA	NA	NA	NA	NA	<NA
1,1,1,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.38
1,1,1-Trichloroethane	<0.2	5.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene	<0.2	5.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.34
1,1-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,4-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromomethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3,5-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
4-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromoform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride	<0.2	1.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	0.38	1.5	0.32	90	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.65
Chloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

TABLE 5 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2)
(all results in micrograms per liter)

Organic Constituent	GW-9 (11/21/95)	GW-9 (12/19/95)	GW-10 (11/21/95)	GW-10 (12/20/95)	Equipment Blank (11/21/95)	Equipment Blank (12/18/95)	Trip Blank (11/21/95)	Trip Blank (12/18/95)	Field Blank (11/21/95)	Field Blank (12/18/95)	Pump Equipment Blank (12/20/95)
Dibromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromomethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichlorodifluoromethane	1.4	2.3	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Freon 113	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Hexachlorobutadiene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Isopropylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
N-Propylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	<1	<1	<1	<0.2	<1	<1	<1	<1	<1	<1	<1
Styrene	<0.2	<0.2	<0.2	3200	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene	5.8	97	30	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichlorofluoromethane	<0.2	<0.2	<0.2	<0.2	<0.2	0.23	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.2	<0.2	<0.2	44	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tetrachloroethene	1.0	13	2.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.8
Vinyl Chloride	<0.2	<0.2	<0.2	140	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	0.54	0.95	0.61	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.84
cis-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
m- & p-xylenes	<0.4	<0.2	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
o-xylene	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p-Isopropyl toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.97
sec-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	<0.2	<0.2	1.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
tert-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

TPH: Total Petroleum Hydrocarbons
 <0.2 Less than the detection limit of 0.2.
 NA: Not Analyzed
 * includes both low and high dilution results.

TABLE 6 - HISTORIC GROUNDWATER SURFACE ELEVATIONS
(all elevations in feet above mean sea level)

Date	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10
06/16/94	516.10	516.87	516.58	515.60	515.77	515.10	516.75	517.55	517.62	517.13
07/19/94	516.90	517.82	517.41	516.37	516.44	516.62	517.38	518.50	518.65	517.80
08/15/94	509.35	510.63	509.39	509.79	509.14	513.61	508.39	512.34	509.05	506.04
09/07/94	502.82	504.08	502.57	504.16	503.19	508.52	501.42	502.98	501.49	500.74
10/11/94	495.77	496.42	495.19	497.61	496.50	501.98	494.20	495.08	493.67	493.46
11/21/94	493.63	493.61	493.69	493.99	495.75	495.23	493.84	492.87	492.40	493.58
12/08/94	496.12	496.26	496.41	496.50	497.76	496.05	496.54	495.87	495.69	496.46
01/17/95	NM	501.61	501.59	501.24	502.11	500.20	501.76	501.83	501.84	501.91
02/28/95	NM	498.14	497.53	497.52	498.05	500.09	497.02	497.59	496.79	496.72
03/06/95	NM	497.27	496.69	496.73	497.28	499.50	496.20	496.70	495.95	495.86
09/18/95	NM	509.52	508.93	508.45	506.91	509.05	508.74	510.06	509.93	509.09
11/19/95	514.40	515.13	514.78	514.47	513.08	514.40	514.72	515.41	515.16	514.87
12/18/95	512.26	513.19	512.67	512.77	511.00	513.90	512.28	512.94	512.35	512.19

NC: Not calculated.
NM: Not measured.

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TABLE 7 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date														
	08/21/91	09/17/91	01/14/92	03/16/92	05/19/92	08/11/92	01/14/93	03/02/93	06/01/93	12/07/93	02/18/94	05/16/94	08/16/94	11/20/95	12/18/95
Chloride	44.7/46.9	38.5	31.0	24.2	29.0	37.0	22	27	27	25	27	26	40	24	17
Sulfate	74.7/67.1	69.3	59.3	50.8	59.4	64.0	55	59	55	56	56	65	72	52	34
Carbonate Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<10	<10
Bicarbonate Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210	210	250	210	140
Hydroxide Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<10	<10
Total Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210	210	250	210	140
Calcium	113/111	103	81.5	79.8	88.9	85	86	86	89	91	95	92	100	73	50
Magnesium	24.9/24.7	23.6	18.3	17.1	17.8	19.9	18	17	19	19	20	19	24	16	11
Potassium	ND/ND	ND	ND	ND	ND	ND	3.9	3.7	3.8	3.8	5.2	3.9	4.8	4.9	8.0
Sodium	24.5/23.9	23.6	23.6	22.7	24	26.1	25	24	26	27	26	26	29	19	17
TDS	551/514	580	437	441	440	581	400	360	400	410	420	430	500	410	280
Turbidity	ND/ND	0.38	0.40	0.60	0.20	0.2	0.68	1.0	2.4	1.42	3.1	3.9	<0.1	8.6	14
Nitrate	18/17.8	17.7	10.5	10.9	14.9	17.3	45	42	38	36	49	37	75	40	27
Nitrite	ND/ND	ND	3.9	ND	ND	ND	<0.05	<0.05	<0.05	<0.1	<0.1	<0.2	<0.2	NA	NA
Ammonia Nitrogen	0.48/0.35	0.51	ND	0.20	ND	ND	<0.1	0.21	<0.1	0.38	<0.1	<0.1	0.36	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

003075

TABLE 8 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	9/17/91	1/16/92	3/17/92	5/20/92	8/10/92	1/14/93	3/2/93	6/2/93	8/19/93	11/30/93	2/16/94	5/18/94	8/16/94	12/12/94	3/9/95	9/21/95	11/19/95	12/19/95
Chloride	34.8/33.4	28.9	25.2	26.4	24.3	31	30	30	28	31	32	35	36	35	25	40	26	18
Sulfate	63.7/61.9	57.3	48.5	59	52.6	58	55	55	65	56	56	61	64	58	60	61	42	39
Carbonate Alkalinity	ND/ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	248/248	172	197	261	264	210	210	210	220	280	290	240	290	250	250	260	200	170
Hydroxide Alkalinity	ND/ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	248/248	172	197	261	264	210	210	210	220	280	290	240	290	250	250	260	200	170
Calcium	96.9/100	79.2	85	89	87.6	79	98	84	95	86	130	100	110	95	93	110	77	73
Magnesium	23.1/17.8	17.8	19	20.1	20.0	17	20	18	20	19	27	22	25	21	20	25	17	15
Potassium	ND/ND	ND	ND	ND	ND	3.3	3.9	3.4	3.7	3.3	4.4	4.2	4.7	3.9	4.0	4.7	5.2	4.6
Sodium	23.5/24.1	25.2	27.9	23.5	25.2	23	26	24	25	24	27	26	26	23	23	29	20	17
TDS	541/534	443	369	441	485	430	400	440	440	460	550	420	490	500	460	530	400	350
Turbidity	3.8/4.0	3.0	1.40	0.20	0.5	19	23	8.7	39	4.4	21	180	4.5	130	23	1.1	15	7.4
Nitrate	14.5/14.4	19.9	11.4	10.6	9.1	69	64	58	66	61	60	68	55	65	35	55	38	47
Nitrite	ND/ND	3.5	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA
Ammonia Nitrogen	ND/ND	ND	2.7	ND	ND	<0.1	0.11	<0.1	<0.1	<0.1	<0.1	<0.1	0.63	<0.1	<0.1	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 9 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3

(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Data																	
	09/17/91	01/16/92	03/16/92	05/19/92	08/12/92	01/14/93	3/02/93	6/02/93	8/19/93	11/30/93	02/16/94	05/18/94	08/16/94	12/13/94	03/09/95	09/21/95	11/20/95	12/19/95
Chloride	36.3	33.5/34	30.3/39	33.3/32	36.0	33	28	33	26	27	28	31	38	35	39	29	19	20
Sulfate	68.5	61.1/54	52.1/59	61.9/61.9	66.1	54	53	52	56	50	52	57	67	57	77	49	32	38
Carbonate Alkalinity	ND	ND/ND	qND/ND	ND/ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	244	208/201	232/228	245/253	248	190	190	200	200	210	210	190	260	240	290	220	150	200
Hydroxide Alkalinity	ND	ND/ND	ND/ND	ND/ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	244	208/201	232/228	245/253	248	190	190	200	200	210	210	190	260	240	290	220	150	200
Calcium	107	81.4/101	86.6/96.7	88.6/92.4	110	89	86	90	91	82	100	98	100	110	110	83	61	71
Magnesium	24.5	19.8/21.7	19.7/22.1	20.1/21.0	23.6	19	18	19	19	18	21	20	24	22	24	19	13	15
Potassium	ND	ND/4	ND/4	ND/ND	ND	3.9	3.5	3.9	3.8	3.6	4.2	4.6	4.9	4.3	5.1	5.9	5.7	7.2
Sodium	25.1	24.8/26.8	25.1/29.5	24.4/25.5	23.8	26	24	26	25	24	25	26	27	25	27	23	9.7	18
TDS	521	477/330	429/450	455/492	1,070	420	360	400	380	500	460	360	500	490	550	430	300	370
Turbidity	ND	0.50/0.15	0.40/0.20	0.20/0.20	0.20	4.3	0.85	2.0	8.9	4.7	27	160	3.4	30	2.3	13	12	5.3
Nitrate	16.3	12.4/15.2	13.9/15.8	15.7/15.6	15.5	66	60	56	66	57	60	67	74	64	70	48	34	38
Nitrite	ND	4.4/ND	ND/ND	ND/ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA
Ammonia Nitrogen	ND	ND/ND	0.12/ND	ND/ND	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.10	<0.1	0.61	0.12	<0.1	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 10 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date									
	09/08/93	11/29/93	02/16/94	05/18/94	08/15/94	12/11/94	03/10/95	09/21/95	11/22/95	12/20/95
Chloride	27	27	27	26	49	31	41	32	31	18
Sulfate	57	53	66	62	130	58	77	57	57	44
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	180	190	260	190	330	220	360	220	230	180
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	180	190	260	190	330	220	360	220	230	180
Calcium	96	72	120	80	180	94	140	89	96	92
Magnesium	21	18	26	17	39	21	30	20	21	19
Potassium	4	3.7	4.2	3.6	5.7	4.0	4.5	4.0	3.6	3.1
Sodium	29	26	30	27	35	26	27	26	25	21
TDS	420	860	550	350	750	460	650	460	450	320
Turbidity	7.0	<1.0	7.8	5.1	0.30	1.5	0.80	0.9	2.5	13
Nitrate	63	49	71	44	100	64	68	55	58	37
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<1	<0.2	NA	NA
Ammonia Nitrogen	<0.02	<1.0	0.12	<0.1	0.28	<0.1	0.11	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

003078

TABLE 11 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date									
	09/09/93	11/29/93	02/16/94	05/17/94	08/15/94	12/10/94	03/09/95	09/20/95	11/21/95	12/19/95
Chloride	34	35	34	38	40	34	36	35	29	25
Sulfate	60	56	55	62	69	59	62	58	52	44
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	230	240	240	240	220	250	250	280	260	290
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	230	240	240	240	220	250	250	280	260	290
Calcium	110	92	110	98	90	100	130	100	88	98
Magnesium	25	23	24	21	19	22	29	25	19	22
Potassium	4.9	4.4	4.5	3.9	4.1	4.5	5.8	6.2	3.9	5.3
Sodium	29	28	28	25	25	27	35	30	26	26
TDS	500	510	500	510	450	490	500	530	480	480
Turbidity	5.0	<1.0	23	8.2	0.18	12	2.3	43	3.1	84
Nitrate	74	56	69	76	71	58	63	52	41	28
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA
Ammonia Nitrogen	0.03	<1.0	<0.1	<0.1	<0.1	0.17	<0.1	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 12 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-9
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date									
	09/08/93	11/29/93	02/16/94	05/17/94	08/16/94	12/10/94	03/09/95	09/20/95	11/21/95	12/19/95
Chloride	26	21	31	22	30	30	38	27	28	26
Sulfate	1,000	59	58	66	69	58	67	61	60	56
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	180	190	180	190	220	220	230	210	210	220
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	180	190	180	190	220	220	230	210	210	220
Calcium	86	64	82	85	87	96	100	82	78	97
Magnesium	20	17	18	18	19	21	23	19	17	21
Potassium	4.4	3.9	3.8	4.1	4.3	4.7	4.6	4.7	3.7	4.3
Sodium	29	25	26	26	28	29	29	28	26	27
TDS	3,400	420	410	360	410	440	510	430	470	570
Turbidity	30	<1.0	1.9	2.9	0.15	17	21	13	2.6	3.3
Nitrate	45	30	41	32	65	58	85	46	48	100
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA
Ammonia Nitrogen	<0.02	<1.0	0.11	<0.1	<0.1	0.12	<0.1	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected
NA: Not Analyzed

TABLE 13 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-10

(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date									
	09/09/93	11/29/93	02/16/94	05/18/94	08/15/94	12/11/94	03/10/95	09/21/95	11/21/95	12/20/95
Chloride	21	20	22	20	32	32	31	27	23	22
Sulfate	63	58	64	64	72	57	56	60	59	60
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	190	200	260	190	420	240	270	220	200	410
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	190	200	260	190	420	240	270	220	200	410
Calcium	85	68	110	77	140	98	120	83	77	120
Magnesium	20	17	23	16	30	22	24	19	17	25
Potassium	4.1	3.6	4.4	3.8	5.1	4.4	4.7	4.1	3.7	3.9
Sodium	30	26	33	27	30	28	28	26	26	24
TDS	390	360	480	340	640	460	510	440	470	620
Turbidity	10	<1.0	7.2	0.52	0.41	78	5.3	0.4	1.4	6.4
Nitrate	38	25	33	27	58	64	59	46	34	38
Nitrite	ND	<1.0	<0.1	<0.1	<0.2	<0.5	<1	<0.2	NA	NA
Ammonia Nitrogen	0.02	<1.0	0.11	0.31	0.18	<0.1	<0.1	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

003081

TABLE 14 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR W-1 (all results in micrograms per liter)								
Sample ID	Sampling Method	Date	1,1,1-TCA	1,1-DCA	1,1-DCE	TCE	Toluene	PCE
W-1 @ 290'	AL	5/14/87	<1	<1	<1	<1	<1	<1
W-1 @ 426'	AL	5/15/87	<1	<1	<1	<1	<1	<1
W-1 @ 290'	SP	6/8/87	<1	<1	<1	<1	5*	<1
W-1 @ 420'	SP	6/11/87	<1	<1	<1	<1	7	<1

1,1,1-TCA: 1,1,1-Trichloroethane.
 1,1-DCA: 1,1-Dichloroethane.
 1,1-DCE: 1,1-Dichloroethene.
 TCE: Trichloroethene.
 PCE: Tetrachloroethene.
 <1: Less than the detection limit of 1.
 AL: Air Lift Pump.
 SP: Submersible Pump.
 *: Toluene was detected at a concentration of 2 µg/l in the trip blank samples collected on 6/8/87.

TABLE 15 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in micrograms per liter)

Organic Constituent	Sample Date															
	08/21/91	09/17/91	01/14/92	03/15/92	05/19/92	08/11/92	01/14/93	03/02/93	06/17/93	12/07/93	02/18/94	05/16/94	08/16/94	09/08/94	11/20/95	12/18/95
1,1,1-Trichloroethane	2.4/2.3	1.6	ND	5.1	3.1	4.3	<3	<0.5	3.0	0.3	1.4	<0.2	20	140	<0.2	1.2
1,1-Dichloroethane	ND/ND	ND	ND	1.3	0.75	0.51	<3	<0.5	<3	0.3	<1	<0.2	<20	<100	0.20	0.28
1,1-Dichloroethene	3.7/3.5	2.8	ND	3.1	3.3	5.5	<3	<0.5	2.9	<0.2	1.0	<0.2	<20	<100	<0.2	2.0
1,2,3-Trichlorobenzene	ND/0.75	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	<0.2	<0.2
Carbon Tetrachloride	1.1/0.70	1.3	ND	ND	0.85	1.6	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	<0.2	0.32
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	<3	1.4	<3	<0.2	<1	<0.2	<50	<300	<0.2	1.4
Trichloroethene	40/39	27	3.6	130	58	100	54	25	91	4.4	62	3.5	1,800	6,400	7.0	25
Toluene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2	<20	<100	<0.2	<0.2
Tetrachloroethene	1.2/1.0	1.1	ND	1.7	1.4	2.1	<3	2.2	4.9	2.6	1.7	1.4	<20	<100	2.0	2.1
cis-1,2-Dichloroethene	ND/ND	ND	ND	3.0	1.6	1.4	<3	0.71	5.0	2.1	3.0	1.1	36	160	1.1	1.3
m-&p-xylenes	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2	<20	<100	<0.4	<0.4
p-Isopropyl Toluene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	0.31	0.29
Benzene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	<0.4	0.19

ND: Not Detected.
<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 16 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2
(all results in micrograms per liter)

Organic Constituent	01/15/92	03/17/92	05/20/92	08/10/92	01/14/93	03/02/93	06/18/93	08/19/93	11/30/93	02/16/94	03/09/94	05/18/94	08/16/94	09/08/94	11/22/94	12/12/94	03/09/95	09/21/95	11/19/95	12/19/95
1,1,1-Trichloroethane	ND	2.5	12	15	0.54	<0.5	<3	<1	0.37	<20	<1	<0.2	10	12	1.5	0.5	11/10	<0.2	<0.2	2.2
1,1-Dichloroethane	ND	ND	0.53	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2	<10	<10	0.5	0.3	<50.9	0.59	0.50	0.53
1,1-Dichloroethene	ND	2.4	13	17	0.64	<0.5	<3	<1	<0.2	<20	<1	<0.2	<10	17	1.3	0.5	10/8.5	<0.2	<0.2	4.9
Carbon Tetrachloride	ND	0.57	3.3	3.8	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2	12	14	1.6	0.7	<573.7	<0.2	<0.2	3.8
Trichloroethene	1.6	31	83	150	24	19	48	48	29	890	60	9.6	830	810	43	13	250/180	5.1	4.8	50
Tetrachloroethene	ND	0.58	1.9	2.3	0.71	0.62	<3	<1	1.7	<20	1.4	0.99	<10	<10	2.1	1.9	<572.7	5.0	3.0	1.8
Toluene	ND	ND	ND	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2	<10	<10	<0.2	<0.2	<5/1.1	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	ND	ND	ND	ND	<0.5	<0.5	<3	<1	0.4	<20	<1	0.49	<10	<10	1.7	1.4	<5/1.1	3.4	2.7	1.3
Dichlorodifluoromethane	ND	ND	ND	ND	<0.5	<0.3	<3	<1	<0.2	<20	<1	<0.2	<10	<10	<0.2	0.5	<20/0.5	3.3	1.6	0.76
Bromodichloromethane	ND	ND	ND	ND	<0.5	<0.3	<3	<1	<0.2	<20	<1	<0.2	<10	<10	<0.2	<0.2	<570.3	<0.2	<0.2	<0.2
Trans-1,2-Dichloroethene	ND	ND	ND	ND	<0.5	<0.3	<3	<1	<0.2	<20	<1	<0.2	<10	<10	<0.2	<0.2	<570.2	0.20	<0.2	<0.2

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 17 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in micrograms per liter)

Organic Constituent	09/17/91	01/16/92	03/16/92	05/19/92	08/12/92	01/14/93	03/02/93	06/18/93	08/19/93	11/30/93	02/16/94	05/18/94	08/16/94	09/08/94	12/13/94	03/09/95	09/21/95	11/20/95	12/19/95
1,1,1-Trichloroethane	7.9	ND/ND	22/20	7.5/7.0	13	<5	<5	<50	<1	0.6	0.31	<0.2	21	83	1.4	30/21	<0.2	0.36	6.6
1,1-Dichloroethane	0.55	ND/ND	6.6/ND	1.5/1.4	ND	<5	<5	<50	<1	<0.2	<4	<0.2	<20	51	<1	12/9.3	0.33	0.64	0.98
1,1-Dichloroethene	8.5	ND/ND	11/ND	6.6/5.5	13	<5	<5	<50	<1	0.4	0.31	<0.2	22	59	1.5	22/15	0.63	0.61	11
Carbon Tetrachloride	2	ND/ND	ND/ND	1.1/ND	ND	<5	<5	<50	<1	<0.2	<4	<0.2	<20	<50	<1	<10/2.8	0.84	0.49	5.0
Trichloroethene	100	4.7/6.4	620/820	100/160	240	68	47	2200	49	15	15	6.0	1,200	4,300	36	1300/810	18	15	160
Tetrachloroethene	2.7	ND/ND	ND/ND	2.0/1.8	3.3	<5	<5	<50	2.2	1.6	<4	0.71	<20	<50	2.4	<10/6.6	2.2	1.5	2.4
cis-1,2-Dichloroethene	0.8	ND/ND	13/ND	2.1/1.9	2.8	<5	<5	<50	<1	<0.2	0.26	<0.2	<20	79	1.7	13/9.8	1.3	1.2	1.5
Toluene	ND	ND/ND	ND/ND	ND/ND	ND	<5	<5	<50	<1	0.2	<4	<0.2	<20	<50	<1	<10/<1	<0.2	<0.2	<0.2
Naphthalene	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	150	<300	<5	<30/<5	<1	<1	<1
Dichlorodifluoromethane	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	<20	<300	<5	<30/<3	1.6	0.64	0.60
p-Isopropyl Toluene	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	<20	<300	<5	<10/<1	0.48	0.40	0.44
Bromodichloromethane	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	<20	<300	<5	<10/<1	<1	<1	0.25

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 18 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7
(all results in micrograms per liter)

Organic Constituent	Sample Date											
	09/08/93	11/29/93	02/16/94	03/08/94	05/18/94	08/15/94	09/07/94	12/11/94	03/10/95	09/21/95	11/22/95	12/20/95
1,1,1-Trichloroethane	0.19	<0.5	<40	<0.4	<0.2	<1	<1	8.1/5.2	51/43	1.6	0.34	14
1,1,2,2-Tetrachloroethane	<0.2	<0.5	<40	0.46	<0.2	<1	<1	<5/<1	<40/<20	<0.2	<0.2	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.5	<40	0.50	<0.2	<1	<1	<5/NA	<40/<20	<0.2	<0.2	<0.2
Trichloroethene	33	7.7	3100	35	0.36	22	48	440/UTD	4700/5500	110	27	2400
Tetrachloroethene	0.21	<0.5	<40	0.72	<0.2	<1	<1	<5/2.5	<40/<20	1.6	0.53	7.7
cis-1,2-dichloroethene	0.58	<0.5	.56	1.0	<0.2	2.1	2.3	8.9/6.1	70/67	1.4	0.80	45
Toluene	<0.2	<0.5	<40	<0.4	0.15	<1	<1	<5/<1	<40/<20	<0.2	<0.2	<0.2
1,1-Dichloroethene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	7.7/6.2	<40/22	1.2	0.48	9.2
Carbon Tetrachloride	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/1.8	<40/<20	1.6	0.55	2.2
1,1,1-Dichloroethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/<1	<40/37	0.67	0.22	14
Dichlorodifluoromethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/<1	<100/<20	0.64	0.56	0.44
P-Isopropyl Toluene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/<1	<10/<1	0.51	<0.2	0.20
1,1,2-Trichloroethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/<1	<10/<1	<0.2	<0.2	0.53
Benzene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/<1	<10/<1	<0.2	<0.2	0.59
trans-1,2-Dichloroethene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/<1	<10/<1	<0.2	<0.2	0.39

ND: Not Detected.

<3: Less than the detection limit of 3.

UTD: Unable to Determine Low Detection Limit.

NA: Not Analyzed.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 19 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	09/09/93	11/29/93	02/16/94	05/17/94	08/15/94	09/07/94	12/10/94	03/09/95 *	09/20/95	11/21/95 *	12/19/95
1,1,1-Trichloroethane	<0.2	<0.5	0.25	<0.2	<0.2	<0.2	<0.2	<2/1.6	<0.2	2.2/<2	3.8
1,2,3-Trichlorobenzene	<0.2	<0.5	0.29	<0.2	<0.2	<0.2	<0.2	<2/<0.2	<0.2	<0.2/<2	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.5	0.23	<0.2	<0.2	<0.2	<0.2	<2/<0.2	<0.2	<0.2/<2	<0.2
1,2-Dichloroethane	0.17	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/<0.2	<0.2	<0.2/<2	<0.2
Carbon Tetrachloride	<0.2	<0.5	0.92	<0.2	0.58	1.4	<0.2	<2/<0.2	<0.2	<0.2/<2	<0.2
Trichloroethene	0.80	0.9	30	1.2	28	32	0.3	<2/2.0	<0.2	2.4/<2	4.2
Tetrachloroethene	0.30	0.6	0.77	0.79	0.66	0.40	8.6	190/170	6.4	170/170	310
cis-1,2-dichloroethene	0.22	0.6	0.5	0.55	0.39	0.30	2.9	2.5/3.6	4.9	5.0/4.8	7.4
1,1-Dichloroethane	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	1.7	<2/1.2	2.0	1.8/<2	2.4
1,1-Dichloroethene	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	0.3	<2/<0.2	0.40	0.26/<2	0.22
Dichlorodifluoromethane	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/2.0	<0.2	2.2/<2	3.8
		<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/2.0	3.9	1.4/<5	1.4

ND: Not Detected.

<3: Less than the detection limit of 3.

*: Includes both low and high dilution results.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 20 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-9
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	09/08/93	11/29/93	02/16/94	05/17/94	08/16/94	09/07/94	12/10/94	03/09/95	09/20/95	11/21/95	12/19/95
1,1,1-Trichloroethane	<0.2	<0.5	0.42	<0.2	3.1	2.4	0.5	3.1/3.2	<0.2	<0.2	5.6
1,1-Dichloroethene	<0.2	<0.5	0.4	<0.2	2.9	2.9	0.5	2.2/2.6	<0.2	<0.2	5.2
Dichlorodifluoromethane	1.0	<0.5	<0.2	<0.2	<3	<3	<0.5	<3/<0.5	<0.5	1.4	2.3
Trichloroethene	2.4	3.1	16	3.4	110	75	9.4	71/87	0.47	5.8	97
Tetrachloroethene	0.28	0.5	1.1	<0.2	7.6	4.4	1.9	6.0/9.2	0.48	1.0	13
cis-1,2-dichloroethene	0.31	<0.5	<0.2	<0.2	<1	<1	0.5	<1/<0.2	0.37	0.54	0.95
1,3-Dichloropropane	<0.2	<0.5	<0.2	0.48	<1	<1	<0.2	<1/<0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride	<0.2	<0.5	<0.2	<0.2	<1	1.8	0.3	1.4/1.6	<0.2	<0.2	1.2

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 21 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-10
(all results in micrograms per liter)

Organic Constituent	Sample Date											
	09/09/93	11/29/93	02/16/94	03/07/94	05/18/94	08/15/94	09/07/94	12/11/94	03/10/95	09/21/95	11/21/95	12/20/95
1,1-Dichloroethane	0.10	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	11
Dichlorodifluoromethane	4.2	<0.5	<40	<2	<0.2	<300	<300	<20/NA	<30	1.5	1.1	<0.5
1,1,1-Trichloroethane	0.14	<0.5	<40	<2	<0.2	<100	<100	7.2/3.2	<10	<0.2	<0.2	48
Trichloroethene	50	15	2300	210	12	9,000	4,700	360/UTD	1100	21	30	3200
Tetrachloroethene	1.5	1.2	<40	<2	1.0	<100	<100	<5/2.9	<10	2.3	2.3	44
cis-1,2-dichloroethene	1.3	<0.5	52	4.4	0.25	170	100	7.5/5.9	12	0.94	0.61	140
1,1-Dichloroethene	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/4.5	<10	<0.2	<0.2	35
Carbon Tetrachloride	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/2.0	<10	<0.2	<0.2	5.3
1,1,2-Trichloroethane	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	5.3
1,2-Dichloroethane	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	2.0
Benzene	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	2.7
trans-1,2-Dichloroethene	<0.5	0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	1.1

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

**RESULTS OF GROUNDWATER MONITORING
FIRST AND SECOND QUARTERS 1995**

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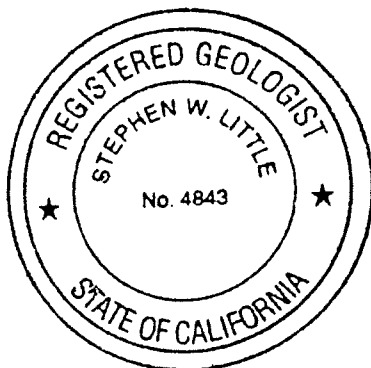
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1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the first and second quarters of 1995 was conducted at the AlliedSignal Aerospace property in North Hollywood, California on March 6-10 and September 18-21, 1995, respectively, in accordance with the California Regional Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. In accordance with the RWQCB approved *Soil Gas Monitoring Summary* report prepared by Hydrologue, Inc., dated March 3, 1995, two on-site groundwater monitoring wells (GW-2 and GW-3) and four off-site (located on Kaiser Permanente Property) groundwater monitoring wells (GW-7 through GW-10) were sampled during the two groundwater monitoring events. Groundwater monitoring well GW-1, located on site, was not sampled during these monitoring episodes. This well was damaged during the remedial activities conducted as a part of on-site treatment of shallow soil impacted by Total Petroleum Hydrocarbons (TPH).

During the period between March 6 and September 18, 1995, groundwater levels increased between 9.55 feet (groundwater monitoring well GW-6) and 13.98 feet (groundwater monitoring well GW-9). Groundwater levels beneath the Site and the adjacent Kaiser property increased in groundwater monitoring wells GW-2, GW-3, GW-4, GW-6, GW-8 and GW-9 between 0.23 feet (groundwater monitoring well GW-4) and 3.45 feet (groundwater monitoring well GW-6) during the period between December 8, 1994 and March 6, 1995. The groundwater levels in groundwater monitoring wells GW-5, GW-7 and GW-10 decreased between 0.34 feet (GW-7) and 0.60 feet (GW-10) over the same period. Based on the groundwater level measurements obtained on January 17, 1995, the instantaneous groundwater flow direction was northeasterly beneath the western portion of the Site and the central portion of the Kaiser property, and north/northwesterly beneath the eastern portion of the Home Depot property. The groundwater level measurements collected on February 28, 1995 indicated that the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. Based on the groundwater level measurements obtained on March 6, 1995, the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. The instantaneous groundwater flow direction was southeasterly beneath the Site, the Kaiser property and the Home Depot property based on the September 18, 1995 measurements. Determination of an average groundwater flow direction based on the groundwater contours in a transient system such as the one present beneath the Site is questionable.

Consistent with regional data, nitrate was detected in the first quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 through GW-10 and from second

quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL). The compound Trichloroethene (TCE) was detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 and in the second quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-10 at concentrations above the DHS MCL. The compound Tetrachloroethene (PCE) was detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-3 and GW-9 and from the second quarter 1995 groundwater sample obtained from groundwater monitoring well GW-2 at concentrations above the DHS MCL. The Carbon Tetrachloride (CT) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-8 and GW-9; the cis-1,2-Dichloroethene (cis-1,2-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-3, GW-7 and GW-10; the 1,1-Dichloroethene (1,1-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7; and the 1,1-Dichloroethane (1,1-DCA) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 were all above their respective DHS MCLs during the March 1995 groundwater sampling event. CT concentrations detected in groundwater samples obtained from groundwater monitoring wells GW-3 and GW-7 were also above the DHS MCL during the second quarter 1995 groundwater sampling episode. All other Volatile Organic Compounds (VOCs) detected in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 during the first and second quarter 1995 sampling events were either non-detect or present at concentrations below their respective DHS MCLs.

During the last eight groundwater sampling events, concentrations of TCE in groundwater generally increased from November 1993 to February 1994, but subsequently decreased in several of the groundwater monitoring wells between February/March 1994 and May 1994. TCE concentrations again increased in groundwater samples collected from all the groundwater monitoring wells between May 1994 and August/September 1994 and then decreased in groundwater samples collected from the groundwater monitoring wells between August/September 1994 and November/December 1994. TCE concentrations increased in groundwater samples obtained from all the groundwater monitoring wells between November/December 1994 and March 1995 and then decreased between March and September 1995. For example, the TCE concentrations detected in groundwater samples collected from groundwater monitoring wells GW-1, GW-2, and GW-7 through GW-10 increased between one and two orders of magnitude from the November 1993 groundwater sampling event to the February 1994 groundwater sampling event, whereas the TCE concentrations in groundwater samples collected from groundwater monitoring well GW-3 remained consistent during this period. However, the TCE concentrations detected in groundwater samples from all six groundwater monitoring wells decreased as much as two orders of magnitude from the February/March 1994 sampling episode to the May 1994 sampling event. The concentrations of TCE detected in groundwater samples obtained from

all six groundwater monitoring wells increased as much as three orders of magnitude from the May 1994 sampling event to the August/September 1994 sampling episodes. In addition, the concentrations of TCE detected in groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-8 through GW-10 decreased up to two orders of magnitude from the August/September 1994 sampling events to the November/December 1994 sampling episodes, whereas the TCE concentration in groundwater samples collected from groundwater monitoring well GW-7 increased one order of magnitude during the same period. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 increased up to two orders of magnitude from the November/December 1994 sampling episodes to the March 1995 sampling event, whereas the TCE concentration in groundwater samples collected from groundwater monitoring well GW-5 decreased slightly over the same period. Finally, the concentrations of TCE detected in groundwater samples obtained from all six groundwater monitoring wells decreased up to two orders of magnitude from the March 1995 sampling event to the September 1995 sampling episodes. An off-site source together with groundwater extraction from production wells in the North Hollywood and Rinaldi-Toluca well fields may account for the fluctuation in TCE concentrations detected in groundwater samples collected from the groundwater monitoring wells at the Site.

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - March 6-10, 1995
(all results in micrograms per liter)

Organic Constituent	GW-2 (03/09/95)	GW-3 (03/09/95)	GW-7 (03/10/95)	GW-8 (03/09/95)	GW-9 (03/09/95)	GW-10 (03/10/95)	Equipment Blank (03/09/95)	Trip Blank (03/09/95)
TPH	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1000
1,1,1,2-Tetrachloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,1,1-Trichloroethane	11/10	30/21	51/43	1.6	3.1/3.2	<10	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,1-Dichloroethane	0.9	12/9.3	37	<0.2	<0.2	<10	<0.2	<0.2
1,1-Dichloroethene	10/8.5	22/15	22	2.0	2.2/2.6	<10	<0.2	<0.2
1,1-Dichloropropene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2,3-Trichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2,3-Trichloropropane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2,4-Trimethylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
1,2-Dibromoethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dichloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dichloropropane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,3,5-Trimethylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,3-Dichloropropane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
2,2-Dichloropropane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
2-Chlorotoluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
4-Chlorotoluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromochloromethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromodichloromethane	0.3	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromomethane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
Benzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromoform	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
Chlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Carbon Tetrachloride	3.7	2.8	<20	2.0	1.4/1.6	<10	<0.2	<0.2
Chloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Chloroform	2.3	5.7/10	64/39	1.0	1.1/0.7	<10	<0.2	<0.2
Chloromethane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 824.2) - March 6-10, 1995
(all results in micrograms per liter)

Organic Constituent	GW-2 (03/09/95)	GW-3 (03/09/95)	GW-7 (03/10/95)	GW-8 (03/09/95)	GW-9 (03/09/95)	GW-10 (03/10/95)	Equipment Blank (03/09/95)	Trip Blank (03/09/95)
Dibromochloromethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Dibromomethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Dichlorodifluoromethane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
Ethylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Freon 113	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Hexachlorobutadiene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Isopropylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Methylene Chloride	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
N-Butylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
N-Propylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Naphthalene	<1	<5	<100	<1	<1	<50	<1	<1
Styrene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Trichloroethene	250/180	1300/810	4700/5500	190/170	71/87	1100	<0.2	<0.2
Trichlorofluoromethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Toluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Tetrachloroethene	2.7	6.6	<20	2.5/3.6	6.0/9.2	<10	<0.2	<0.2
Vinyl Chloride	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
cis-1,2-Dichloroethene	1.1	13/9.8	70/67	1.2	<0.2	12	<0.2	<0.2
cis-1,3-Dichloropropene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
m- & p-xylenes	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
o-xylene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
p-Isopropyl toluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
sec-Butylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
trans-1,3-Dichloropropene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
tert-Butylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2

TPH: Total Petroleum Hydrocarbons.
<0.2 Less than the detection limit of 0.2.

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - September 18-21, 1995
(all results in micrograms per liter)

Organic Constituent	GW-2 (09/21/95)	GW-3 (09/21/95)	GW-7 (09/21/95)	GW-8 (09/20/95)	GW-9 (09/20/95)	GW-10 (09/21/95)	Equipment Blank (09/21/95)	Trip Blank (09/21/95)
TPH	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000
1,1,1,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,1-Trichloroethane	<0.2	<0.2	1.6	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane	0.59	0.33	0.67	0.40	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene	<0.2	0.63	1.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichloropropane	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dibromochloroethane	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3,5-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
4-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromomethane	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Benzene	<0.2	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Bromoform	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	<0.2	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5
Chloroethane	<0.2	0.84	1.6	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	0.44	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloromethane	<0.5	0.50	1.3	0.47	<0.2	<0.2	<0.2	<0.2
		<0.5	<0.5	<0.5	<0.5	0.42	0.31	<0.2
				<0.5	<0.5	<0.5	<0.5	<0.5

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) - September 18-21, 1995
(all results in micrograms per liter)

Organic Constituent	GW-2 (09/21/95)	GW-3 (09/21/95)	GW-7 (09/21/95)	GW-8 (09/20/95)	GW-9 (09/20/95)	GW-10 (09/21/95)	Equipment Blank (09/21/95)	Trip Blank (09/21/95)
Dibromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromomethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichlorodifluoromethane	3.3	1.6	0.64	3.9	<0.5	1.5	<0.5	<0.5
Ethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Freon 113	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Hexachlorobutadiene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Isopropylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	<1	<1	<1	<1	<1	<1	<1	<1
N-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
N-Propylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene	5.1	18	110	6.4	0.47	21	<0.2	<0.2
Trichlorofluoromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tetrachloroethene	5.0	2.2	1.6	4.9	0.48	2.3	<0.2	<0.2
Vinyl Chloride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	3.4	1.3	1.4	2.0	0.37	0.94	<0.2	<0.2
cis-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
m- & p-xylenes	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
o-xylene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p-Isopropyl toluene	<0.2	0.48	0.51	<0.2	<0.2	<0.2	<0.2	<0.2
sec-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
tert-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

TPH: Total Petroleum Hydrocarbons,
<0.2 Less than the detection limit of 0.2.

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TABLE 5 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2)
(all results in micrograms per liter)

Organic Constituent	GW-9 (11/21/95)	GW-9 (12/19/95)	GW-10 (11/21/95)	GW-10 (12/20/95)	Equipment Blank (11/21/95)	Equipment Blank (12/18/95)	Trip Blank (11/21/95)	Trip Blank (12/18/95)	Field Blank (11/21/95)	Field Blank (12/18/95)	Pump Equipment Blank (12/20/95)
TPH	<2,000	<2,000	<2,000	<2,000	NA	NA	NA	NA	NA	NA	<NA
1,1,1,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.38
1,1,1-Trichloroethane	<0.2	5.6	<0.2	48	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2	5.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane	<0.2	<0.2	<0.2	11	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.34
1,1-Dichloroethene	<0.2	5.2	<0.2	35	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,4-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	<0.2	<0.2	<0.2	2.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3,5-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
4-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	<0.2	<0.2	<0.2	2.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5
Bromoform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5
Carbon Tetrachloride	<0.2	1.2	<0.2	5.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	0.38	1.5	0.32	90	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.65
Chloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

TABLE 5 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 524.2) (all results in micrograms per liter)											
Organic Constituent	GW-9 (11/21/95)	GW-9 (12/19/95)	GW-10 (11/21/95)	GW-10 (12/20/95)	Equipment Blank (11/21/95)	Equipment Blank (12/18/95)	Trip Blank (11/21/95)	Trip Blank (12/18/95)	Field Blank (11/21/95)	Field Blank (12/18/95)	Pump Equipment Blank (12/20/95)
Dibromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromomethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichlorodifluoromethane	1.4	2.3	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Freon 113	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Hexachlorobutadiene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Isopropylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	<1	<1	<1	<0.2	<1	<1	<1	<1	<1	<1	<1
N-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
N-Propylbenzene	<0.2	<0.2	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	<1	<1	<1	<0.2	<1	<1	<1	<1	<1	<1	<1
Styrene	<0.2	<0.2	<0.2	3200	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene	5.8	97	30	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichlorofluoromethane	<0.2	<0.2	<0.2	<0.2	<0.2	0.23	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.2	<0.2	<0.2	44	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tetrachloroethene	1.0	13	2.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.8
Vinyl Chloride	<0.2	<0.2	<0.2	140	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	0.54	0.95	0.61	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.84
cis-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
m- & p-xylenes	<0.4	<0.2	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
o-xylene	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p-Isopropyl toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.97
sec-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	<0.2	<0.2	1.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
tert-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

TPH: Total Petroleum Hydrocarbons.
 <0.2 Less than the detection limit of 0.2.
 NA: Not Analyzed
 * Includes both low and high dilution results.

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TABLE 6 - HISTORIC GROUNDWATER SURFACE ELEVATIONS
(all elevations in feet above mean sea level)

Date	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10
06/16/94	516.10	516.87	516.58	515.60	515.77	515.10	516.75	517.55	517.62	517.13
07/19/94	516.90	517.82	517.41	516.37	516.44	516.62	517.38	518.50	518.65	517.80
08/15/94	509.35	510.63	509.39	509.79	509.14	513.61	508.39	512.34	509.05	506.04
09/07/94	502.82	504.08	502.57	504.16	503.19	508.52	501.42	502.98	501.49	500.74
10/11/94	495.77	496.42	495.19	497.61	496.50	501.98	494.20	495.08	493.67	493.46
11/21/94	493.63	493.61	493.69	493.99	495.75	495.23	493.84	492.87	492.40	493.58
12/08/94	496.12	496.26	496.41	496.50	497.76	496.05	496.54	495.87	495.69	496.46
01/17/95	NM	501.61	501.59	501.24	502.11	500.20	501.76	501.83	501.84	501.91
02/28/95	NM	498.14	497.53	497.52	498.05	500.09	497.02	497.59	496.79	496.72
03/06/95	NM	497.27	496.69	496.73	497.28	499.50	496.20	496.70	495.95	495.86
09/18/95	NM	509.52	508.93	508.45	506.91	509.05	508.74	510.06	509.93	509.09
11/19/95	514.40	515.13	514.78	514.47	513.08	514.40	514.72	515.41	515.16	514.87
12/18/95	512.26	513.19	512.67	512.77	511.00	513.90	512.28	512.94	512.35	512.19

NC: Not calculated.
NM: Not measured.

TABLE 7 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date													
	08/21/91	09/17/91	01/14/92	03/16/92	05/19/92	08/11/92	01/14/93	03/02/93	06/01/93	12/07/93	02/18/94	05/16/94	08/16/94	11/20/95
Chloride	44.7/46.9	38.5	31.0	24.2	29.0	37.0	22	27	27	25	27	26	40	24
Sulfate	74.7/67.1	69.3	59.3	50.8	59.4	64.0	55	59	55	56	56	65	72	52
Carbonate Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<10
Bicarbonate Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210	210	250	210
Hydroxide Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<10
Total Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210	210	250	210
Calcium	113/111	103	81.5	79.8	88.9	85	86	86	89	91	95	92	100	73
Magnesium	24.9/24.7	23.6	18.3	17.1	17.8	19.9	18	17	19	19	20	19	24	16
Potassium	ND/ND	ND	ND	ND	ND	ND	3.9	3.7	3.8	3.8	5.2	3.9	4.8	4.9
Sodium	24.5/23.9	23.6	23.6	22.7	24	26.1	25	24	26	27	26	26	29	19
TDS	551/514	580	437	441	440	581	400	360	400	410	420	430	500	410
Turbidity	ND/ND	0.38	0.40	0.60	0.20	0.2	0.68	1.0	2.4	1.42	3.1	3.9	<0.1	8.6
Nitrate	18/17.8	17.7	10.5	10.9	14.9	17.3	45	42	38	36	49	37	75	40
Nitrite	ND/ND	ND	3.9	ND	ND	ND	<0.05	<0.05	<0.05	<0.1	<0.1	<0.2	<0.2	NA
Ammonia Nitrogen	0.48/0.35	0.51	ND	0.20	ND	ND	<0.1	0.21	<0.1	0.38	<0.1	<0.1	0.36	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 3 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2

(all results in milligrams per liter, except turbidity)

Inorganic Constituent	9/17/91	1/16/92	3/17/92	5/20/92	8/10/92	1/14/93	3/2/93	6/2/93	8/19/93	11/30/93	2/16/94	5/18/94	8/16/94	12/12/94	3/9/95	9/21/95	11/19/95	12/19/95
Chloride	34.8/33.4	28.9	25.2	26.4	24.3	31	30	30	28	31	32	35	36	35	25	40	26	18
Sulfate	63.7/61.9	57.3	48.5	59	52.6	58	55	55	65	56	56	61	64	58	60	61	42	39
Carbonate Alkalinity	ND/ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	248/248	172	197	261	264	210	210	210	220	280	290	240	290	250	250	260	200	170
Hydroxide Alkalinity	ND/ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	248/248	172	197	261	264	210	210	210	220	280	290	240	290	250	250	260	200	170
Calcium	96.9/100	79.2	85	89	87.6	79	98	84	95	86	130	100	110	95	93	110	77	73
Magnesium	23.1/17.8	17.8	19	20.1	20.0	17	20	18	20	19	27	22	25	21	20	25	17	15
Potassium	ND/ND	ND	ND	ND	ND	3.3	3.9	3.4	3.7	3.3	4.4	4.2	4.7	3.9	4.0	4.7	5.2	4.6
Sodium	23.5/24.1	25.2	27.9	23.5	25.2	23	26	24	25	24	27	26	26	23	23	29	20	17
TDS	541/534	443	369	441	485	430	400	440	440	460	550	420	490	500	460	530	400	350
Turbidity	3.8/4.0	3.0	1.40	0.20	0.5	19	23	8.7	39	4.4	21	180	4.5	130	23	1.1	15	7.4
Nitrate	14.5/14.4	19.9	11.4	10.6	9.1	69	64	58	66	61	60	68	55	65	35	55	38	47
Nitrite	ND/ND	3.5	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA
Ammonia Nitrogen	ND/ND	ND	2.7	ND	ND	<0.1	0.11	<0.1	<0.1	<0.1	<0.1	<0.1	0.63	<0.1	<0.1	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 9 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3

(all results in milligrams per liter, except turbidity)

Inorganic Constituent		Sample Data																	
		09/17/91	01/16/92	03/16/92	05/19/92	08/12/92	01/14/93	3/02/93	6/02/93	8/19/93	11/30/93	02/16/94	05/18/94	08/16/94	12/13/94	03/09/95	09/21/95	11/20/95	12/19/95
Chloride		36.3	33.5/34	30.3/39	33.3/32	36.0	33	28	33	26	27	28	31	38	35	39	29	19	20
Sulfate		68.5	61.1/54	52.1/59	61.9/61.9	66.1	54	53	52	56	50	52	57	67	57	77	49	32	38
Carbonate Alkalinity		ND	ND/ND	qND/ND	ND/ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity		244	208/201	232/228	245/253	248	190	190	200	200	210	210	190	260	240	290	220	150	200
Hydroxide Alkalinity		ND	ND/ND	ND/ND	ND/ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity		244	208/201	232/228	245/253	248	190	190	200	200	210	210	190	260	240	290	220	150	200
Calcium		107	81.4/101	86.6/96.7	88.6/92.4	110	89	86	90	91	82	100	98	100	110	110	83	61	71
Magnesium		24.5	19.8/21.7	19.7/22.1	20.1/21.0	23.6	19	18	19	19	18	21	20	24	22	24	19	13	15
Potassium		ND	ND/4	ND/4	ND/ND	ND	3.9	3.5	3.9	3.8	3.6	4.2	4.6	4.9	4.3	5.1	5.9	5.7	7.2
Sodium		25.1	24.8/26.8	25.1/29.5	24.4/25.5	23.8	26	24	26	25	24	25	26	27	25	27	23	9.7	18
TDS		521	477/330	429/450	455/492	1,070	420	360	400	380	500	460	360	500	490	550	430	300	370
Turbidity		ND	0.50/0.15	0.40/0.20	0.20/0.20	0.20	4.3	0.85	2.0	8.9	4.7	27	160	3.4	30	2.3	13	12	5.3
Nitrate		16.3	12.4/15.2	13.9/15.8	15.7/15.6	15.5	66	60	56	66	57	60	67	74	64	70	48	34	38
Nitrite		ND	4.4/ND	ND/ND	ND/ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA
Ammonia Nitrogen		ND	ND/ND	0.12/ND	ND/ND	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.10	<0.1	0.61	0.12	<0.1	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

003103

TABLE 10 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7

(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date									
	09/08/93	11/29/93	02/16/94	05/18/94	08/15/94	12/11/94	03/10/95	09/21/95	11/22/95	12/20/95
Chloride	27	27	27	26	49	31	41	32	31	18
Sulfate	57	53	66	62	130	58	77	57	57	44
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	180	190	260	190	330	220	360	220	230	180
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	180	190	260	190	330	220	360	220	230	180
Calcium	96	72	120	80	180	94	140	89	96	92
Magnesium	21	18	26	17	39	21	30	20	21	19
Potassium	4	3.7	4.2	3.6	5.7	4.0	4.5	4.0	3.6	3.1
Sodium	29	26	30	27	35	26	27	26	25	21
TDS	420	860	550	350	750	460	650	460	450	320
Turbidity	7.0	<1.0	7.8	5.1	0.30	1.5	0.80	0.9	2.5	13
Nitrate	63	49	71	44	100	64	68	55	58	37
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<1	<0.2	NA	NA
Ammonia Nitrogen	<0.02	<1.0	0.12	<0.1	0.28	<0.1	0.11	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

003104

TABLE 11 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-8

(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date									
	09/09/93	11/29/93	02/16/94	05/17/94	08/15/94	12/10/94	03/09/95	09/20/95	11/21/95	12/19/95
Chloride	34	35	34	38	40	34	36	35	29	25
Sulfate	60	56	55	62	69	59	62	58	52	44
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	230	240	240	240	220	250	250	280	260	290
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	230	240	240	240	220	250	250	280	260	290
Calcium	110	92	110	98	90	100	130	100	88	98
Magnesium	25	23	24	21	19	22	29	25	19	22
Potassium	4.9	4.4	4.5	3.9	4.1	4.5	5.8	6.2	3.9	5.3
Sodium	29	28	28	25	25	27	35	30	26	26
TDS	500	510	500	510	450	490	500	530	480	480
Turbidity	5.0	<1.0	23	8.2	0.18	12	2.3	43	3.1	84
Nitrate	74	56	69	76	71	58	63	52	41	28
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA
Ammonia Nitrogen	0.03	<1.0	<0.1	<0.1	<0.1	0.17	<0.1	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

TABLE 12 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-9
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date									
	09/08/93	11/29/93	02/16/94	05/17/94	08/16/94	12/10/94	03/09/95	09/20/95	11/21/95	12/19/95
Chloride	26	21	31	22	30	30	38	27	28	26
Sulfate	1,000	59	58	66	69	58	67	61	60	56
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	180	190	180	190	220	220	230	210	210	220
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	180	190	180	190	220	220	230	210	210	220
Calcium	86	64	82	85	87	96	100	82	78	97
Magnesium	20	17	18	18	19	21	23	19	17	21
Potassium	4.4	3.9	3.8	4.1	4.3	4.7	4.6	4.7	3.7	4.3
Sodium	29	25	26	26	28	29	29	28	26	27
TDS	3,400	420	410	360	410	440	510	430	470	570
Turbidity	30	<1.0	1.9	2.9	0.15	17	21	13	2.6	3.3
Nitrate	45	30	41	32	65	58	85	46	48	100
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2	NA	NA
Ammonia Nitrogen	<0.02	<1.0	0.11	<0.1	<0.1	0.12	<0.1	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS:

Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

003106

TABLE 13 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-10
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date									
	09/09/93	11/29/93	02/16/94	05/18/94	08/15/94	12/11/94	03/10/95	09/21/95	11/21/95	12/20/95
Chloride	21	20	22	20	32	32	31	27	23	22
Sulfate	63	58	64	64	72	57	56	60	59	60
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Bicarbonate Alkalinity	190	200	260	190	420	240	270	220	200	410
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10	<10	<10
Total Alkalinity	190	200	260	190	420	240	270	220	200	410
Calcium	85	68	110	77	140	98	120	83	77	120
Magnesium	20	17	23	16	30	22	24	19	17	25
Potassium	4.1	3.6	4.4	3.8	5.1	4.4	4.7	4.1	3.7	3.9
Sodium	30	26	33	27	30	28	28	26	26	24
TDS	390	360	480	340	640	460	510	440	470	620
Turbidity	10	<1.0	7.2	0.52	0.41	78	5.3	0.4	1.4	6.4
Nitrate	38	25	33	27	58	64	59	46	34	38
Nitrite	ND	<1.0	<0.1	<0.1	<0.2	<0.5	<1	<0.2	NA	NA
Ammonia Nitrogen	0.02	<1.0	0.11	0.31	0.18	<0.1	<0.1	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

003107

TABLE 14 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR W-1

Sample ID	Sampling Method	Date	1,1,1-TCA	1,1-DCA	1,1-DCE	TCE	Toluene	PCE
W-1 @ 290'	AL	5/14/87	<1	<1	<1	<1	<1	<1
W-1 @ 426'	AL	5/15/87	<1	<1	<1	<1	<1	<1
W-1 @ 290'	SP	6/8/87	<1	<1	<1	<1	5*	<1
W-1 @ 420'	SP	6/11/87	<1	<1	<1	<1	7	<1

1,1,1-TCA: 1,1,1-Trichloroethane.

1,1-DCA: 1,1-Dichloroethane.

1,1-DCE: 1,1-Dichloroethene.

TCE: Trichloroethene.

PCE: Tetrachloroethene.

<1: Less than the detection limit of 1.

AL: Air Lift Pump.

SP: Submersible Pump.

*: Toluene was detected at a concentration of 2 µg/l in the trip blank samples collected on 6/8/87.

TABLE 15 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in micrograms per liter)

Organic Constituent	Sample Date															
	08/21/91	09/17/91	01/14/92	03/15/92	05/19/92	08/11/92	01/14/93	03/02/93	06/17/93	12/07/93	02/18/94	05/16/94	08/16/94	09/08/94	11/20/95	12/18/95
1,1,1-Trichloroethane	2.4/2.3	1.6	ND	5.1	3.1	4.3	<3	<0.5	3.0	0.3	1.4	<0.2	20	140	<0.2	1.2
1,1-Dichloroethane	ND/ND	ND	ND	1.3	0.75	0.51	<3	<0.5	<3	0.3	<1	<0.2	<20	<100	0.20	0.28
1,1-Dichloroethene	3.7/3.5	2.8	ND	3.1	3.3	5.5	<3	<0.5	2.9	<0.2	1.0	<0.2	<20	<100	<0.2	2.0
1,2,3-Trichlorobenzene	ND/0.75	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	<0.2	<0.2
Carbon Tetrachloride	1.1/0.70	1.3	ND	ND	0.85	1.6	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	<0.2	0.32
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	<3	1.4	<3	<0.2	<1	<0.2	<50	<300	<0.2	1.4
Trichloroethene	40/39	27	3.6	130	58	100	54	25	91	4.4	62	3.5	1,800	6,400	7.0	25
Toluene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2	<20	<100	<0.2	<0.2
Tetrachloroethene	1.2/1.0	1.1	ND	1.7	1.4	2.1	<3	2.2	4.9	2.6	1.7	1.4	<20	<100	2.0	2.1
cis-1,2-Dichloroethene	ND/ND	ND	ND	3.0	1.6	1.4	<3	0.71	5.0	2.1	3.0	1.1	36	160	1.1	1.3
m-&p-xylenes	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2	<20	<100	<0.4	<0.4
p-Isopropyl Toluene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	0.31	0.29
Benzene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100	<0.4	0.19

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 16 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2
(all results in micrograms per liter)

Organic Constituent	01/15/92	03/17/92	05/20/92	06/10/92	01/14/93	03/02/93	06/18/93	08/19/93	11/30/93	02/16/94	03/09/94	05/18/94	08/16/94	09/08/94	11/21/94	12/12/94	03/09/95	09/21/95	11/19/95	12/19/95
1,1,1-Trichloroethane	ND	2.5	12	15	0.54	<0.5	<3	<1	0.37	<20	<1	<0.2	10	12	1.5	0.5	11/10	<0.2	<0.2	2.2
1,1,1-Dichloroethane	ND	ND	0.53	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2	<10	<10	0.5	0.3	<50.9	0.59	0.50	0.53
1,1,1-Dichloroethene	ND	2.4	13	17	0.64	<0.5	<3	<1	<0.2	<20	<1	<0.2	<10	17	1.3	0.5	10/8.5	<0.2	<0.2	4.9
Carbon Tetrachloride	ND	0.57	3.3	3.8	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2	12	14	1.6	0.7	<5/3.7	<0.2	<0.2	3.8
Trichloroethene	1.6	31	83	150	24	19	48	48	29	890	60	9.6	830	810	43	13	250/180	5.1	4.8	50
Tetrachloroethene	ND	0.58	1.9	2.3	0.71	0.62	<3	<1	1.7	<20	1.4	0.99	<10	<10	2.1	1.9	<5/2.7	5.0	3.0	1.8
Toluene	ND	ND	ND	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2	<10	<10	<0.2	<0.2	<5/1.1	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	ND	ND	ND	ND	<0.5	<0.5	<3	<1	0.4	<20	<1	0.49	<10	<10	1.7	1.4	<5/1.1	3.4	2.7	1.3
Dichlorodifluoromethane	ND	ND	ND	ND	<0.5	<0.3	<3	<1	<0.2	<20	<1	<0.2	<10	<10	<0.2	0.5	<20/0.5	3.3	1.6	0.76
Bromodichloromethane	ND	ND	ND	ND	<0.5	<0.3	<3	<1	<0.2	<20	<1	<0.2	<10	<10	<0.2	<0.2	<50.3	<0.2	<0.2	<0.2
Trans-1,2-Dichloroethene	ND	ND	ND	ND	<0.5	<0.3	<3	<1	<0.2	<20	<1	<0.2	<10	<10	<0.2	<0.2	<50.2	0.20	<0.2	<0.2

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 17 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in micrograms per liter)

Organic Constituent	09/17/91	01/16/92	03/16/92	05/19/92	08/12/92	01/14/93	03/02/93	06/18/93	08/19/93	11/20/93	02/16/94	05/18/94	08/16/94	09/08/94	12/13/94	03/09/95	09/21/95	11/20/95	12/19/95
1,1,1-Trichloroethane	7.9	ND/ND	22/20	7.57/0	13	<5	<5	<50	<1	0.6	0.31	<0.2	21	83	1.4	30/21	<0.2	0.36	6.6
1,1-Dichloroethane	0.55	ND/ND	6.6/ND	1.5/1.4	ND	<5	<5	<50	<1	<0.2	<4	<0.2	<20	51	<1	12/9.3	0.33	0.64	0.98
1,1-Dichloroethene	8.5	ND/ND	11/ND	6.6/5.5	13	<5	<5	<50	<1	0.4	0.31	<0.2	22	59	1.5	22/15	0.63	0.61	11
Carbon Tetrachloride	2	ND/ND	ND/ND	1.1/ND	ND	<5	<5	<50	<1	<0.2	<4	<0.2	<20	<50	<1	<10/2.8	0.84	0.49	5.0
Trichloroethene	100	4.7/6.4	620/820	100/160	240	68	47	2200	49	15	15	6.0	1,200	4,300	36	1300/810	18	15	160
Tetrachloroethene	2.7	ND/ND	ND/ND	2.0/1.8	3.3	<5	<5	<50	2.2	1.6	<4	0.71	<20	<50	2.4	<10/6.6	2.2	1.5	2.4
cis-1,2-Dichloroethene	0.8	ND/ND	13/ND	2.1/1.9	2.8	<5	<5	<50	<1	<0.2	0.26	<0.2	<20	79	1.7	13/9.8	1.3	1.2	1.5
Toluene	ND	ND/ND	ND/ND	ND/ND	ND	<5	<5	<50	<1	0.2	<4	<0.2	<20	<50	<1	<10/4.1	<0.2	<0.2	<0.2
Naphthalene	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	150	<300	<5	<50/4.5	<1	<1	<1
Dichlorodifluoromethane	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	<20	<300	<5	<30/4.3	1.6	0.64	0.60
P-Isopropyl Toluene	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	<20	<300	<5	<10/4.1	0.48	0.40	0.44
Bromodichloromethane	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	<20	<300	<5	<10/4.1	<1	<1	0.25

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 18 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7
(all results in micrograms per liter)

Organic Constituent	Sample Date											
	09/08/93	11/29/93	02/16/94	03/08/94	05/18/94	08/15/94	09/07/94	12/11/94	03/10/95	09/21/95	11/22/95	12/20/95
1,1,1-Trichloroethane	0.19	<0.5	<40	<0.4	<0.2	<1	<1	8.1/5.2	51/43	1.6	0.34	14
1,1,2,2-Tetrachloroethane	<0.2	<0.5	<40	0.46	<0.2	<1	<1	<5/1	<40/20	<0.2	<0.2	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.5	<40	0.50	<0.2	<1	<1	<5/NA	<40/20	<0.2	<0.2	<0.2
Trichloroethene	33	7.7	3100	35	0.36	22	48	440/UTD	4700/5500	110	27	2400
Tetrachloroethene	0.21	<0.5	<40	0.72	<0.2	<1	<1	<5/2.5	<40/20	1.6	0.53	7.7
cis-1,2-dichloroethene	0.58	<0.5	.56	1.0	<0.2	2.1	2.3	8.9/6.1	70/67	1.4	0.80	45
Toluene	<0.2	<0.5	<40	<0.4	0.15	<1	<1	<5/1	<40/20	<0.2	<0.2	<0.2
1,1-Dichloroethene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	7.7/6.2	<40/22	1.2	0.48	9.2
Carbon Tetrachloride	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/1.8	<40/20	1.6	0.55	2.2
1,1-Dichloroethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/1	<40/37	0.67	0.22	14
Dichlorodifluoromethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/1	<100/20	0.64	0.56	0.44
P-Isopropyl Toluene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/1	<10/1	0.51	<0.2	0.20
1,1,2-Trichloroethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/1	<10/1	<0.2	<0.2	0.53
Benzene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/1	<10/1	<0.2	<0.2	0.59
trans-1,2-Dichloroethene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5/1	<10/1	<0.2	<0.2	0.39

ND: Not Detected.

<3: Less than the detection limit of 3.

UTD: Unable to Determine Low Detection Limit.

NA: Not Analyzed.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 19 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-8
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	09/09/93	11/29/93	02/16/94	05/17/94	08/15/94	09/07/94	12/10/94	03/09/95 *	09/20/95	11/21/95 *	12/19/95
1,1,1-Trichloroethane	<0.2	<0.5	0.25	<0.2	<0.2	<0.2	<0.2	<2/1.6	<0.2	2.2/<2	3.8
1,2,3-Trichlorobenzene	<0.2	<0.5	0.29	<0.2	<0.2	<0.2	<0.2	<2/<0.2	<0.2	<0.2/<2	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.5	0.23	<0.2	<0.2	<0.2	<0.2	<2/<0.2	<0.2	<0.2/<2	<0.2
1,2-Dichloroethane	0.17	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/<0.2	<0.2	<0.2/<2	<0.2
Carbon Tetrachloride	<0.2	<0.5	0.92	<0.2	<0.2	1.4	0.3	<2/2.0	<0.2	2.4/<2	4.2
Trichloroethene	0.80	0.9	30	1.2	28	32	8.6	190/170	6.4	170/170	310
Tetrachloroethene	0.30	0.6	0.77	0.79	0.66	0.40	2.9	2.5/3.6	4.9	5.0/4.8	7.4
cis-1,2-dichloroethene	0.22	0.6	0.5	0.55	0.39	0.30	1.7	<2/1.2	2.0	1.8/<2	2.4
1,1-Dichloroethane	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	0.3	<2/<0.2	0.40	0.26/<2	0.22
1,1-Dichloroethene	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/2.0	<0.2	2.2/<2	3.8
Dichlorodifluoromethane	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/2.0	3.9	1.4/<5	1.4

ND: Not Detected.

<3: Less than the detection limit of 3.

*: Includes both low and high dilution results.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 20 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-9
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	09/08/93	11/29/93	02/16/94	05/17/94	08/16/94	09/07/94	12/10/94	03/09/95	09/20/95	11/21/95	12/19/95
1,1,1-Trichloroethane	<0.2	<0.5	0.42	<0.2	3.1	2.4	0.5	3.1/3.2	<0.2	<0.2	5.6
1,1-Dichloroethene	<0.2	<0.5	0.4	<0.2	2.9	2.9	0.5	2.2/2.6	<0.2	<0.2	5.2
Dichlorodifluoromethane	1.0	<0.5	<0.2	<0.2	<3	<3	<0.5	<3/0.5	<0.5	1.4	2.3
Trichloroethene	2.4	3.1	16	3.4	110	75	9.4	71/87	0.47	5.8	97
Tetrachloroethene	0.28	0.5	1.1	<0.2	7.6	4.4	1.9	6.0/9.2	0.48	1.0	13
cis-1,2-dichloroethene	0.31	<0.5	<0.2	<0.2	<1	<1	0.5	<1/0.2	0.37	0.54	0.95
1,3-Dichloropropane	<0.2	<0.5	<0.2	0.48	<1	<1	<0.2	<1/0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride	<0.2	<0.5	<0.2	<0.2	<1	1.8	0.3	1.4/1.6	<0.2	<0.2	1.2

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 21 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-10
(all results in micrograms per liter)

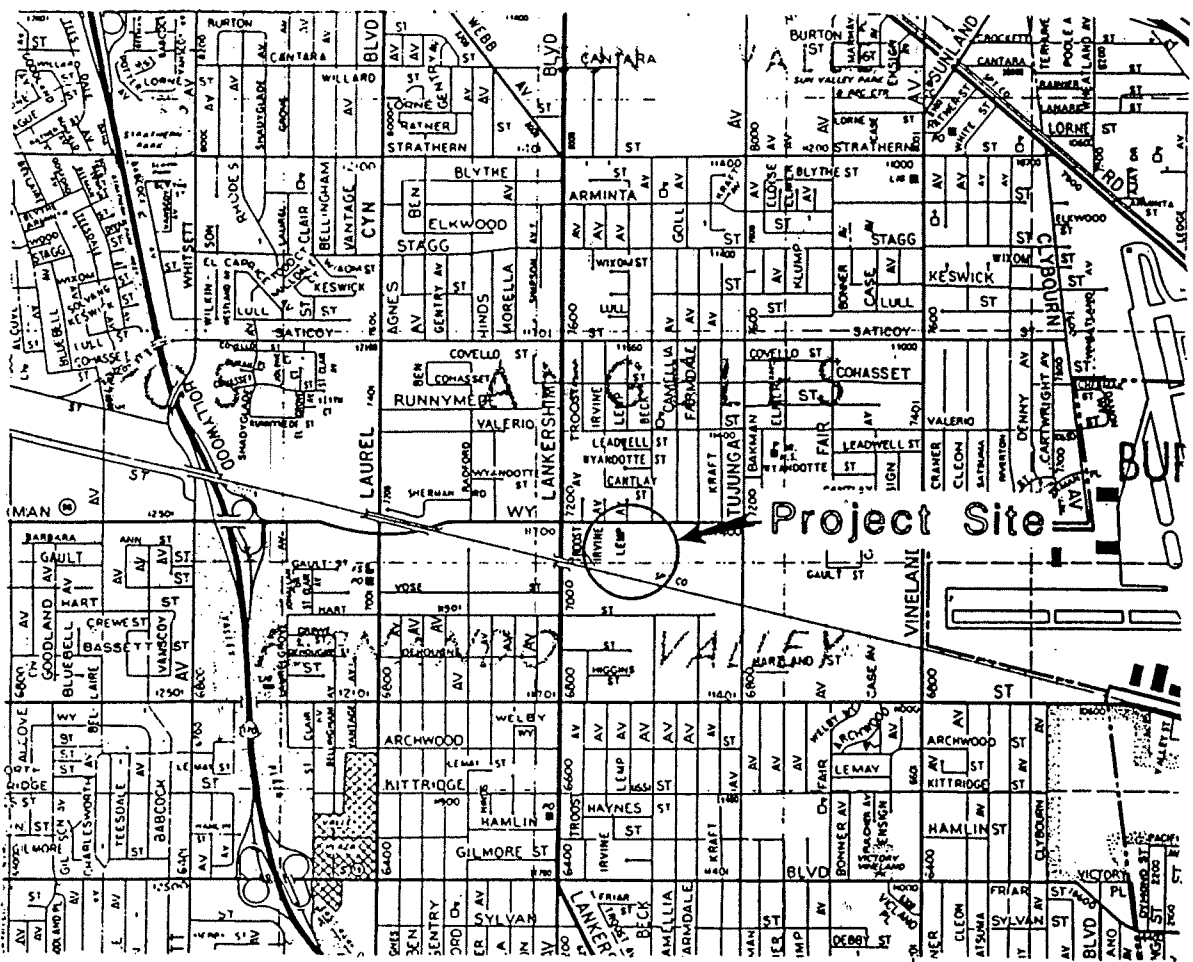
Organic Constituent	Sample Date											
	09/09/93	11/29/93	02/16/94	03/07/94	05/18/94	08/15/94	09/07/94	12/11/94	03/10/95	09/21/95	11/21/95	12/20/95
1,1-Dichloroethane	0.10	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	11
Dichlorodifluoromethane	4.2	<0.5	<40	<2	<0.2	<300	<300	<20/NA	<30	1.5	1.1	<0.5
1,1,1-Trichloroethane	0.14	<0.5	<40	<2	<0.2	<100	<100	7.2/3.2	<10	<0.2	<0.2	48
Trichloroethene	50	15	2300	210	12	9,000	4,700	360/UTD	1100	21	30	3200
Tetrachloroethene	1.5	1.2	<40	<2	1.0	<100	<100	<5/2.9	<10	2.3	2.3	44
cis-1,2-dichloroethene	1.3	<0.5	52	4.4	0.25	170	100	7.5/5.9	12	0.94	0.61	140
1,1-Dichloroethene	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/4.5	<10	<0.2	<0.2	35
Carbon Tetrachloride	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/2.0	<10	<0.2	<0.2	5.3
1,1,2-Trichloroethane	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	5.3
1,2-Dichloroethane	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	2.0
Benzene	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	2.7
trans-1,2-Dichloroethene	<0.5	0.5	<40	<2	<0.2	<100	<100	<5/<1	<10	<0.2	<0.2	1.1

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

FIGURES



Source: The Thomas Guide, Los Angeles and Orange Counties, 1987, Page 16.

Scale: 1" = 2800'

SECOR International Incorporated

3437 Empresa Dr., Suite A, San Luis Obispo, CA 93401 (805) 546-0455

CAD FILE: ASB-A057VM

PROJECT # A0057-001-01

VICINITY MAP

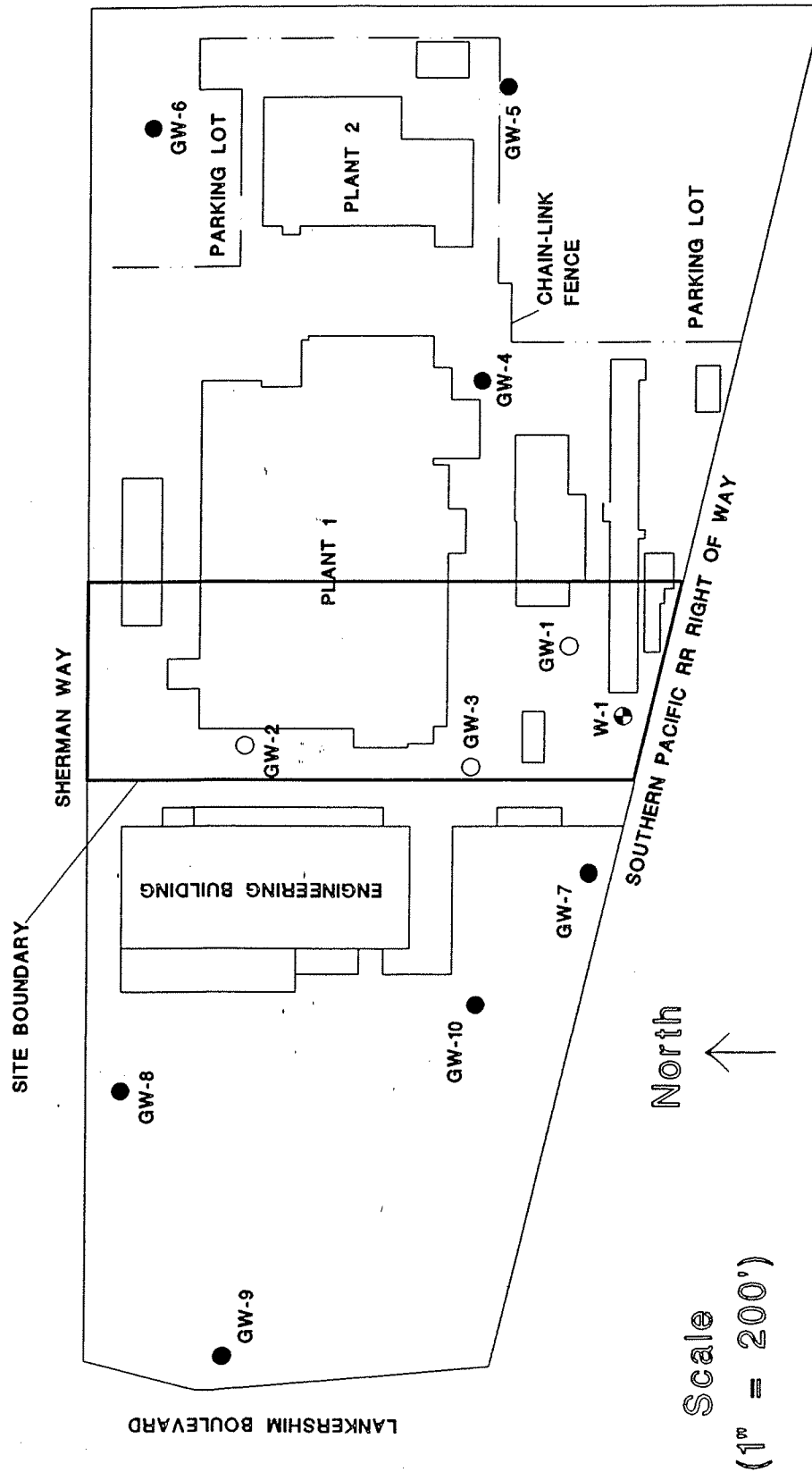
ALLIEDSIGNAL
AEROSPACE COMPANY
NORTH HOLLYWOOD FACILITY

DATE: MARCH 1995

FIGURE:

1

000117



Legend:

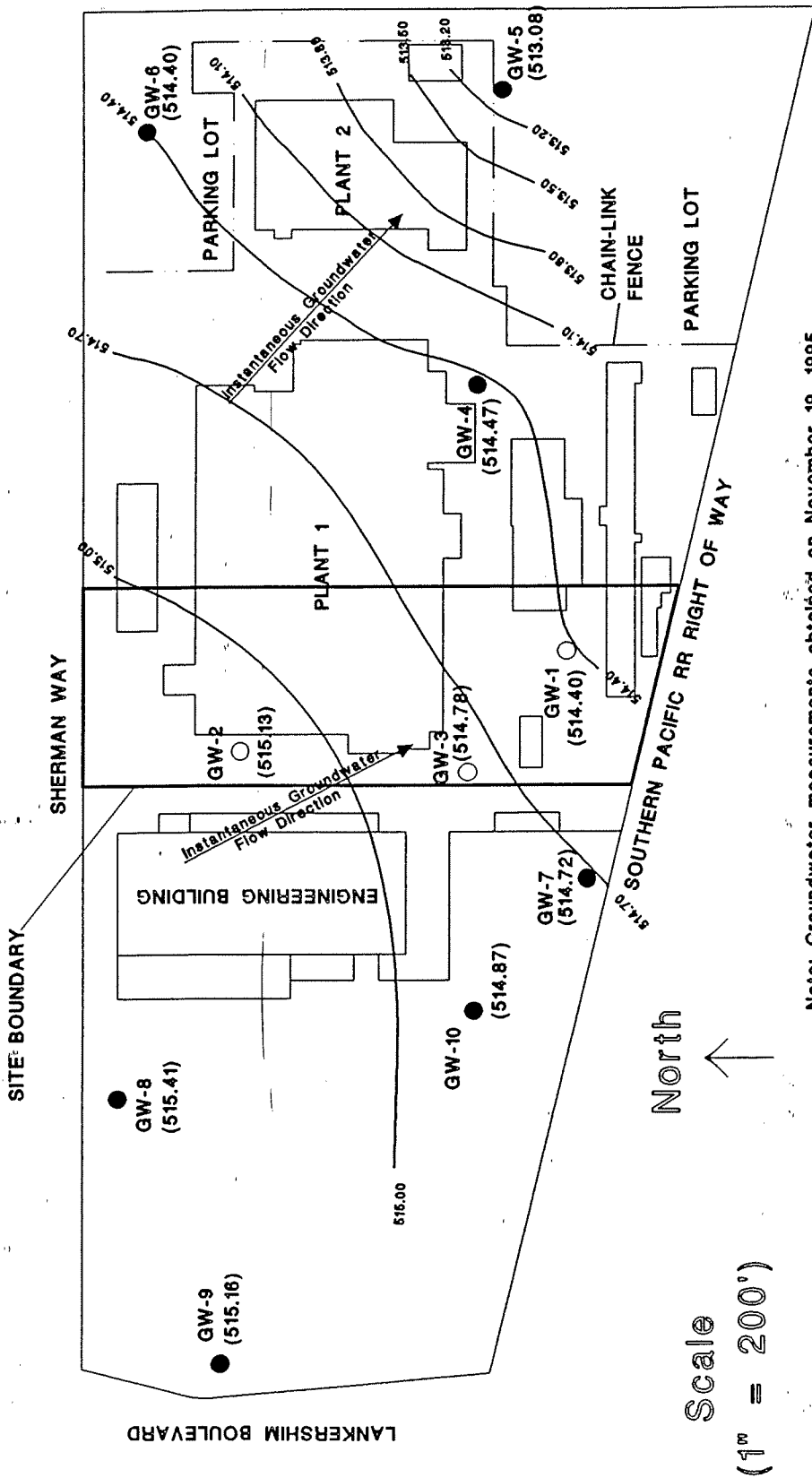
- Denotes approximate location of on-site monitoring well.
GW-2
- Denotes approximate location of off-site monitoring well.
GW-10
- Denotes approximate location of abandoned monitoring well.
W-1

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SITE MAP
FIGURE 2

File Name: AS9-A57SM22

SECOR



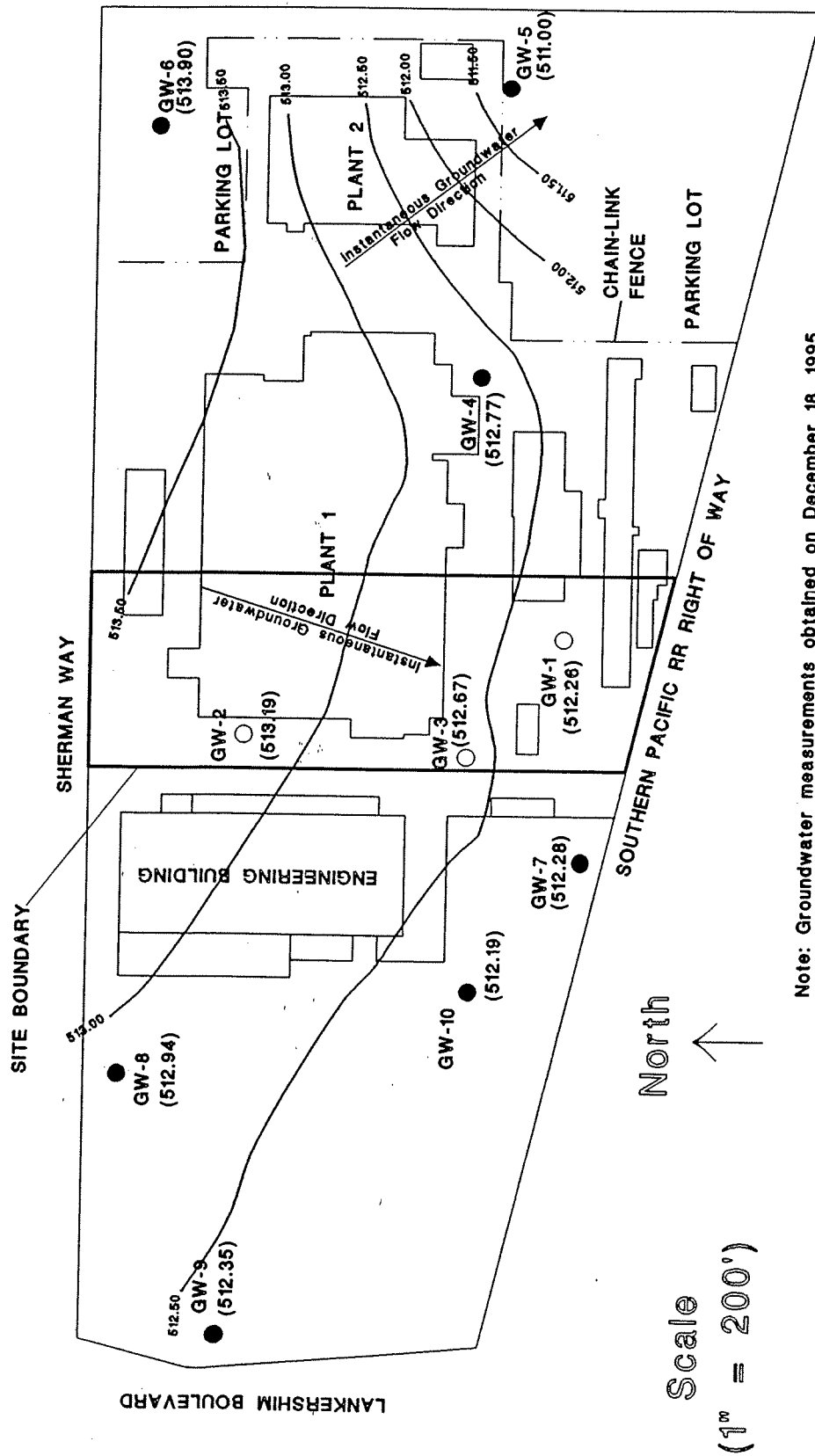
Legend:

- GW-2
Denotes approximate location of on-site monitoring well.
- GW-10
Denotes approximate location of off-site monitoring well.
- (514.72)
Denotes groundwater surface elevation in feet above mean sea level.
- 514.70 ~
Denotes groundwater contour line.

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 (11/19/95)
FIGURE 3

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File Name: AS9-A57G1195



Legend:

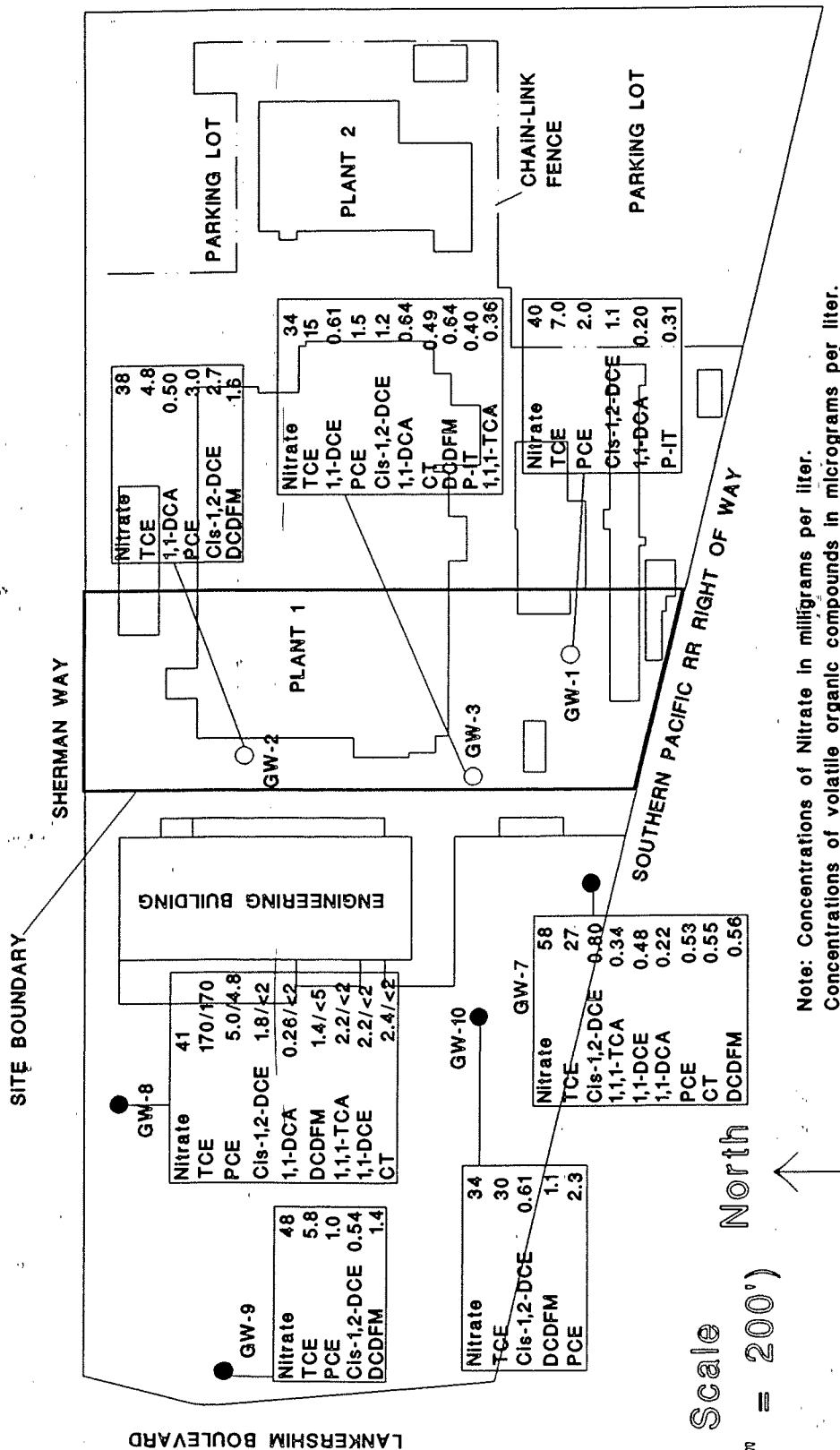
- Denotes approximate location of on-site monitoring well.
GW-2
- Denotes approximate location of off-site monitoring well.
GW-10
- (512.26) Denotes groundwater surface elevation in feet above mean sea level.
- 512.50 ~ Denotes groundwater contour line.

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 North Hollywood Facility

File Name: AS9-A57G1295

GROUNDWATER
 CONTOUR MAP
 (12/18/95)
 FIGURE 4

SECOR



Legend:

TCE	Trichloroethene
PCE	Tetrachloroethene
Cis-1,2-DCE	Cis-1,2-Dichloroethene
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCE	1,1-Dichloroethene
1,1-DCA	1,1-Dichloroethane
CT	Carbon Tetrachloride
BDCM	Bromodichloromethane
Trans-1,2-DCE	Trans-1,2-Dichloroethene
DCDFM	Dichlorodifluoromethane
P-IT	p-Isopropyl Toluene

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North Hollywood Facility

File Name: AS9-A571195N

NITRATE AND VOC
CONCENTRATION MAP
(November 19-22, 1995)
FIGURE 5

SECOR

Figure 7
Historic Groundwater Elevations in GW-1

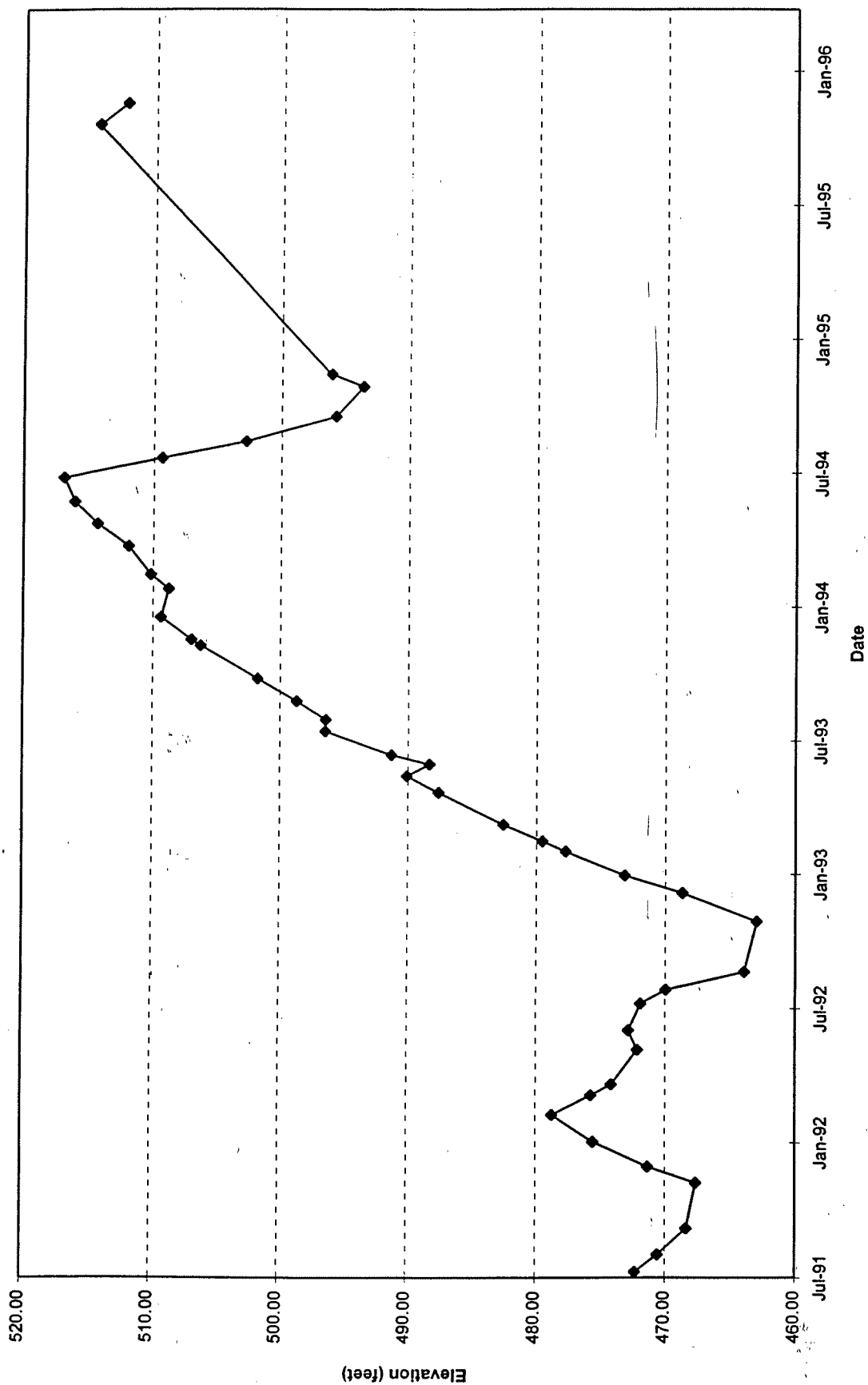


Figure 8
Historic Nitrate Concentrations in GW-1

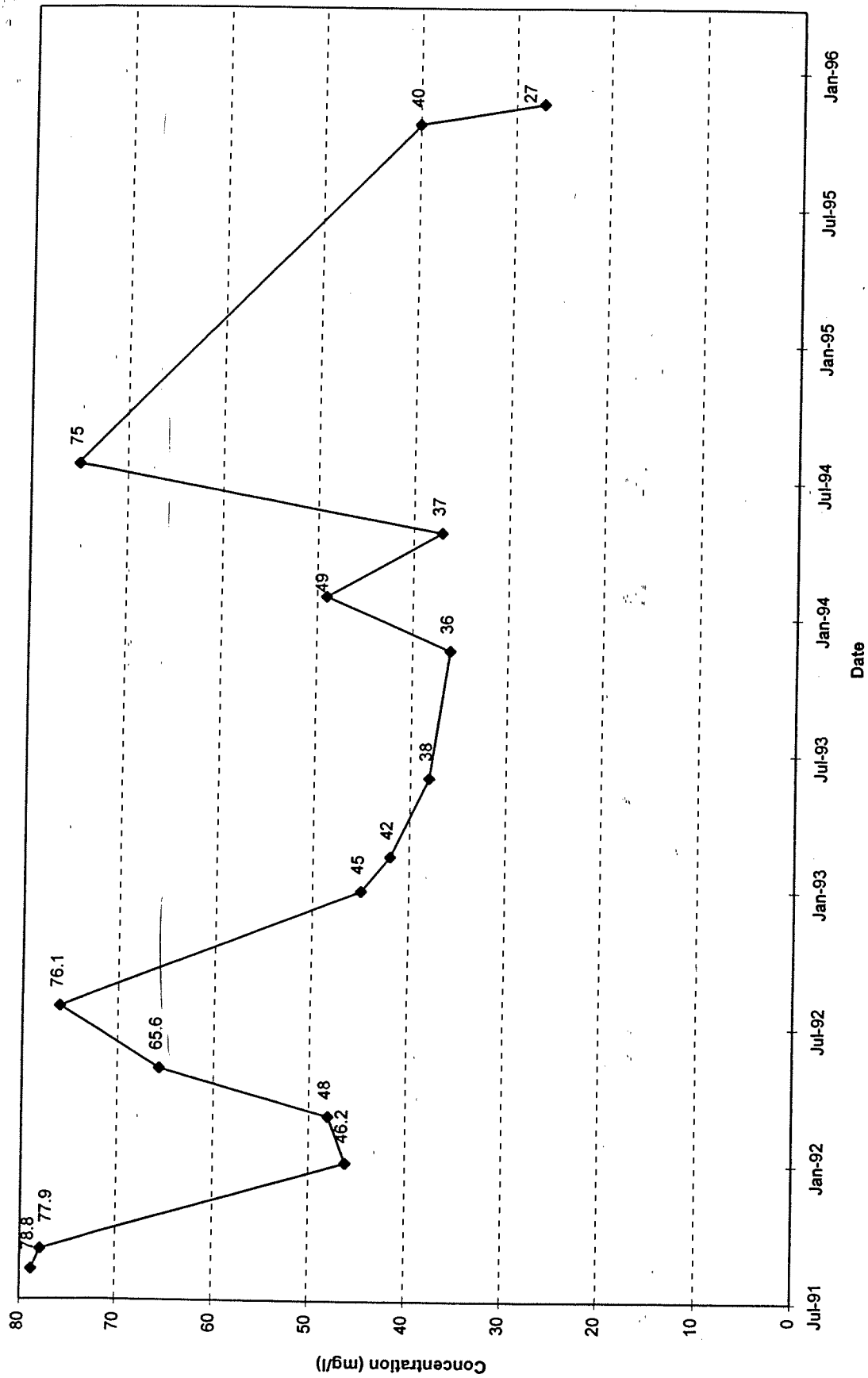


Figure 9
Historic 1,1,1-TCA Concentrations in GW-1

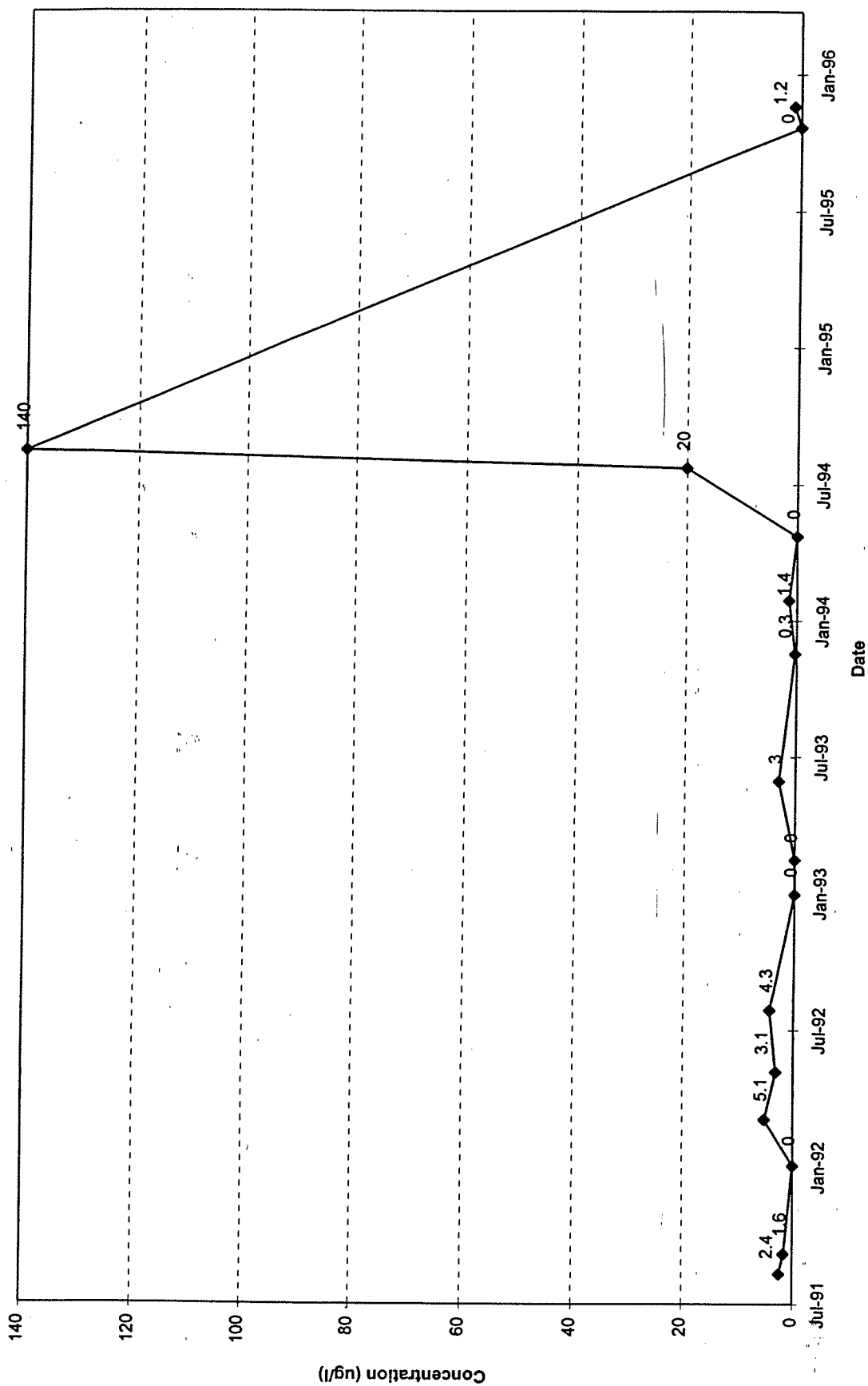


Figure 19
Historic 1,1-DCE Concentrations in GW-2

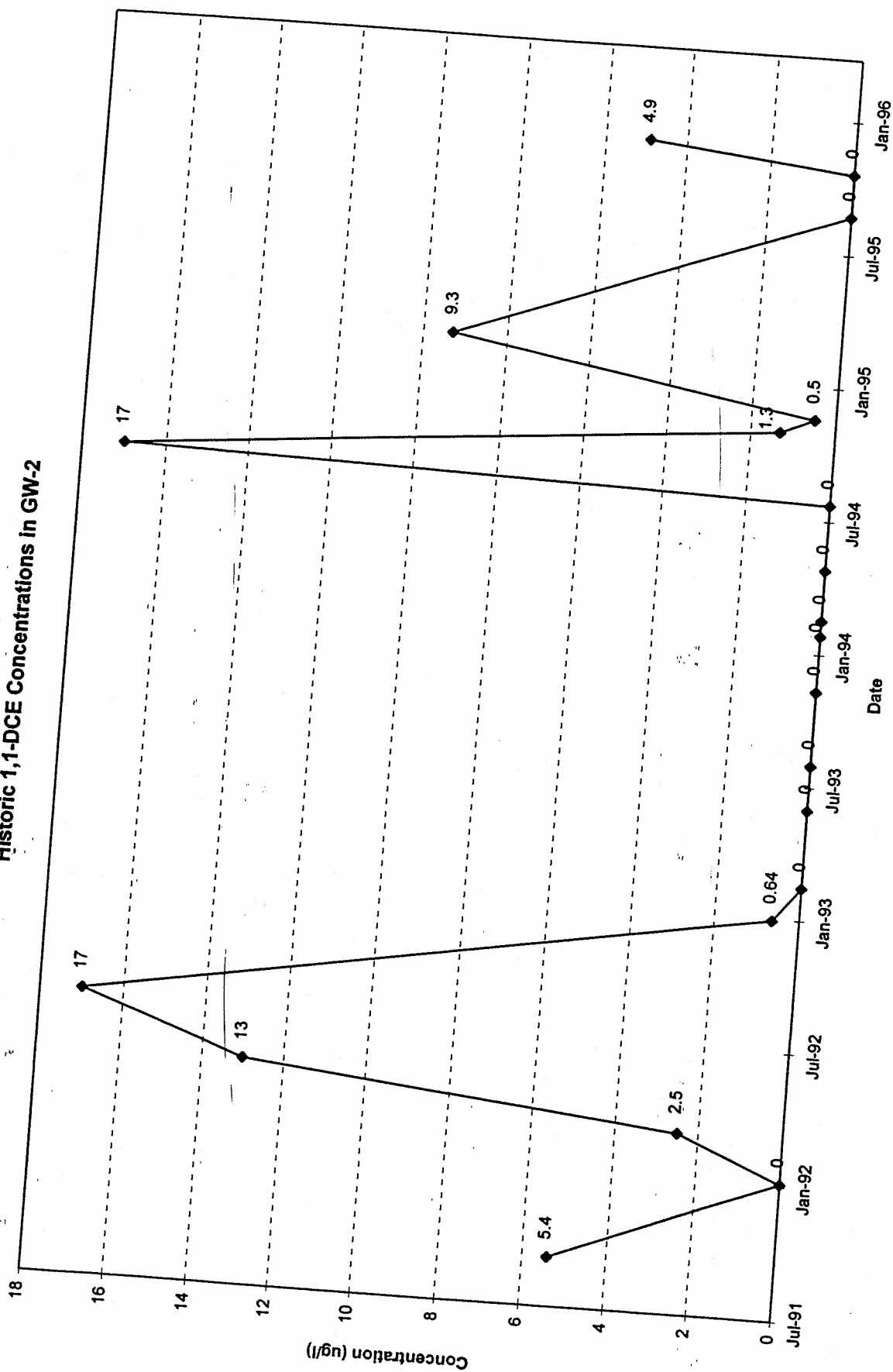


Figure 30
Historic cis-1,2-DCE Concentrations in GW-3

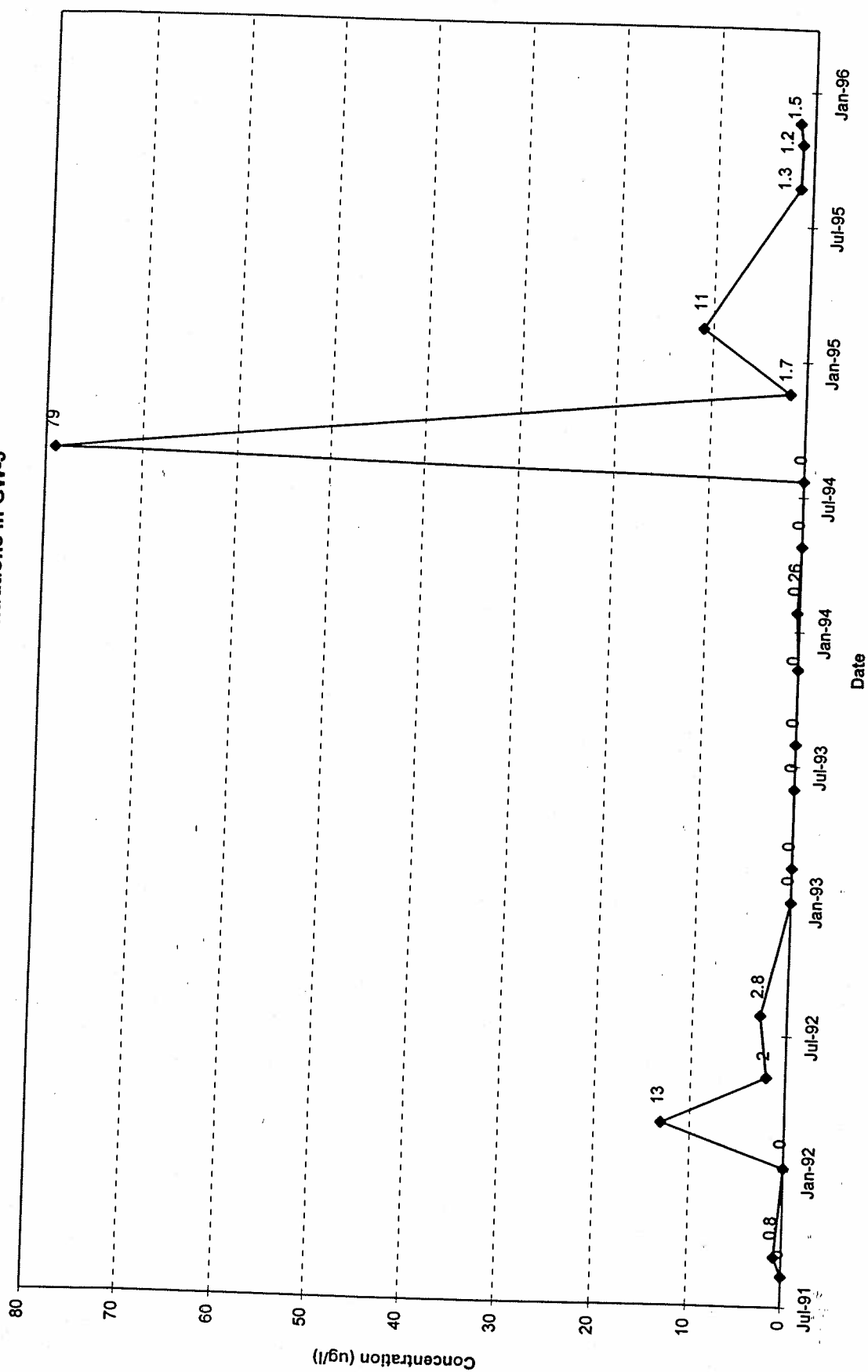


Figure 31
Historic Groundwater Elevations in GW-7

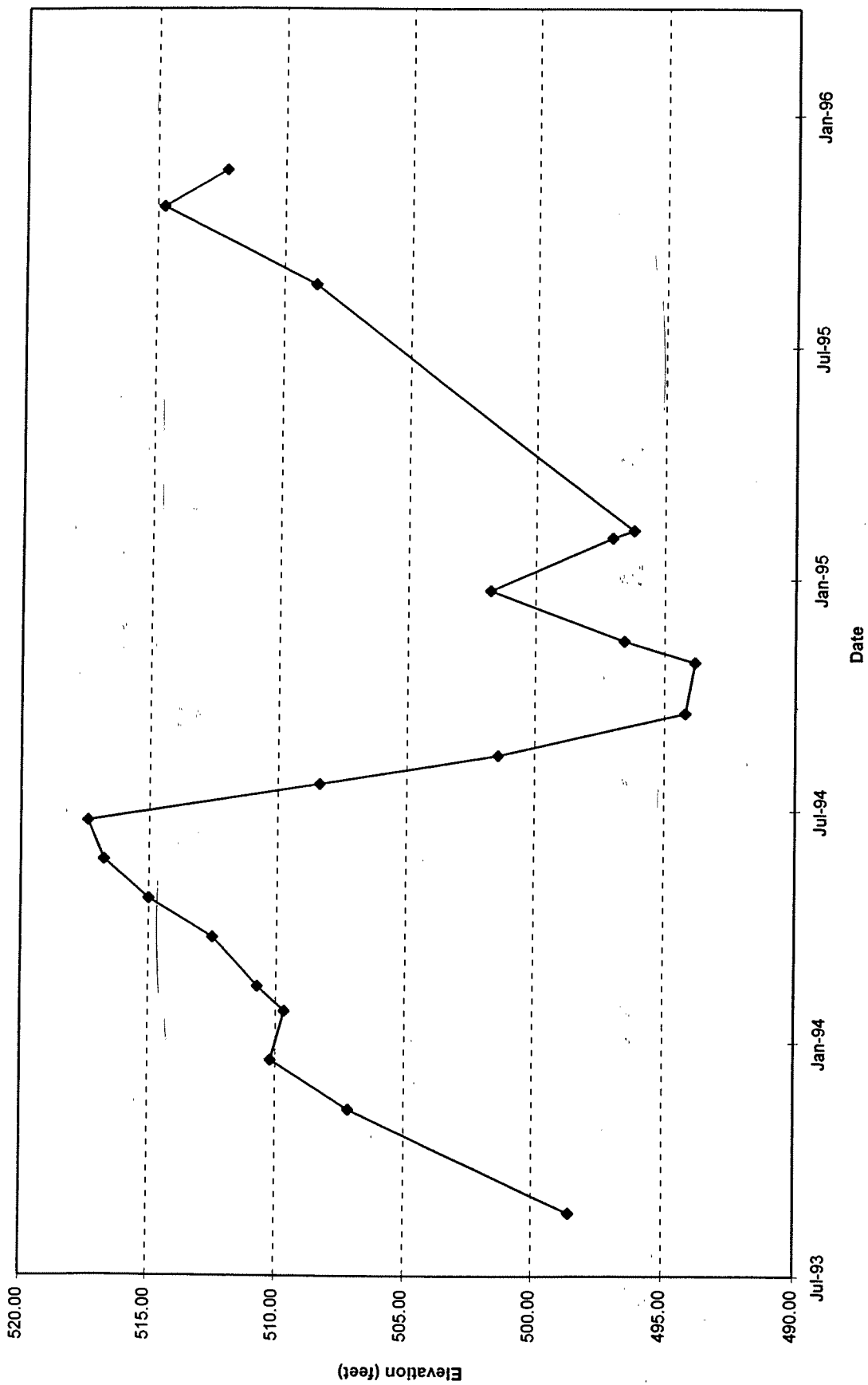


Figure 32
Historic Nitrate Concentrations in GW-7

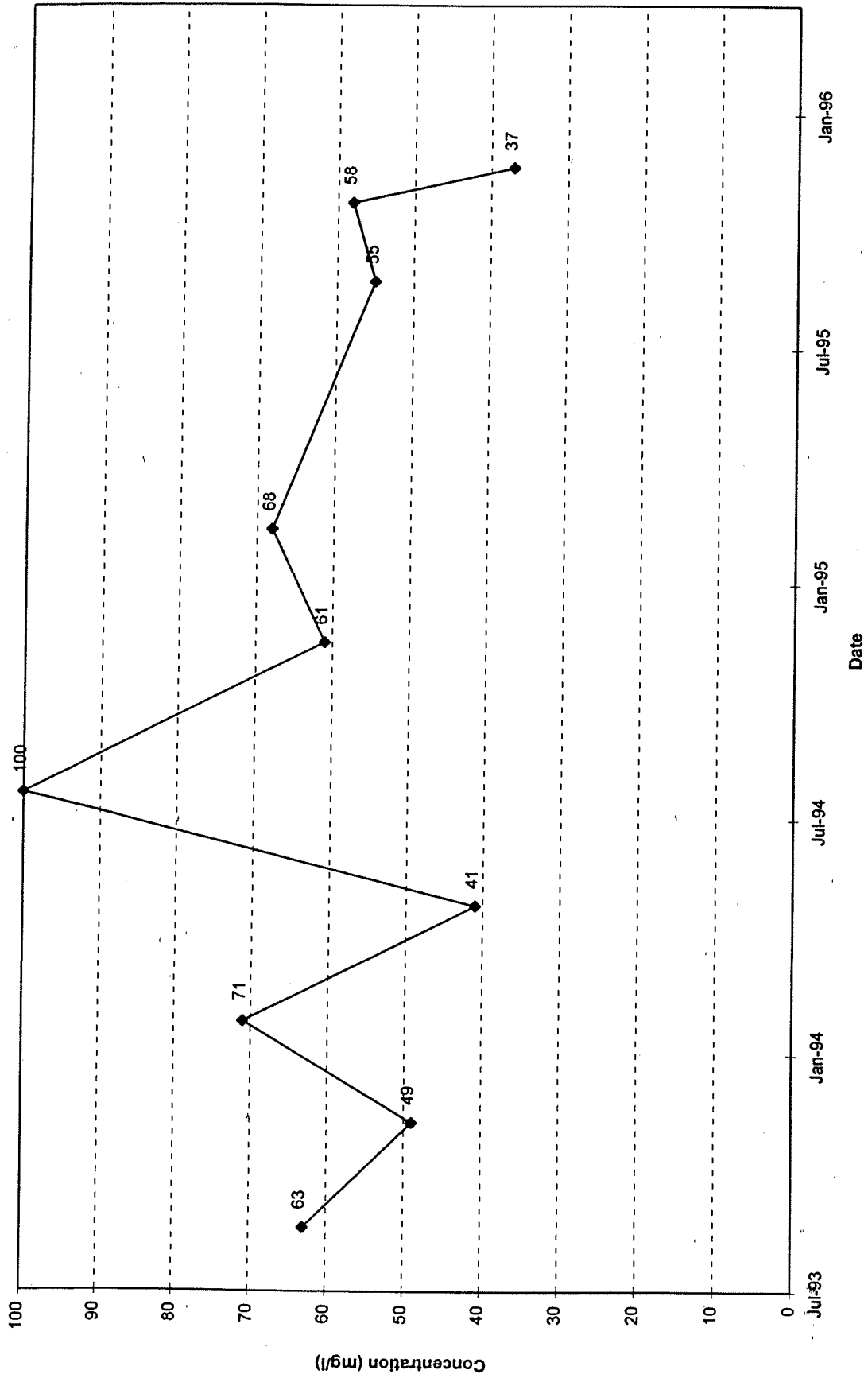


Figure 33
Historic TCE Concentrations in GW-7

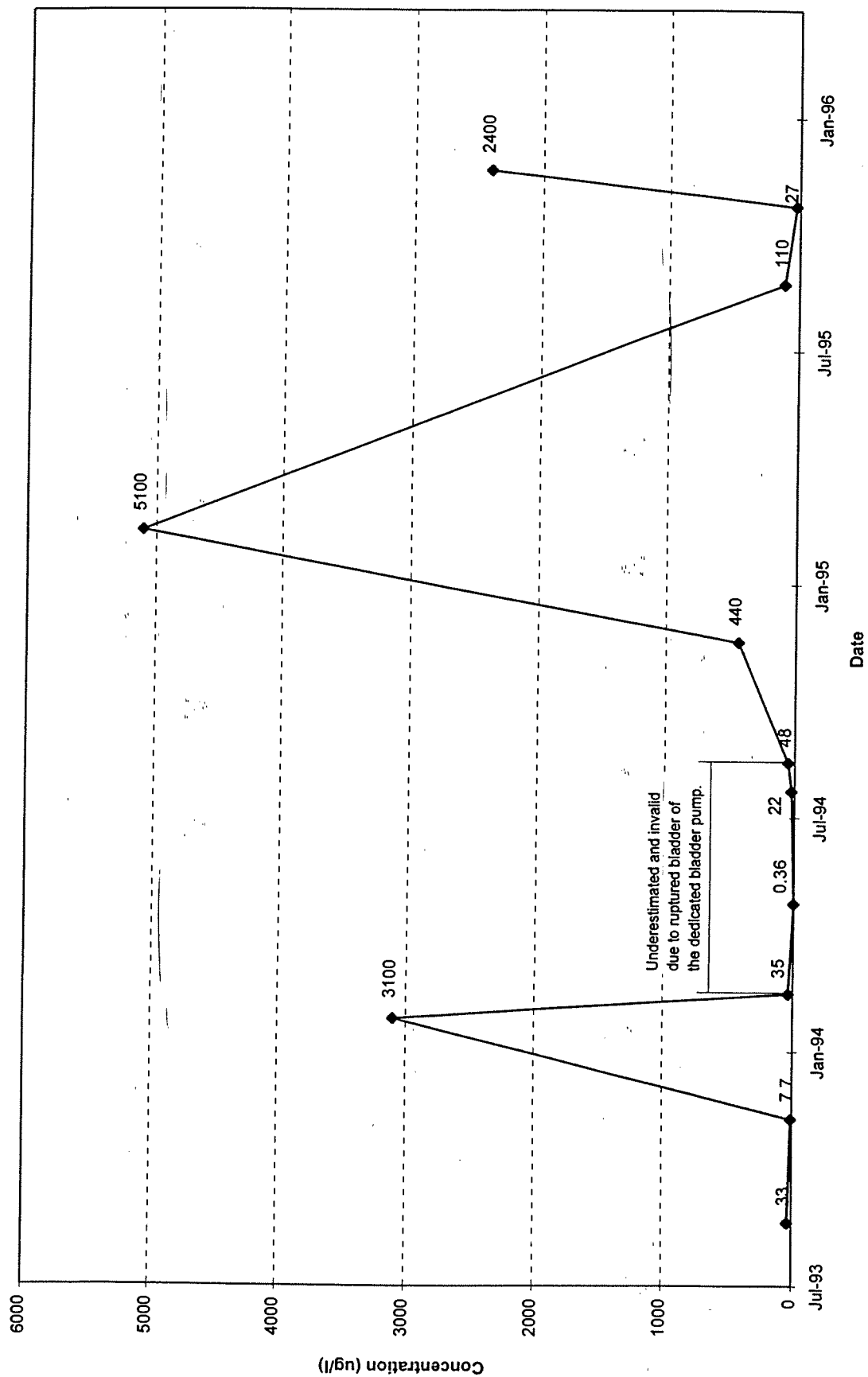


Figure 34
Historic cis-1,2-DCE Concentrations in GW-7

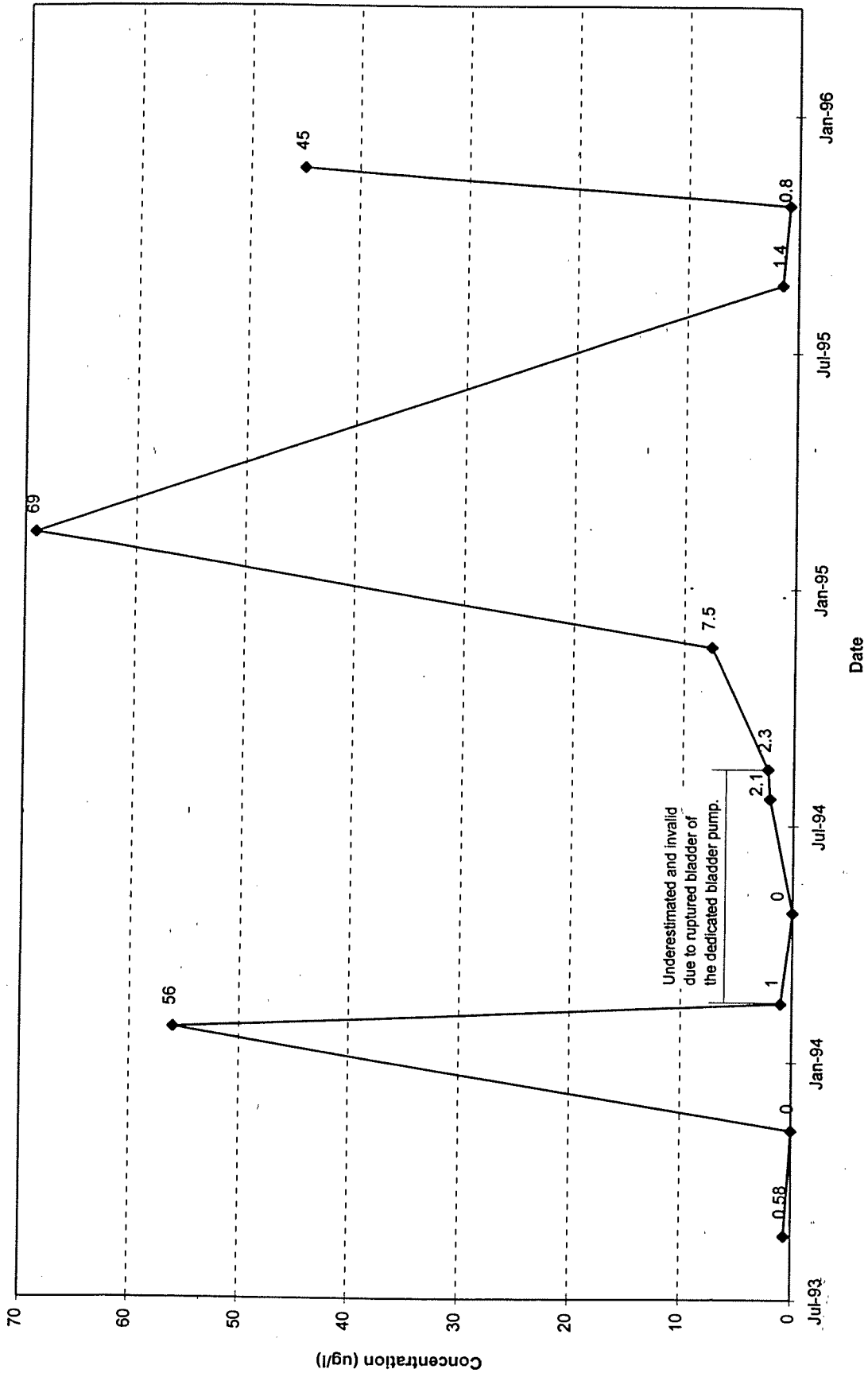


Figure 35
Historic Groundwater Elevations in GW-8

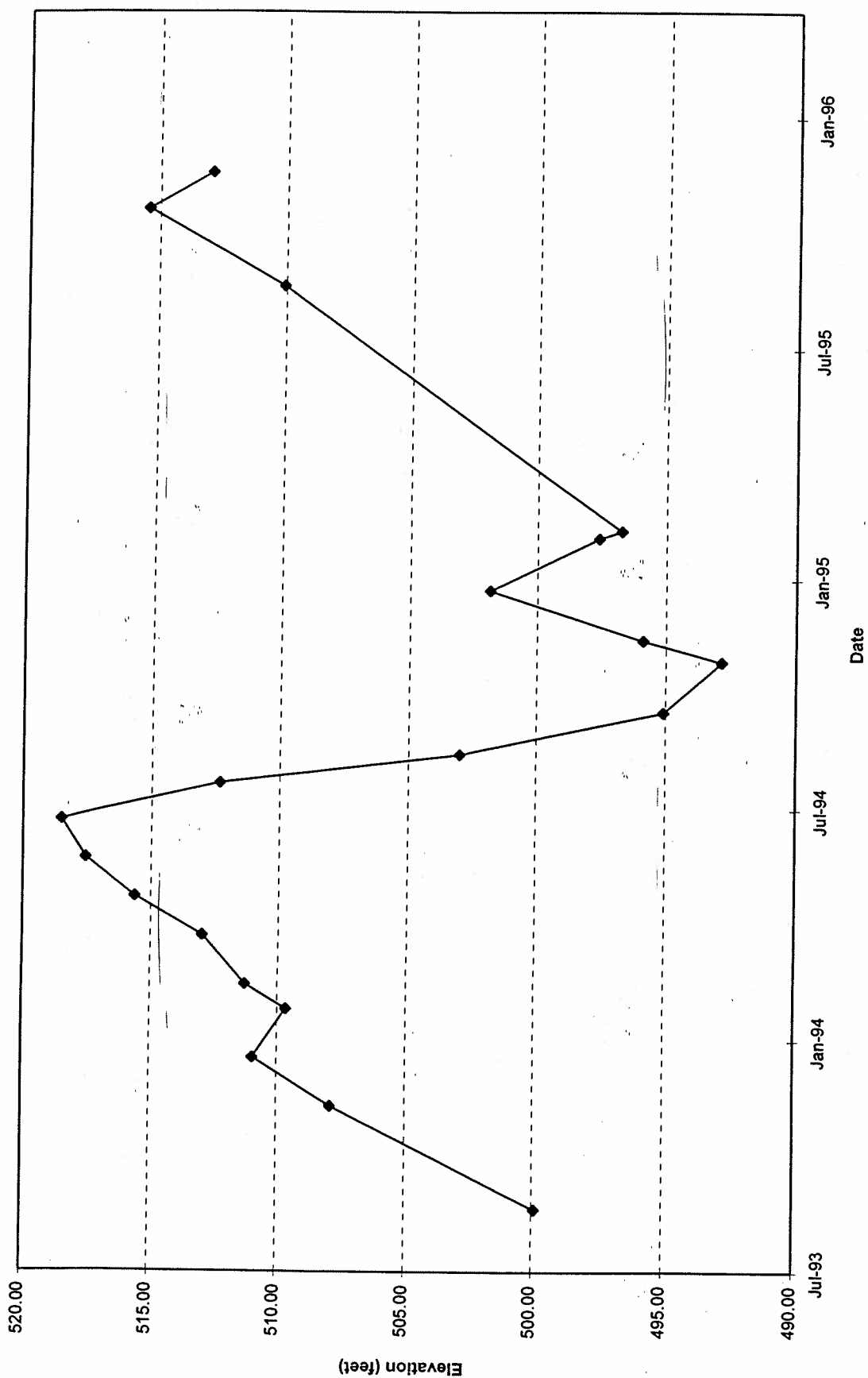


Figure 36
Historic Nitrate Concentrations in GW-8

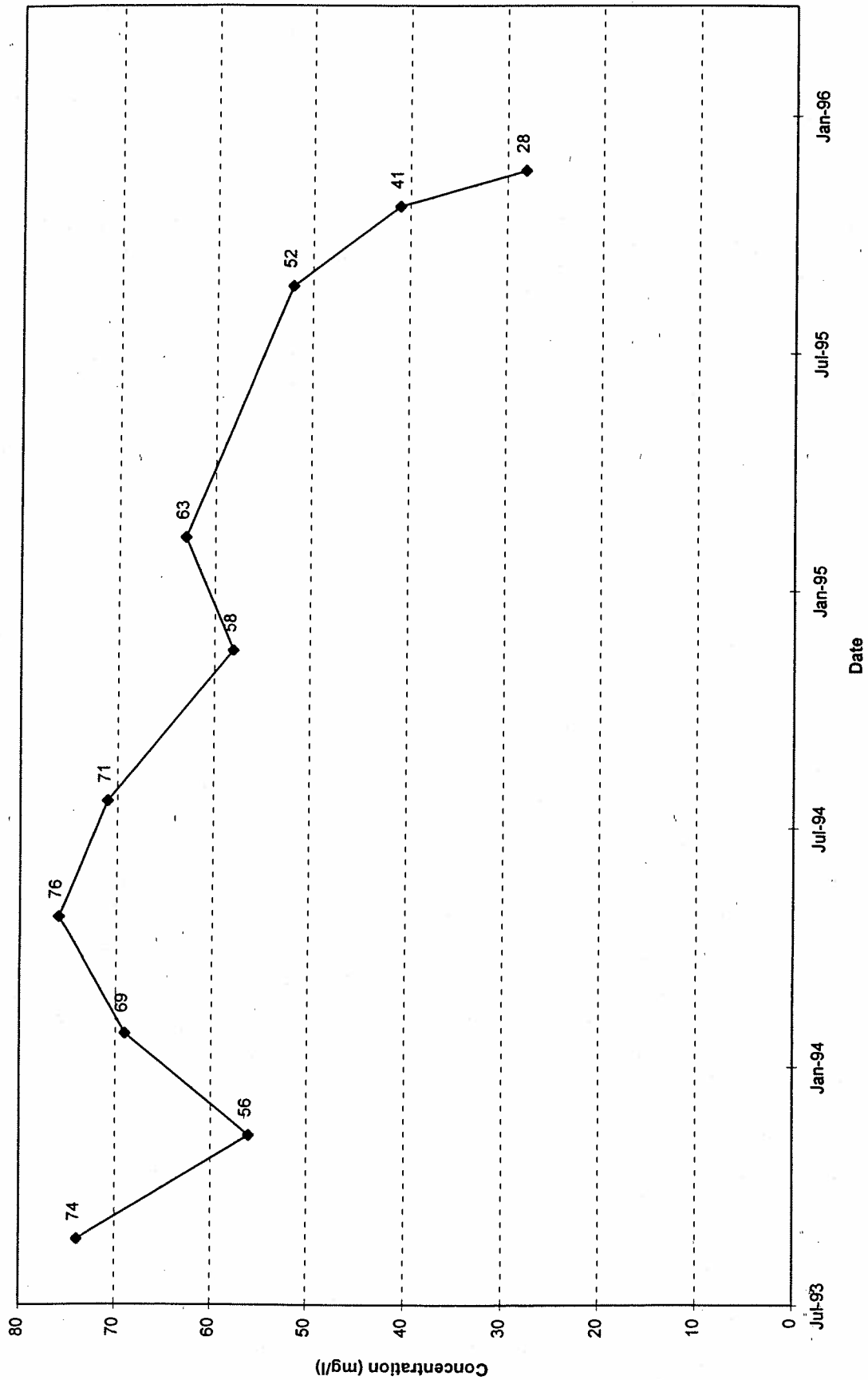


Figure 37
Historic TCE Concentrations in GW-8

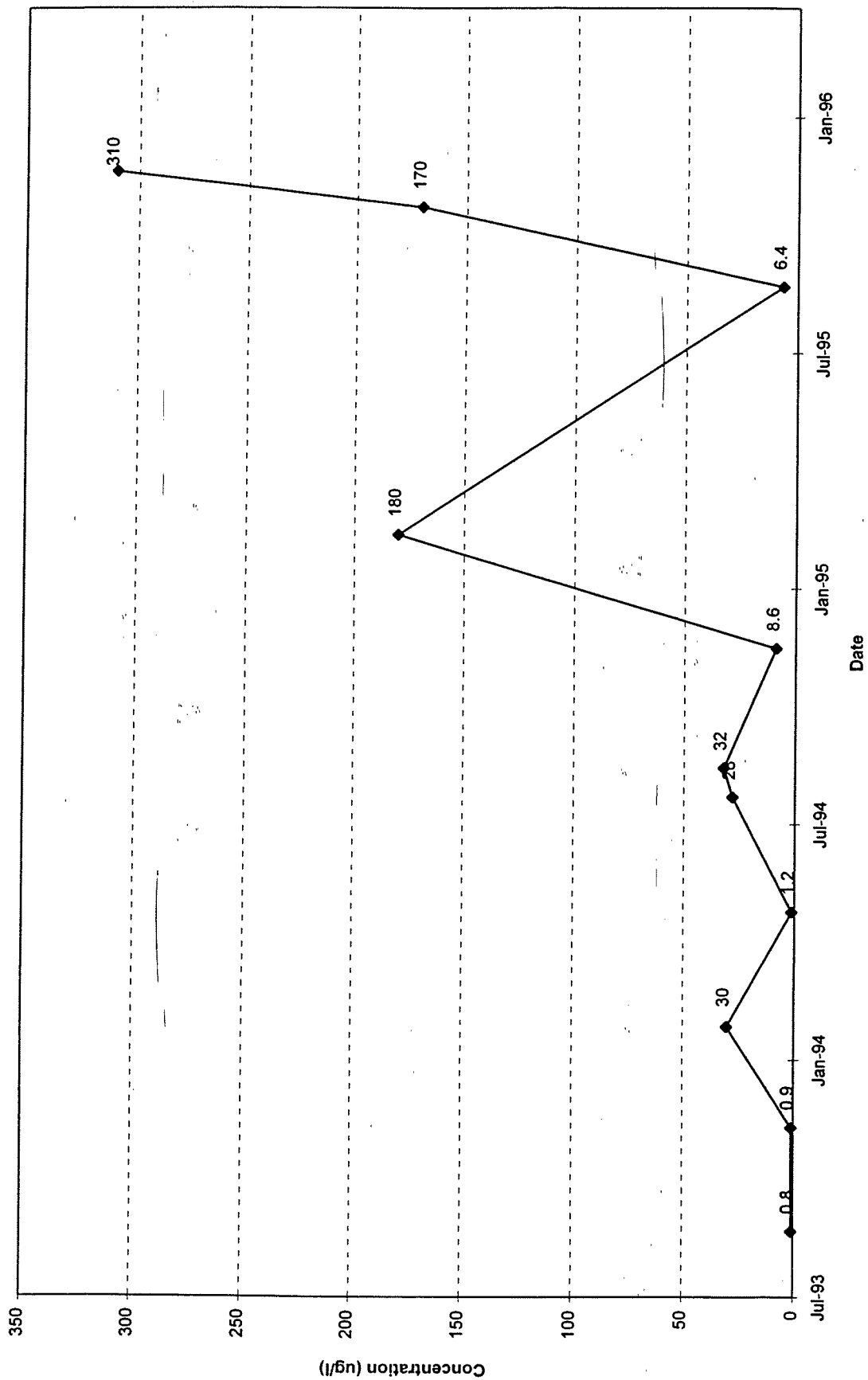


Figure 38
Historic PCE Concentrations in GW-8

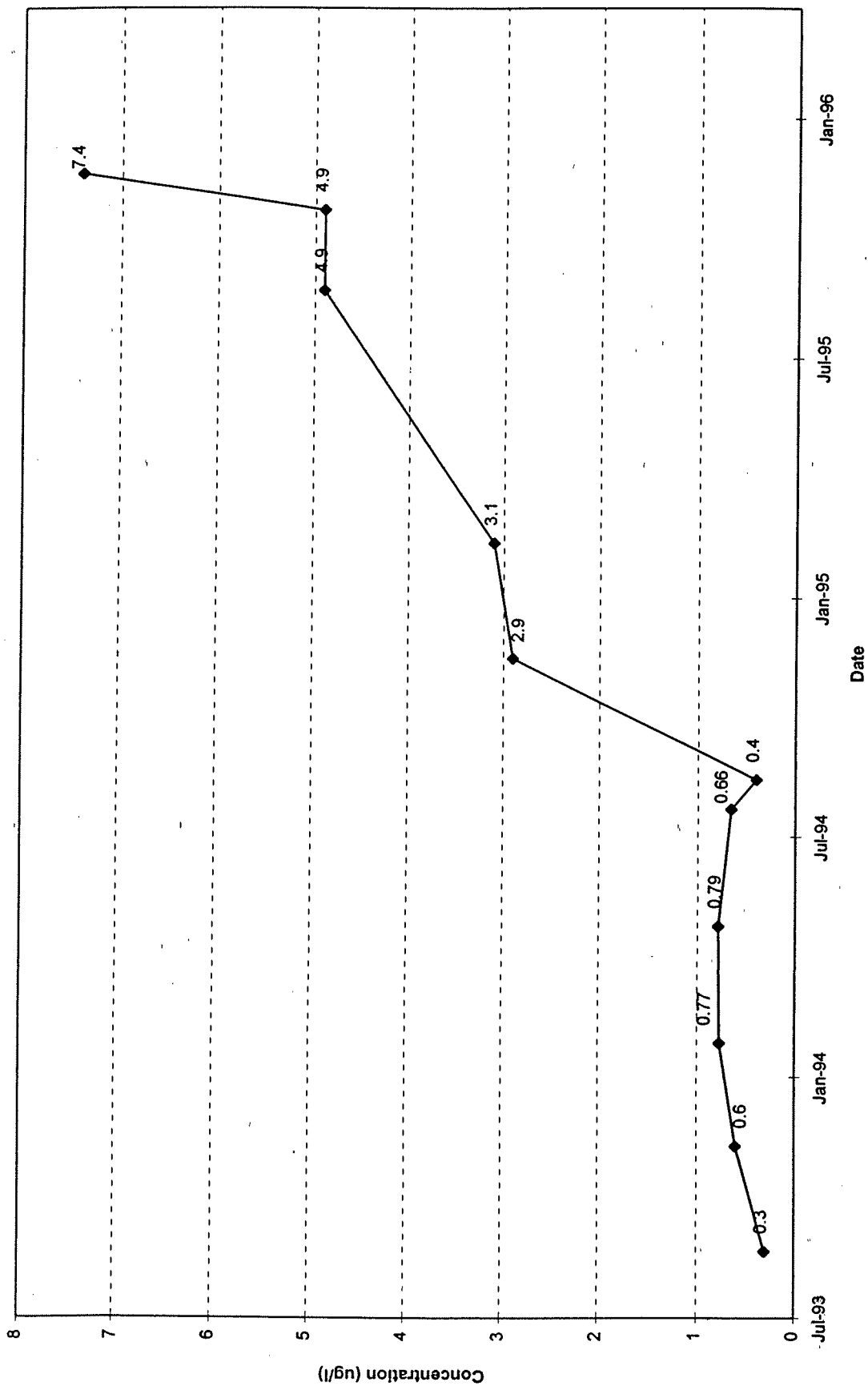


Figure 39
Historic cis-1,2-DCE Concentrations in GW-8

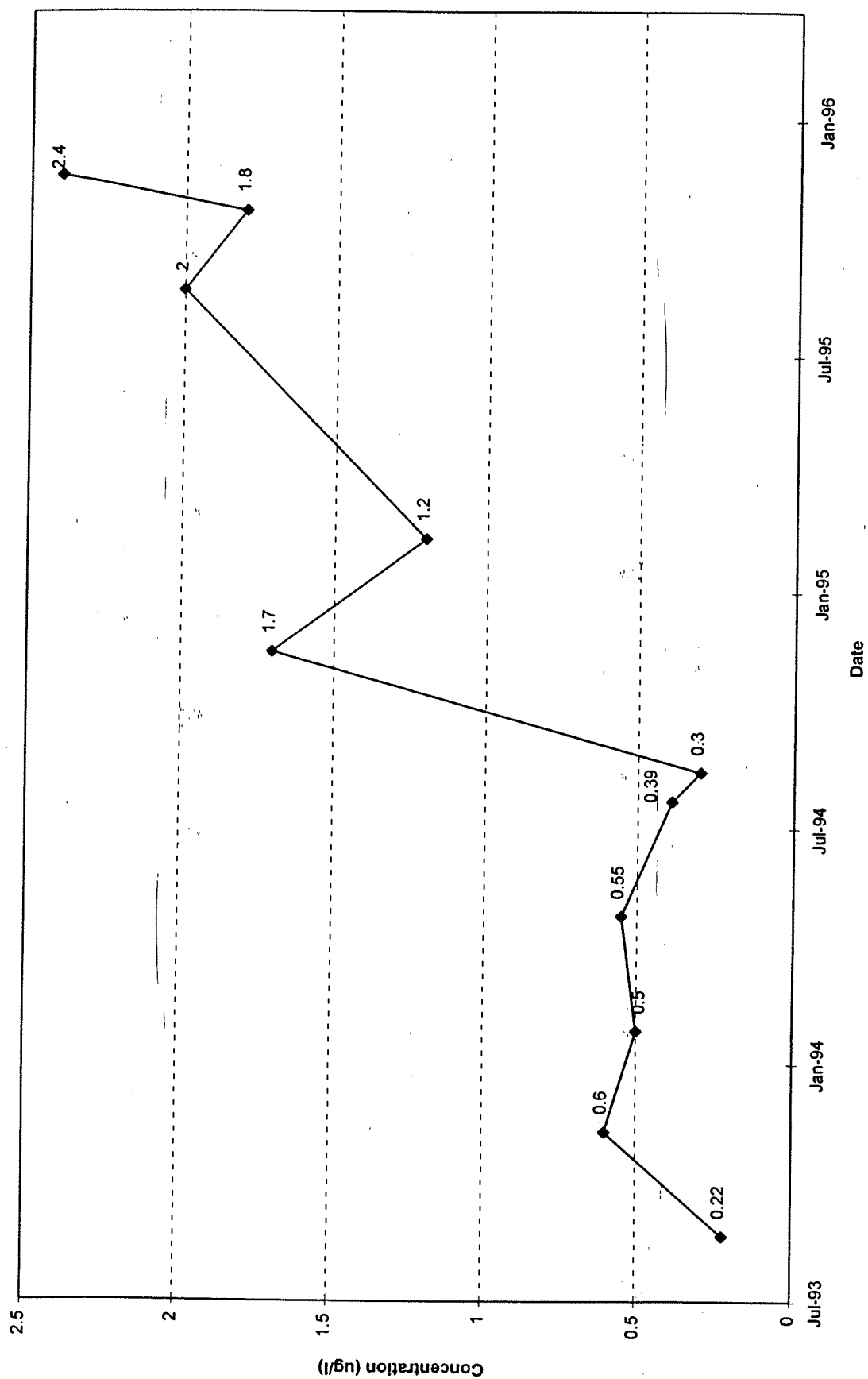


Figure 40
Historic Groundwater Elevations in GW-9

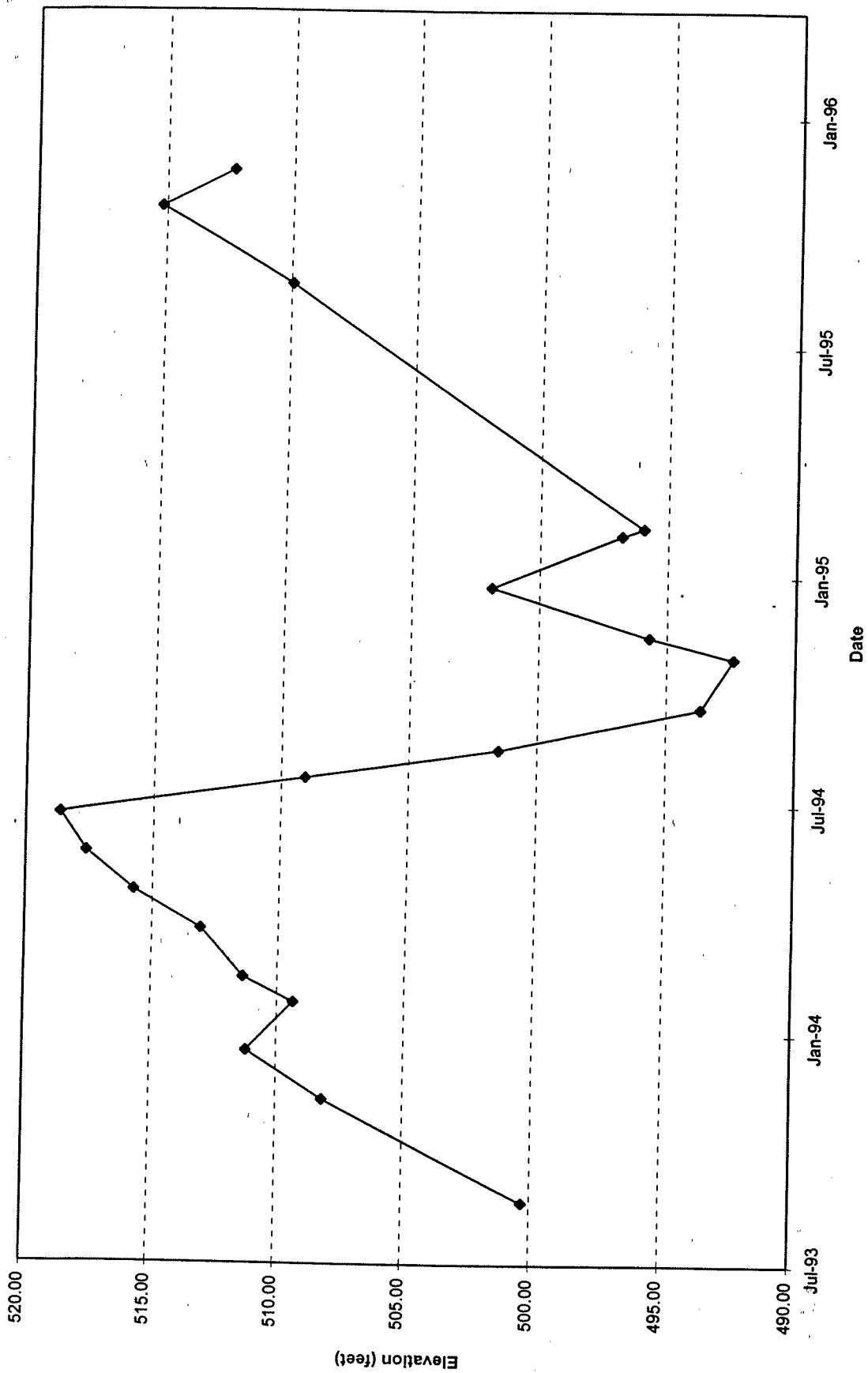


Figure 41
Historic Nitrate Concentrations in GW-9

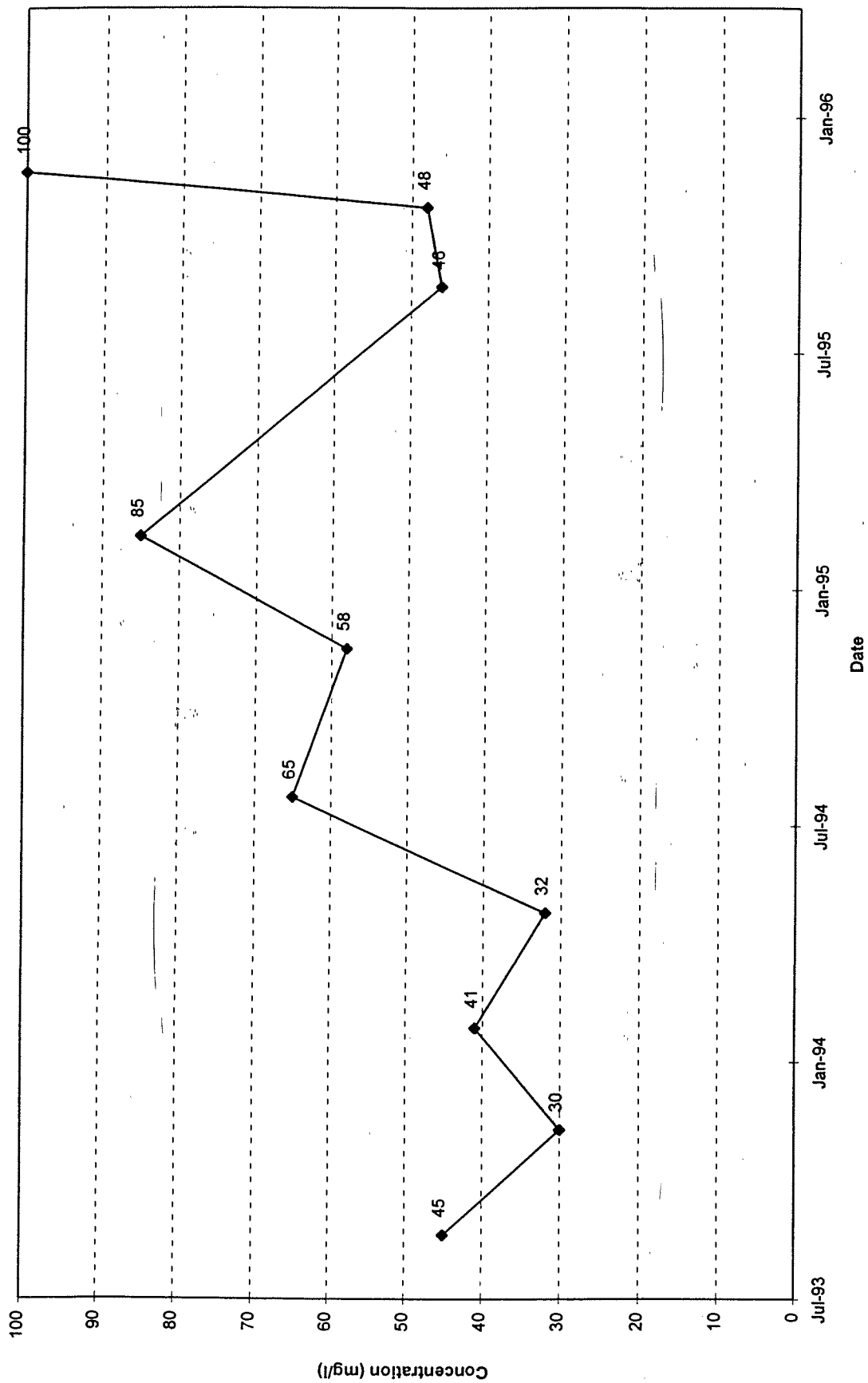


Figure 42
Historic 1,1,1-TCA Concentrations in GW-9

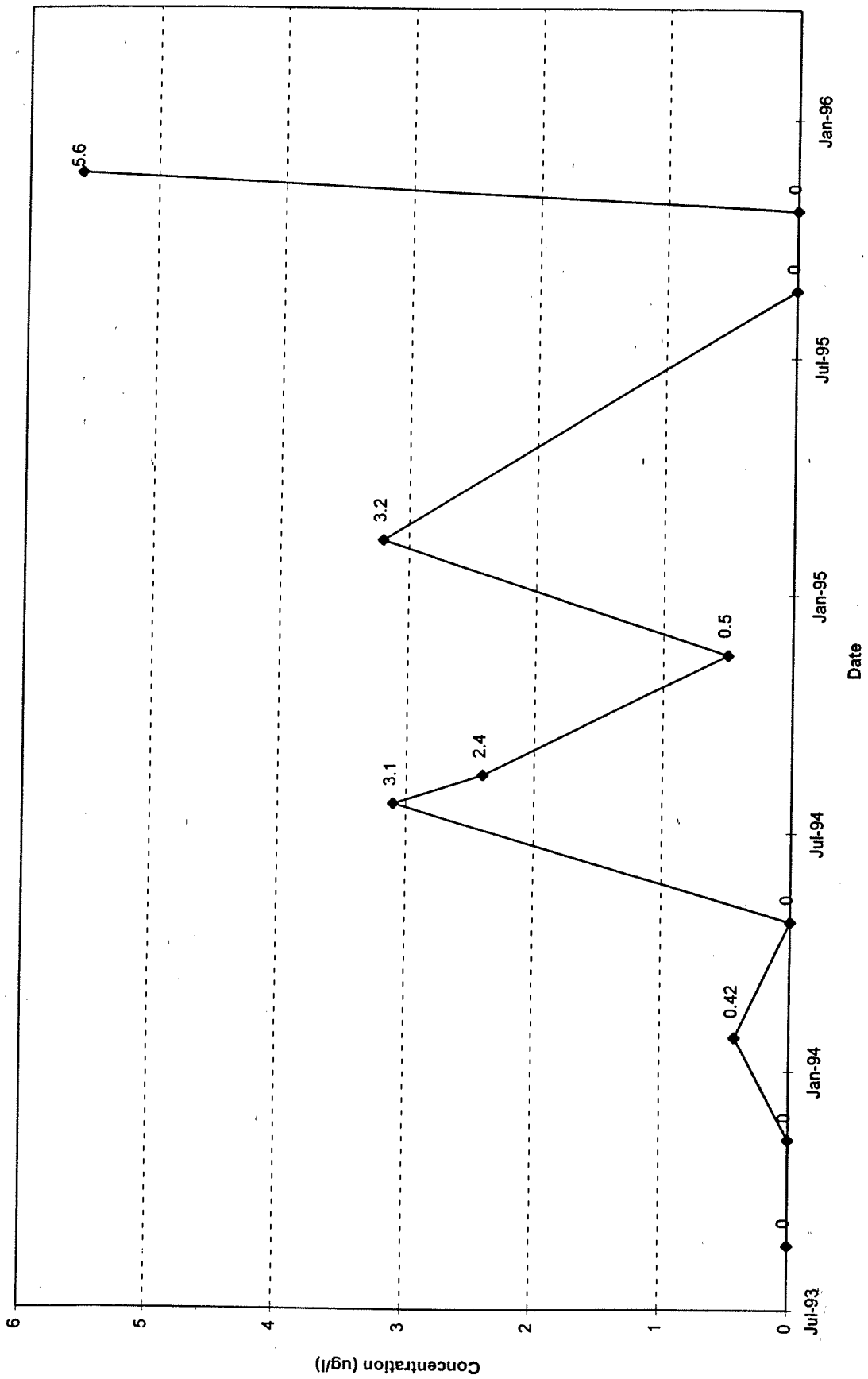


Figure 43
Historic 1,1-DCE Concentrations in GW-9

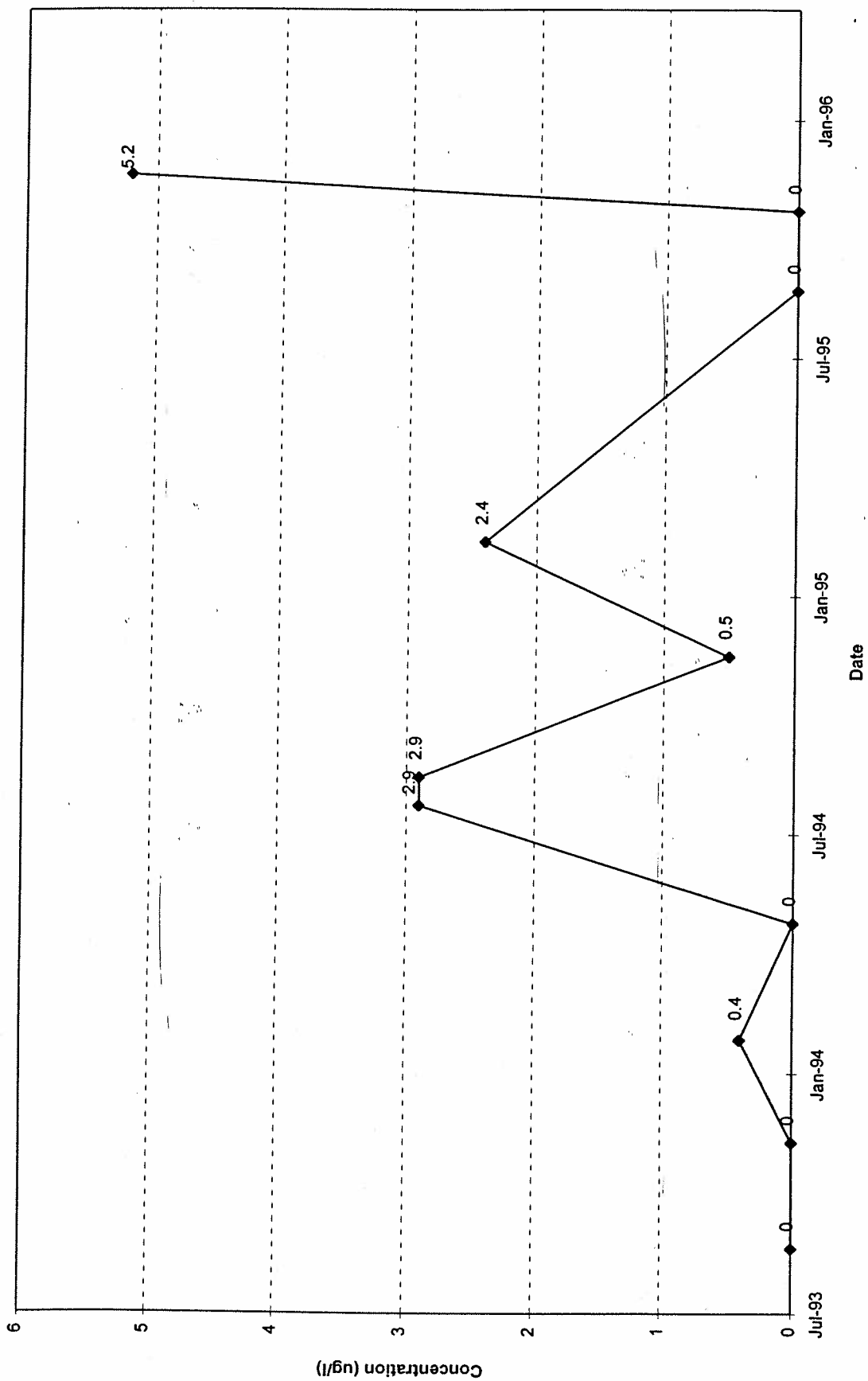


Figure 44
Historic TCE Concentrations in GW-9

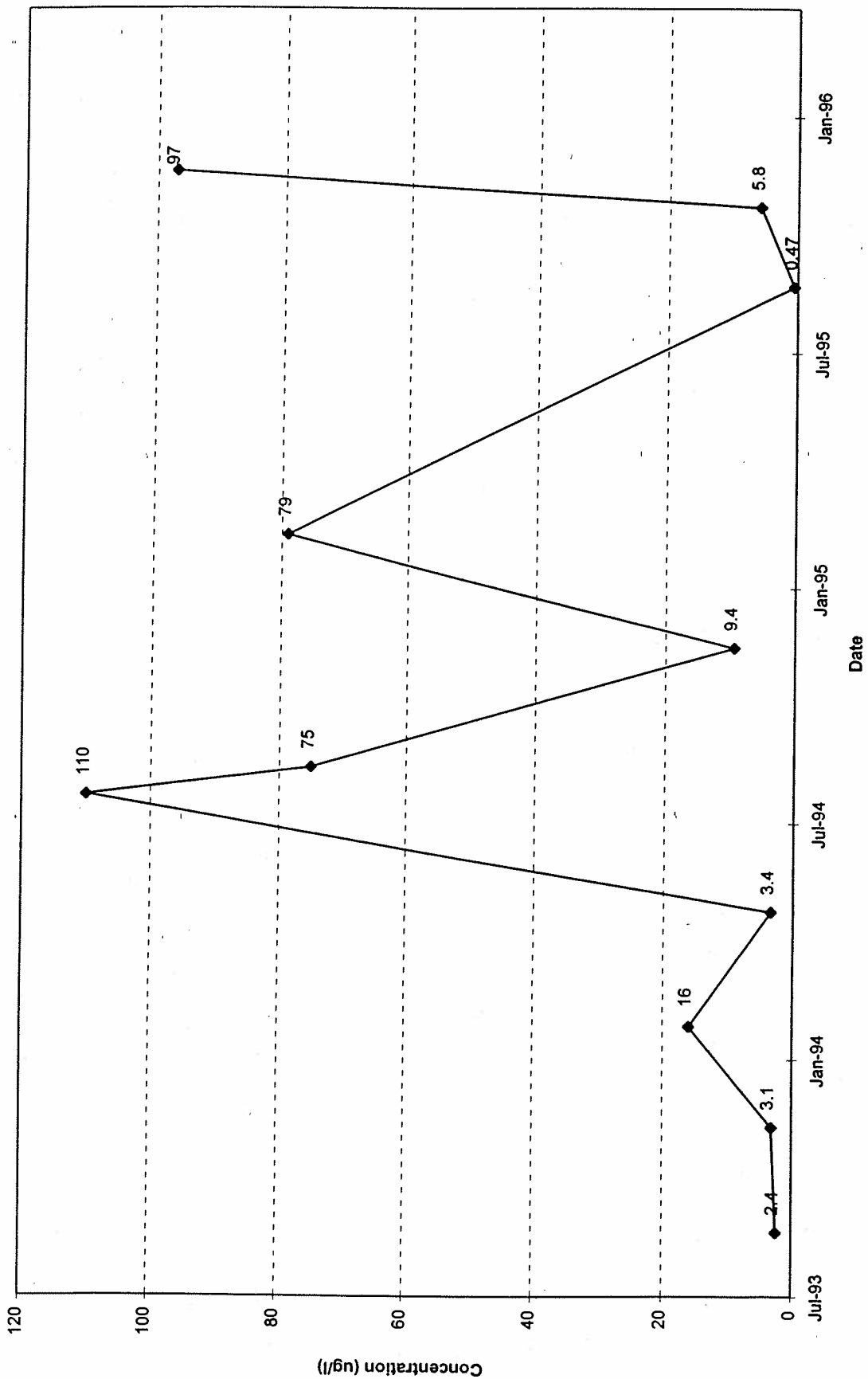


Figure 45
Historic PCE Concentrations in GW-9

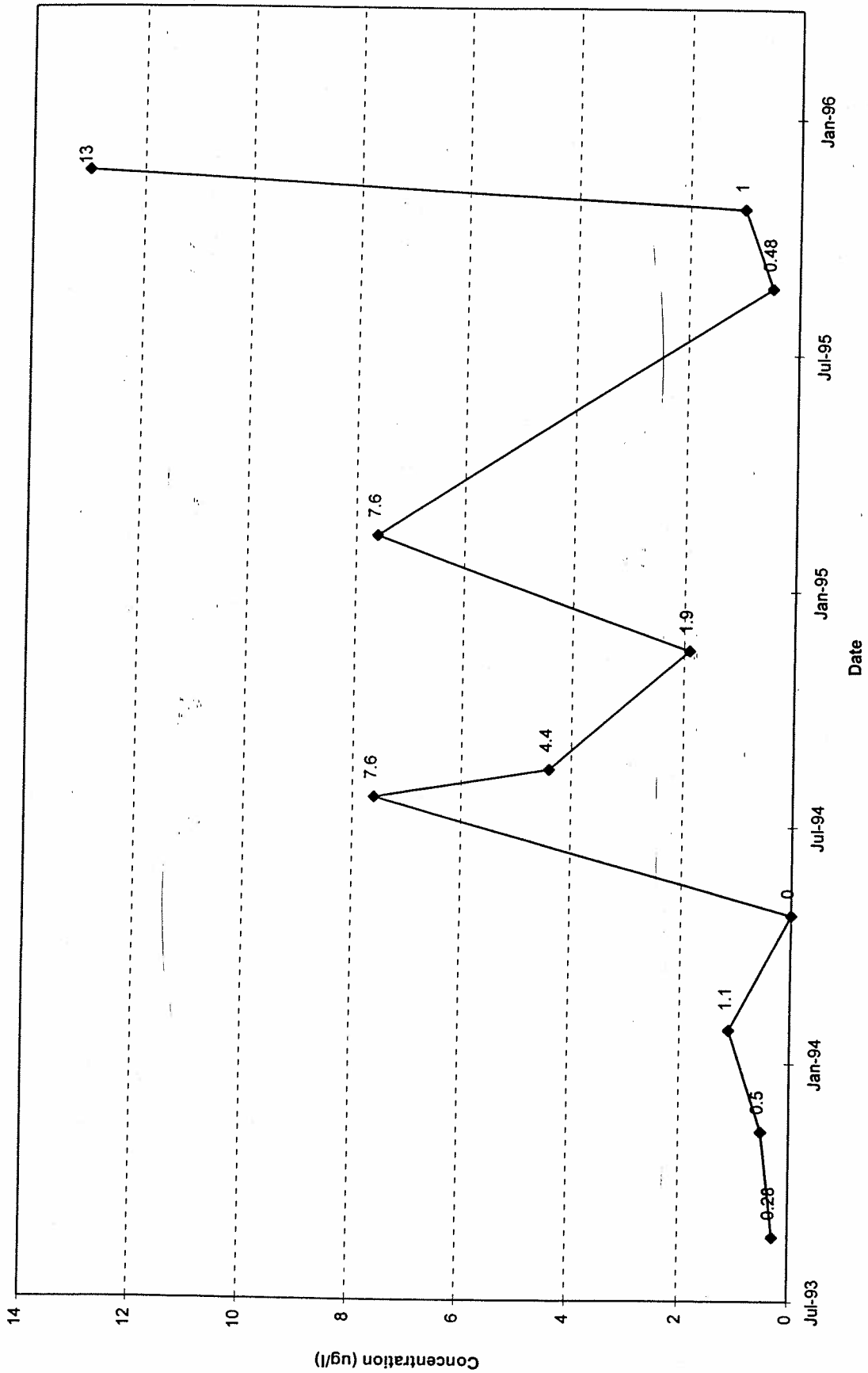


Figure 46
Historic Groundwater Elevations in GW-10

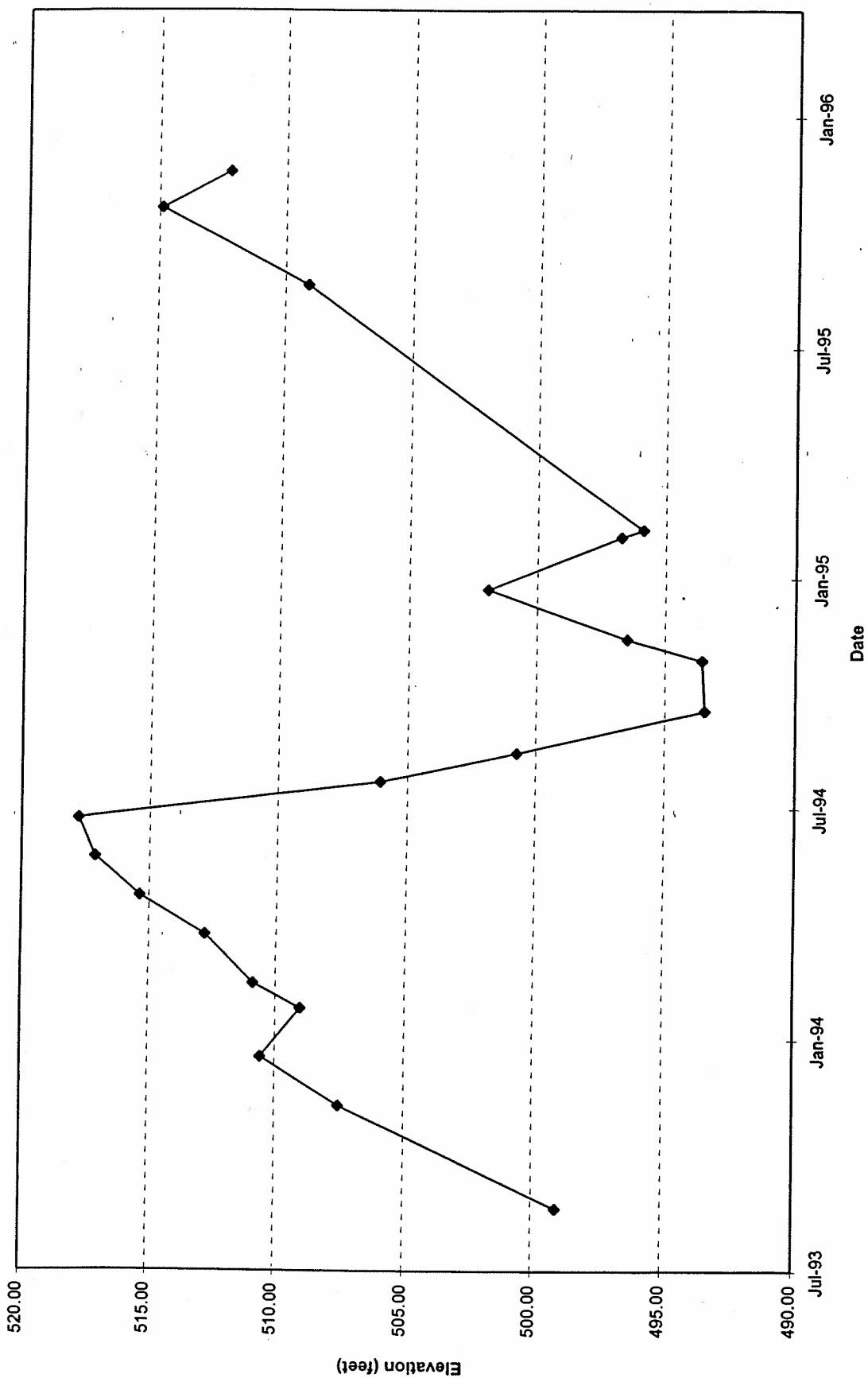


Figure 47
Historic Nitrate Concentrations in GW-10

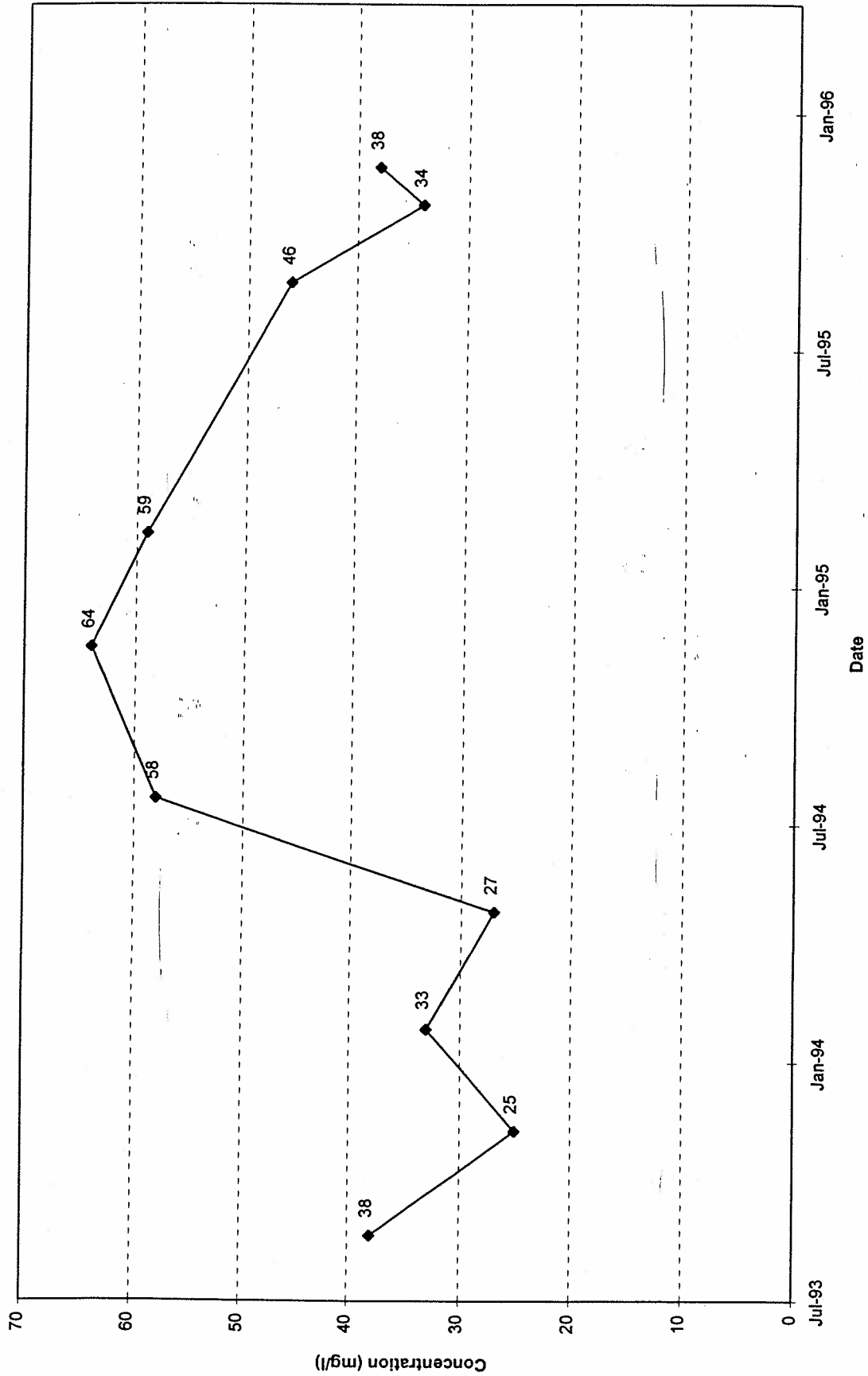


Figure 48
Historic TCE Concentrations in GW-10

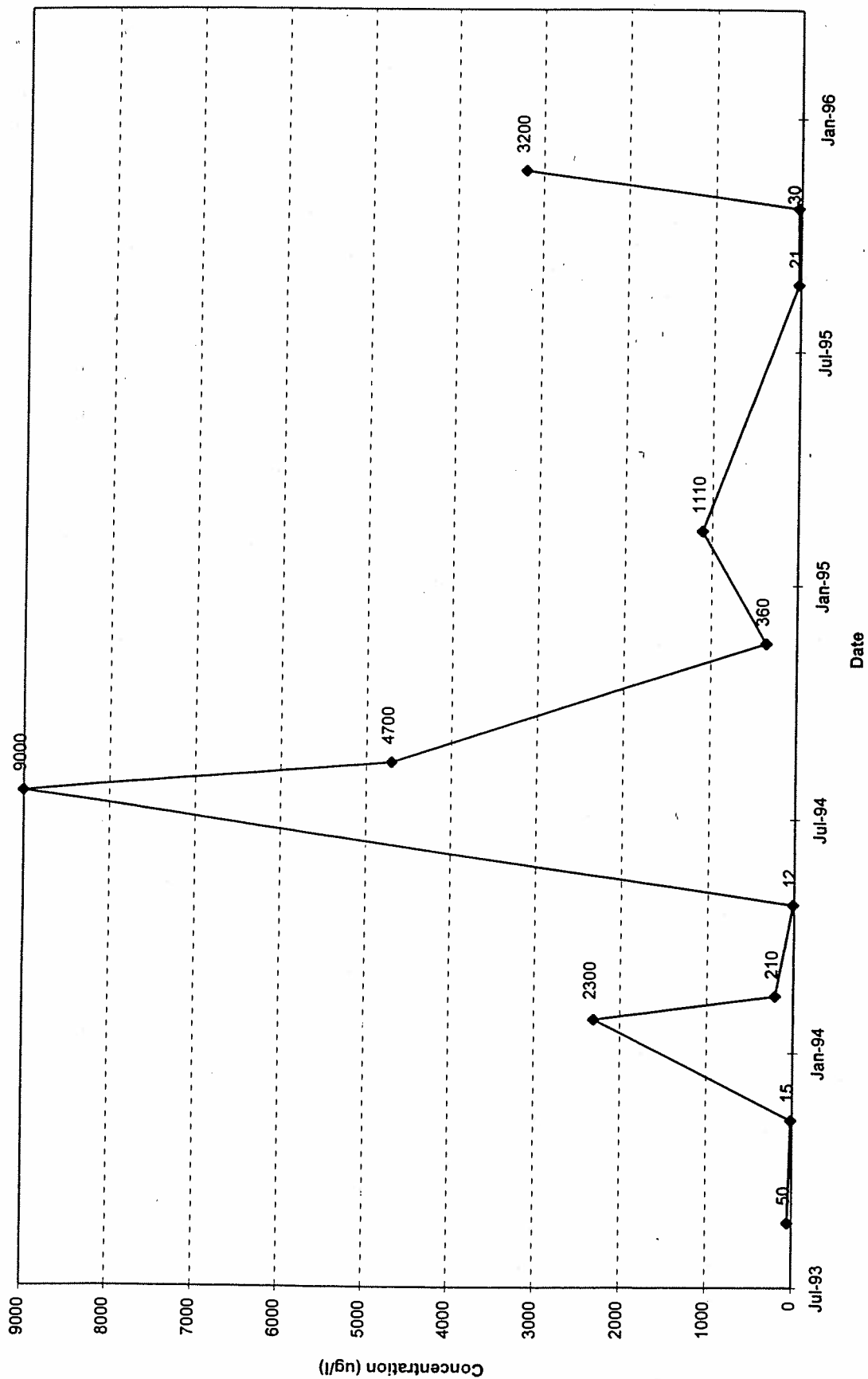
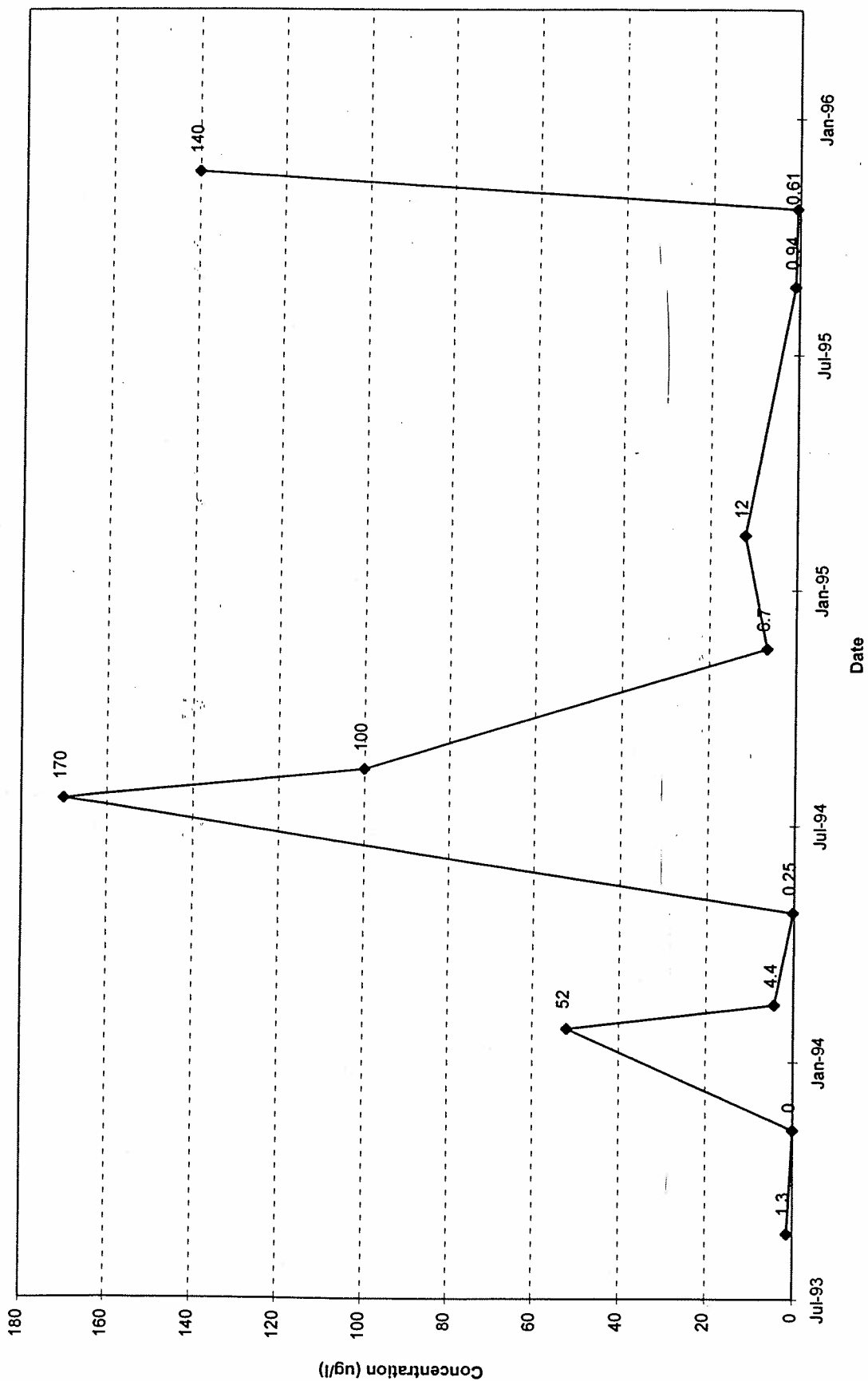


Figure 49
Historic cis-1,2-DCE Concentrations in GW-10



APPENDIX A

STANDARD OPERATING PROCEDURES

GROUNDWATER LEVEL MEASUREMENT PROTOCOL

Prior to purging and sampling of groundwater monitoring wells, an Environmental Instruments Company (EI) water level meter was used to measure the depth to the water surface inside each groundwater monitoring well. Water level measurements were collected from the groundwater monitoring wells in the shortest time-frame possible, in order to obtain an accurate representation of the groundwater potentiometric surface. Initially, the meter was lowered down the groundwater monitoring well until the water surface within the groundwater monitoring well was encountered. The depth to the water surface was measured from a designated point on the well casing to the nearest 0.01 foot and recorded on a standard *SECOR* field data form. This procedure was repeated a second time to confirm the accuracy of the first measurement. The water level meter probe and associated measuring tape were washed in a solution of de-ionized water and a non-phosphate detergent and rinsed with de-ionized water prior to, and between groundwater monitoring wells to reduce the possibility of cross-contamination.

GROUNDWATER PURGING AND SAMPLING PROTOCOL WITH SUBMERSIBLE ELECTRIC PUMP AND BAILER

Groundwater monitoring wells were sampled in order from least contaminated to most contaminated across the Site. A minimum of 3 to 5 well casing volumes of water was purged prior to sampling. Measurements of pH, temperature, and electric conductivity were recorded on a standard *SECOR* field data form during well purging. Stabilization of the physical parameters indicated that water in the monitoring well was representative of water from the formation, and a groundwater sample was collected. All groundwater samples were collected using a 2-inch diameter polypropylene disposable bailer. Sample bottles provided by BCA were filled and placed on ice for transport to the laboratory.

All purging and sampling equipment was decontaminated prior to and between groundwater monitoring wells to reduce the possibility of cross-contamination. The Grundfos™ pumping system was decontaminated by placing the pump in a 35-gallon drum containing a solution of bottled water and a non-phosphate cleanser followed by a 35-gallon drum containing purified bottled water. Once the submersible pump had displaced the water from the drums, the pump was rinsed with de-ionized water. This procedure was performed to ensure the interior of PVC tubing attached to the pump was properly decontaminated. The exterior of the PVC tubing and the reel were also washed with a pressure washer, followed by a rinse with de-ionized water between groundwater monitoring wells. As a final precautionary measure, the bottom of the submersible pump was opened and the water within the pump was replaced with de-ionized water.

APPENDIX B
LABORATORY RESULTS

ANALYTICAL REPORT

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-11-414

Received: 20 NOV 95

Mailed: DEC 13 1995

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
11-414-1	GW-3	20 NOV 95	
11-414-2	GW-1	20 NOV 95	
PARAMETER	11-414-1	11-414-2	
Chloride (300.0), mg/L	19	24	
Nitrate (300.0), mg/L	34	40	
Sulfate (300.0), mg/L	32	52	
Turbidity (180.1), NTU	12	8.6	
Dissolved Solids (160.1), mg/L	300	410	
Alkalinity (310.1)			
Carbonate Alk (as CaCO3), mg/L	<10	<10	
Bicarbonate Alk (as CaCO3), mg/L	150	210	
Hydroxide Alk (as CaCO3), mg/L	<10	<10	
Total Alkalinity (as CaCO3), mg/L	150	210	
Calcium (6010), mg/L	61	73	
Magnesium (6010), mg/L	13	16	
Potassium (6010), mg/L	5.7	4.9	
Sodium (6010), mg/L	9.7	19	
Digestion (3010), Date	11/28/95	11/28/95	

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Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
11-414-1	GW-3	20 NOV 95	
11-414-2	GW-1	20 NOV 95	
PARAMETER	11-414-1	11-414-2	
GRO/DRO (8015M)			
Date Analyzed	11/28/95	11/28/95	
Date Extracted	11/22/95	11/22/95	
Dilution Factor, Times	1	1	
TPH (total), mg/L	<2	<2	
Other GRO/DRO (8015M)	---	---	
Surrogates **			
Naphthalene Reported, mg/L	2.18	2.09	
Naphthalene Theoretical, mg/L	2.00	2.00	

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Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
11-414-1	GW-3	20 NOV 95	
11-414-2	GW-1	20 NOV 95	
PARAMETER	11-414-1	11-414-2	
E524.2/VOC (524.2)			
Date Analyzed	11/22/95	11/22/95	
Dilution Factor, Times	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2	
1,1,1-Trichloroethane, ug/L	0.36	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	<0.2	
1,1-Dichloroethane, ug/L	0.64	0.20	
1,1-Dichloroethene, ug/L	0.51	<0.2	
1,1-Dichloropropene, ug/L	<0.2	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5	
1,2-Dibromoethane, ug/L	<0.2	<0.2	
1,2-Dichloroethane, ug/L	<0.2	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	<0.2	
1,2-Dichloropropane, ug/L	<0.2	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	<0.2	
1,3-Dichloropropane, ug/L	<0.2	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	<0.2	
2,2-Dichloropropane, ug/L	<0.2	<0.2	
2-Chlorotoluene, ug/L	<0.2	<0.2	
4-Chlorotoluene, ug/L	<0.2	<0.2	

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
11-414-1	GW-3	20 NOV 95	
11-414-2	GW-1	20 NOV 95	
PARAMETER	11-414-1	11-414-2	
Bromobenzene, ug/L	<0.2	<0.2	
Bromochloromethane, ug/L	<0.2	<0.2	
Bromodichloromethane, ug/L	<0.2	<0.2	
Bromomethane, ug/L	<0.5	<0.5	
Benzene, ug/L	<0.2	<0.2	
Bromoform, ug/L	<0.5	<0.5	
Chlorobenzene, ug/L	<0.2	<0.2	
Carbon Tetrachloride, ug/L	0.49	<0.2	
Chloroethane, ug/L	<0.2	<0.2	
Chloroform, ug/L	0.52	0.51	
Chloromethane, ug/L	<0.5	<0.5	
Dibromochloromethane, ug/L	<0.2	<0.2	
Dibromomethane, ug/L	<0.2	<0.2	
Dichlorodifluoromethane, ug/L	0.64	1.5	
Ethylbenzene, ug/L	<0.2	<0.2	
Freon 113, ug/L	<0.2	<0.2	
Hexachlorobutadiene, ug/L	<0.2	<0.2	
Isopropylbenzene, ug/L	<0.2	<0.2	
Methylene chloride, ug/L	<1	<1	
N-Butylbenzene, ug/L	<0.2	<0.2	
N-Propylbenzene, ug/L	<0.2	<0.2	
Naphthalene, ug/L	<1	<1	
Styrene, ug/L	<0.2	<0.2	
Trichloroethene, ug/L	15	7.0	
Trichlorofluoromethane, ug/L	<0.2	<0.2	
Toluene, ug/L	<0.2	<0.2	

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REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
11-414-1	GW-3	20 NOV 95	
11-414-2	GW-1	20 NOV 95	
PARAMETER	11-414-1	11-414-2	
Tetrachloroethene, ug/L	1.5	2.0	
Vinyl chloride, ug/L	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	1.2	1.1	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.4	<0.4	
o-Xylene, ug/L	<0.2	<0.2	
p-Isopropyl toluene, ug/L	0.40	0.31	
sec-Butylbenzene, ug/L	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	
Other E524.2/VOC (524.2)	---	---	
Surrogates **			
1,2-Dichlorobenzene-d4 Rep., ug/L	3.51	3.42	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00	
4-Bromofluorobenzene Rep., ug/L	4.94	4.88	
4-Bromofluorobenzene Theo., ug/L	5.00	5.00	

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REPORT OF ANALYTICAL RESULTS

Page 6

Jane Freemyer
Jane Freemyer, Laboratory Director

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ANALYTICAL REPORT

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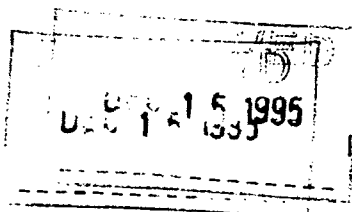
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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
11-397-1	GW-2	19 NOV 95
PARAMETER	11-397-1	
Chloride (300.0), mg/L	26	
Nitrate (300.0), mg/L	38	
Sulfate (300.0), mg/L	42	
Turbidity (180.1), NTU	15	
Dissolved Solids (160.1), mg/L	400	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<10	
Bicarbonate Alk (as CaCO3), mg/L	200	
Hydroxide Alk (as CaCO3), mg/L	<10	
Total Alkalinity (as CaCO3), mg/L	200	
Calcium (6010), mg/L	77	
Magnesium (6010), mg/L	17	
Potassium (6010), mg/L	5.2	
Sodium (6010), mg/L	20	
Digestion (3010), Date	11/28/95	
GR0/DRO (8015M)		
Date Analyzed	11/28/95	
Date Extracted	11/22/95	
Dilution Factor, Times	1	
TPH (total), mg/L	<2	
Other GR0/DRO (8015M)	---	
Surrogates **		
Naphthalene Reported, mg/L	2.23	
Naphthalene Theoretical, mg/L	2.00	

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
11-397-1	GW-2	19 NOV 95

PARAMETER	11-397-1
-----------	----------

E524.2/VOC (524.2)

Date Analyzed

11/22/95

Dilution Factor, Times

1

1,1,1,2-Tetrachloroethane, ug/L

<0.2

1,1,1-Trichloroethane, ug/L

<0.2

1,1,2,2-Tetrachloroethane, ug/L

<0.2

1,1,2-Trichloroethane, ug/L

<0.2

1,1-Dichloroethane, ug/L

0.50

1,1-Dichloroethene, ug/L

<0.2

1,1-Dichloropropene, ug/L

<0.2

1,2,3-Trichlorobenzene, ug/L

<0.2

1,2,3-Trichloropropane, ug/L

<0.5

1,2,4-Trichlorobenzene, ug/L

<0.2

1,2,4-Trimethylbenzene, ug/L

<0.2

1,2-Dibromo-3-chloropropane, ug/L

<0.5

1,2-Dibromoethane, ug/L

<0.2

1,2-Dichloroethane, ug/L

<0.2

1,2-Dichlorobenzene, ug/L

<0.2

1,2-Dichloropropane, ug/L

<0.2

1,3,5-Trimethylbenzene, ug/L

<0.2

1,3-Dichlorobenzene, ug/L

<0.2

1,3-Dichloropropane, ug/L

<0.2

1,4-Dichlorobenzene, ug/L

<0.2

2,2-Dichloropropane, ug/L

<0.2

2-Chlorotoluene, ug/L

<0.2

4-Chlorotoluene, ug/L

<0.2

Bromobenzene, ug/L

<0.2

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
11-397-1	GW-2	19 NOV 95
PARAMETER	11-397-1	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.40	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	1.6	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	4.8	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	3.0	
Vinyl chloride, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
11-397-1	GW-2	19 NOV 95
PARAMETER	11-397-1	
cis-1,2-Dichloroethene, ug/L	2.7	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.4	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC (524.2)	---	
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	3.50	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	
4-Bromofluorobenzene Rep., ug/L	4.85	
4-Bromofluorobenzene Theo., ug/L	5.00	

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Rinda Geddes for JF
Jane Freemyer, Laboratory Director

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Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
11-459-1	GW-7	22 NOV 95
PARAMETER	11-459-1	
Chloride (300.0), mg/L	31	
Nitrate (300.0), mg/L	58	
Sulfate (300.0), mg/L	57	
Turbidity (180.1), NTU	2.5	
Dissolved Solids (160.1), mg/L	450	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<10	
Bicarbonate Alk (as CaCO3), mg/L	230	
Hydroxide Alk (as CaCO3), mg/L	<10	
Total Alkalinity (as CaCO3), mg/L	230	
Calcium (6010), mg/L	96	
Magnesium (6010), mg/L	21	
Potassium (6010), mg/L	3.6	
Sodium (6010), mg/L	25	
Digestion (3010), Date	12/04/95	
GRO/DRO (8015M)		
Date Analyzed	11/29/95	
Date Extracted	11/22/95	
Dilution Factor, Times	1	
TPH (total), mg/L	<2	
Other GRO/DRO (8015M)	---	
Surrogates **		
Naphthalene Reported, mg/L	1.91	
Naphthalene Theoretical, mg/L	2.00	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
11-459-1	GW-7	22 NOV 95
PARAMETER	11-459-1	
E524.2/VOC (524.2)		
Date Analyzed	11/28/95	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	0.34	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	0.22	
1,1-Dichloroethene, ug/L	0.48	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
11-459-1	GW-7	22 NOV 95
PARAMETER	11-459-1	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	0.55	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.56	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	0.56	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	27	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	0.53	
Vinyl chloride, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED		
12-354-2	Trip Blank AS	18 DEC 95		
12-354-3	Equipment Blank AS	18 DEC 95		
12-354-4	Field Blank AS	18 DEC 95		
PARAMETER	12-354-2	12-354-3	12-354-4	
Trichlorofluoromethane, ug/L	<0.2	<0.2	<0.2	
Toluene, ug/L	<0.2	0.23	<0.2	
Tetrachloroethene, ug/L	<0.2	<0.2	<0.2	
Vinyl chloride, ug/L	<0.2	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	<0.2	<0.2	<0.2	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.4	<0.4	<0.4	
o-Xylene, ug/L	<0.2	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	<0.2	<0.2	
sec-Butylbenzene, ug/L	<0.2	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	<0.2	
Other E524.2/VOC (524.2)	---	---	---	
Surrogates **				
1,2-Dichlorobenzene-d4 Rep., ug/L	3.81	4.15	3.96	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00	5.00	
4-Bromofluorobenzene Rep., ug/L	4.86	5.18	5.05	
4-Bromofluorobenzene Theo., ug/L	5.00	5.00	5.00	

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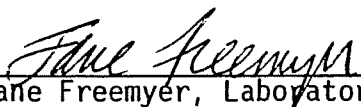
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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
12-377-1	GW-2			19 DEC 95	
12-377-2	GW-3			19 DEC 95	
12-377-3	GW-9			19 DEC 95	
12-377-4	GW-8			19 DEC 95	
PARAMETER	12-377-1	12-377-2	12-377-3	12-377-4	
Chloride (300.0), mg/L	18	20	26	25	
Nitrate (300.0), mg/L	47	38	100	28	
Sulfate (300.0), mg/L	39	38	56	44	
Turbidity (180.1), NTU	7.4	5.3	3.3	84	
Dissolved Solids (160.1), mg/L	350	370	570	480	
Alkalinity (310.1)					
Carbonate Alk (as CaCO3), mg/L	<10	<10	<10	<10	
Bicarbonate Alk (as CaCO3), mg/L	170	200	220	290	
Hydroxide Alk (as CaCO3), mg/L	<10	<10	<10	<10	
Total Alkalinity (as CaCO3), mg/L	170	200	220	290	
Calcium (6010), mg/L	73	71	97	98	
Magnesium (6010), mg/L	15	15	21	22	
Potassium (6010), mg/L	4.6	7.2	4.3	5.3	
Sodium (6010), mg/L	17	18	27	26	
Digestion (3010), Date	01/02/96	01/02/96	01/02/96	01/02/96	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
12-377-1	GW-2	19 DEC 95			
12-377-2	GW-3	19 DEC 95			
12-377-3	GW-9	19 DEC 95			
12-377-4	GW-8	19 DEC 95			
PARAMETER	12-377-1	12-377-2	12-377-3	12-377-4	
GRO/DRO (8015M)					
Date Analyzed	12/22/95	12/22/95	12/22/95	12/22/95	
Date Extracted	12/21/95	12/21/95	12/21/95	12/21/95	
Dilution Factor, Times	1	1	1	1	
TPH (total), mg/L	<2	<2	<2	<2	
Other GRO/DRO (8015M)	---	---	---	---	
Surrogates **					
Naphthalene Reported, mg/L	1.83	1.93	1.83	1.84	
Naphthalene Theoretical, mg/L	2.00	2.00	2.00	2.00	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
12-377-1	GW-2	19 DEC 95			
12-377-2	GW-3	19 DEC 95			
12-377-3	GW-9	19 DEC 95			
12-377-4	GW-8	19 DEC 95			
PARAMETER	12-377-1	12-377-2	12-377-3	12-377-4	
E524.2/VOC (524.2)					
Date Analyzed	12/28/95	12/28/95	12/28/95	12/28/95	
Dilution Factor, Times	1	1	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,1,1-Trichloroethane, ug/L	2.2	6.6	5.6	3.8	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,1-Dichloroethane, ug/L	0.53	0.98	<0.2	0.22	
1,1-Dichloroethene, ug/L	4.9	11	5.2	3.8	
1,1-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2-Dibromoethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2-Dichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,3-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
2,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
12-377-1	GW-2	19 DEC 95			
12-377-2	GW-3	19 DEC 95			
12-377-3	GW-9	19 DEC 95			
12-377-4	GW-8	19 DEC 95			
PARAMETER	12-377-1	12-377-2	12-377-3	12-377-4	
2-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	<0.2	
4-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromochloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromodichloromethane, ug/L	<0.2	0.25	<0.2	<0.2	
Bromomethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Benzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromoform, ug/L	<0.5	<0.5	<0.5	<0.5	
Chlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Carbon Tetrachloride, ug/L	3.8	5.0	1.2	4.2	
Chloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Chloroform, ug/L	1.0	2.3	1.5	2.0	
Chloromethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Dibromochloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Dibromomethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Dichlorodifluoromethane, ug/L	0.76	0.60	2.3	1.4	
Ethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Freon 113, ug/L	<0.2	<0.2	<0.2	<0.2	
Hexachlorobutadiene, ug/L	<0.2	<0.2	<0.2	<0.2	
Isopropylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Methylene chloride, ug/L	<1	<1	<1	<1	
N-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
N-Propylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Naphthalene, ug/L	<1	<1	<1	<1	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
12-377-1	GW-2				19 DEC 95
12-377-2	GW-3				19 DEC 95
12-377-3	GW-9				19 DEC 95
12-377-4	GW-8				19 DEC 95
PARAMETER	12-377-1	12-377-2	12-377-3	12-377-4	
Styrene, ug/L	<0.2	<0.2	<0.2	<0.2	
Trichloroethene, ug/L	50	160	97	310	
Trichlorofluoromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Toluene, ug/L	<0.2	<0.2	<0.2	<0.2	
Tetrachloroethene, ug/L	1.8	2.4	13	7.4	
Vinyl chloride, ug/L	<0.2	<0.2	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	1.3	1.5	0.95	2.4	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.4	<0.4	<0.4	<0.4	
o-Xylene, ug/L	<0.2	<0.2	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	0.44	<0.2	<0.2	
sec-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Other E524.2/VOC (524.2)	---	---	---	---	
Surrogates **					
1,2-Dichlorobenzene-d4 Rep., ug/L	3.93	4.31	4.12	3.90	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00	5.00	5.00	
4-Bromofluorobenzene Rep., ug/L	5.00	5.51	5.25	5.02	
4-Bromofluorobenzene Theo., ug/L	5.00	5.00	5.00	5.00	

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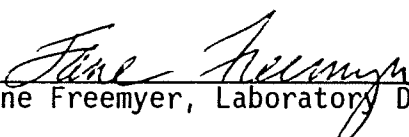
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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
12-400-2	GW-10	20 DEC 95	
12-400-3	GW-7	20 DEC 95	
PARAMETER	12-400-2	12-400-3	
Chloride (300.0), mg/L	22	18	
Nitrate (300.0), mg/L	38	37	
Sulfate (300.0), mg/L	60	44	
Turbidity (180.1), NTU	6.4	13	
Dissolved Solids (160.1), mg/L	620	320	
Alkalinity (310.1)			
Carbonate Alk (as CaCO ₃), mg/L	<10	<10	
Bicarbonate Alk (as CaCO ₃), mg/L	410	180	
Hydroxide Alk (as CaCO ₃), mg/L	<10	<10	
Total Alkalinity (as CaCO ₃), mg/L	410	180	
Calcium (6010), mg/L	120	92	
Magnesium (6010), mg/L	25	19	
Potassium (6010), mg/L	3.9	3.1	
Sodium (6010), mg/L	24	21	
Digestion (3010), Date	01/03/96	01/03/96	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
12-400-2	GW-10	20 DEC 95	
12-400-3	GW-7	20 DEC 95	
PARAMETER	12-400-2	12-400-3	
GRO/DRO (8015M)			
Date Analyzed	01/02/96	01/02/96	
Date Extracted	12/21/95	12/21/95	
Dilution Factor, Times	1	1	
TPH (total), mg/L	<2	<2	
Other GRO/DRO (8015M)	---	---	
Surrogates **			
Naphthalene Reported, mg/L	1.82	1.81	
Naphthalene Theoretical, mg/L	2.00	2.00	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
12-400-2	GW-10	20 DEC 95	
12-400-3	GW-7	20 DEC 95	
PARAMETER	12-400-2	12-400-3	
E524.2/VOC (524.2)			
Date Analyzed	01/03/96	01/03/96	
Dilution Factor, Times	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2	
1,1,1-Trichloroethane, ug/L	48	14	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2	
1,1,2-Trichloroethane, ug/L	5.3	0.53	
1,1-Dichloroethane, ug/L	11	14	
1,1-Dichloroethene, ug/L	35	9.2	
1,1-Dichloropropene, ug/L	<0.2	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5	
1,2-Dibromoethane, ug/L	<0.2	<0.2	
1,2-Dichloroethane, ug/L	2.0	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	<0.2	
1,2-Dichloropropane, ug/L	<0.2	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	<0.2	
1,3-Dichloropropane, ug/L	<0.2	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	<0.2	
2,2-Dichloropropane, ug/L	<0.2	<0.2	
2-Chlorotoluene, ug/L	<0.2	<0.2	
4-Chlorotoluene, ug/L	<0.2	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
12-400-2	GW-10	20 DEC 95	
12-400-3	GW-7	20 DEC 95	
PARAMETER	12-400-2	12-400-3	
Bromobenzene, ug/L	<0.2	<0.2	
Bromochloromethane, ug/L	<0.2	<0.2	
Bromodichloromethane, ug/L	<0.2	<0.2	
Bromomethane, ug/L	<0.5	<0.5	
Benzene, ug/L	2.7	0.59	
Bromoform, ug/L	<0.5	<0.5	
Chlorobenzene, ug/L	<0.2	<0.2	
Carbon Tetrachloride, ug/L	5.3	2.2	
Chloroethane, ug/L	<0.2	<0.2	
Chloroform, ug/L	90	21	
Chloromethane, ug/L	<0.5	<0.5	
Dibromochloromethane, ug/L	<0.2	<0.2	
Dibromomethane, ug/L	<0.2	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	0.44	
Ethylbenzene, ug/L	<0.2	<0.2	
Freon 113, ug/L	<0.2	<0.2	
Hexachlorobutadiene, ug/L	<0.2	<0.2	
Isopropylbenzene, ug/L	<0.2	<0.2	
Methylene chloride, ug/L	<1	<1	
N-Butylbenzene, ug/L	<0.2	<0.2	
N-Propylbenzene, ug/L	<0.2	<0.2	
Naphthalene, ug/L	<1	<1	
Styrene, ug/L	<0.2	<0.2	
Trichloroethene, ug/L	3200	2400	
Trichlorofluoromethane, ug/L	<0.2	<0.2	
Toluene, ug/L	<0.2	<0.2	

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Page 5

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
12-400-2	GW-10	20 DEC 95	
12-400-3	GW-7	20 DEC 95	
PARAMETER	12-400-2	12-400-3	
Tetrachloroethene, ug/L	44	7.7	
Vinyl chloride, ug/L	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	140	45	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.4	<0.4	
o-Xylene, ug/L	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	0.20	
sec-Butylbenzene, ug/L	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	1.1	0.39	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	
Other E524.2/VOC (524.2)	---	---	
Surrogates **			
1,2-Dichlorobenzene-d4 Rep., ug/L	3.73	3.86	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00	
4-Bromofluorobenzene Rep., ug/L	4.78	4.88	
4-Bromofluorobenzene Theo., ug/L	5.00	5.00	

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
12-400-4	EB-Pump	20 DEC 95
PARAMETER	12-400-4	
E524.2/VOC (524.2)		
Date Analyzed	01/03/96	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	0.38	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	0.34	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
12-400-4	EB-Pump	20 DEC 95
PARAMETER	12-400-4	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.65	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	<0.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	1.8	
Vinyl chloride, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
12-400-4	EB-Pump	20 DEC 95
PARAMETER	12-400-4	
cis-1,2-Dichloroethene, ug/L	0.84	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.4	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	0.97	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC (524.2)	---	
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	3.82	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	
4-Bromofluorobenzene Rep., ug/L	4.94	
4-Bromofluorobenzene Theo., ug/L	5.00	

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Linda Seddes FOR DS
Dick Swenson, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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APPENDIX C
CHAIN-OF-CUSTODY DOCUMENTS

[illegible]

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

*KEY: AG—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum

Disposai arrangements:

G95-11-397

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801 Western Avenue, Glendale, CA 91201 (818) 247-5737

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum
WW—Wastewater

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**RESULTS OF GROUNDWATER MONITORING
FIRST AND SECOND QUARTERS 1995**

**AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

VOLUME I

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July 19, 1996
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Prepared by:

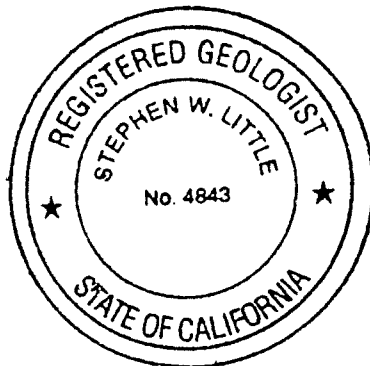
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Reviewed by:

Steve Little

Steve Little, R.G.
Principal Geologist



1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the first and second quarters of 1995 was conducted at the AlliedSignal Aerospace property in North Hollywood, California on March 6-10 and September 18-21, 1995, respectively, in accordance with the California Regional Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. In accordance with the RWQCB approved *Soil Gas Monitoring Summary* report prepared by Hydrologue, Inc., dated March 3, 1995, two on-site groundwater monitoring wells (GW-2 and GW-3) and four off-site (located on Kaiser Permanente Property) groundwater monitoring wells (GW-7 through GW-10) were sampled during the two groundwater monitoring events. Groundwater monitoring well GW-1, located on site, was not sampled during these monitoring episodes. This well was damaged during the remedial activities conducted as a part of on-site treatment of shallow soil impacted by Total Petroleum Hydrocarbons (TPH).

During the period between March 6 and September 18, 1995, groundwater levels increased between 9.55 feet (groundwater monitoring well GW-6) and 13.98 feet (groundwater monitoring well GW-9). Groundwater levels beneath the Site and the adjacent Kaiser property increased in groundwater monitoring wells GW-2, GW-3, GW-4, GW-6, GW-8 and GW-9 between 0.23 feet (groundwater monitoring well GW-4) and 3.45 feet (groundwater monitoring well GW-6) during the period between December 8, 1994 and March 6, 1995. The groundwater levels in groundwater monitoring wells GW-5, GW-7 and GW-10 decreased between 0.34 feet (GW-7) and 0.60 feet (GW-10) over the same period. Based on the groundwater level measurements obtained on January 17, 1995, the instantaneous groundwater flow direction was northeasterly beneath the western portion of the Site and the central portion of the Kaiser property, and north/northwesterly beneath the eastern portion of the Home Depot property. The groundwater level measurements collected on February 28, 1995 indicated that the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. Based on the groundwater level measurements obtained on March 6, 1995, the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. The instantaneous groundwater flow direction was southeasterly beneath the Site, the Kaiser property and the Home Depot property based on the September 18, 1995 measurements. Determination of an average groundwater flow direction based on the groundwater contours in a transient system such as the one present beneath the Site is questionable.

Consistent with regional data, nitrate was detected in the first quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 through GW-10 and from second

quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL). The compound Trichloroethene (TCE) was detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 and in the second quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-10 at concentrations above the DHS MCL. The compound Tetrachloroethene (PCE) was detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-3 and GW-9 and from the second quarter 1995 groundwater sample obtained from groundwater monitoring well GW-2 at concentrations above the DHS MCL. The Carbon Tetrachloride (CT) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-8 and GW-9; the cis-1,2-Dichloroethene (cis-1,2-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-3, GW-7 and GW-10; the 1,1-Dichloroethene (1,1-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7; and the 1,1-Dichloroethane (1,1-DCA) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 were all above their respective DHS MCLs during the March 1995 groundwater sampling event. CT concentrations detected in groundwater samples obtained from groundwater monitoring wells GW-3 and GW-7 were also above the DHS MCL during the second quarter 1995 groundwater sampling episode. All other Volatile Organic Compounds (VOCs) detected in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 during the first and second quarter 1995 sampling events were either non-detect or present at concentrations below their respective DHS MCLs.

During the last eight groundwater sampling events, concentrations of TCE in groundwater generally increased from November 1993 to February 1994, but subsequently decreased in several of the groundwater monitoring wells between February/March 1994 and May 1994. TCE concentrations again increased in groundwater samples collected from all the groundwater monitoring wells between May 1994 and August/September 1994 and then decreased in groundwater samples collected from the groundwater monitoring wells between August/September 1994 and November/December 1994. TCE concentrations increased in groundwater samples obtained from all the groundwater monitoring wells between November/December 1994 and March 1995 and then decreased between March and September 1995. For example, the TCE concentrations detected in groundwater samples collected from groundwater monitoring wells GW-1, GW-2, and GW-7 through GW-10 increased between one and two orders of magnitude from the November 1993 groundwater sampling event to the February 1994 groundwater sampling event, whereas the TCE concentrations in groundwater samples collected from groundwater monitoring well GW-3 remained consistent during this period. However, the TCE concentrations detected in groundwater samples from all six groundwater monitoring wells decreased as much as two orders of magnitude from the February/March 1994 sampling episode to the May 1994 sampling event. The concentrations of TCE detected in groundwater samples obtained from

all six groundwater monitoring wells increased as much as three orders of magnitude from the May 1994 sampling event to the August/September 1994 sampling episodes. In addition, the concentrations of TCE detected in groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-8 through GW-10 decreased up to two orders of magnitude from the August/September 1994 sampling events to the November/December 1994 sampling episodes, whereas the TCE concentration in groundwater samples collected from groundwater monitoring well GW-7 increased one order of magnitude during the same period. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 increased up to two orders of magnitude from the November/December 1994 sampling episodes to the March 1995 sampling event, whereas the TCE concentration in groundwater samples collected from groundwater monitoring well GW-5 decreased slightly over the same period. Finally, the concentrations of TCE detected in groundwater samples obtained from all six groundwater monitoring wells decreased up to two orders of magnitude from the March 1995 sampling event to the September 1995 sampling episodes. An off-site source together with groundwater extraction from production wells in the North Hollywood and Rinaldi-Toluca well fields may account for the fluctuation in TCE concentrations detected in groundwater samples collected from the groundwater monitoring wells at the Site.

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FIRST AND SECOND QUARTERS 1995**

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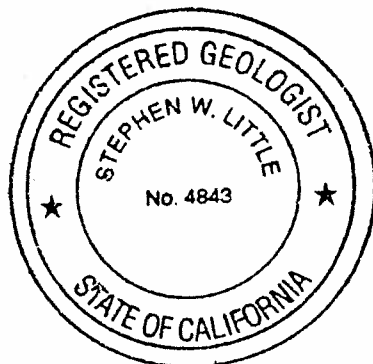
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FIRST AND SECOND QUARTERS 1995**

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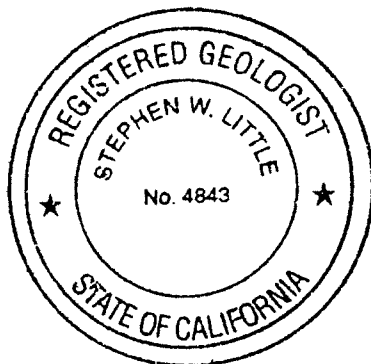
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1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the first and second quarters of 1995 was conducted at the AlliedSignal Aerospace property in North Hollywood, California on March 6-10 and September 18-21, 1995, respectively, in accordance with the California Regional Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. In accordance with the RWQCB approved *Soil Gas Monitoring Summary* report prepared by Hydrologue, Inc., dated March 3, 1995, two on-site groundwater monitoring wells (GW-2 and GW-3) and four off-site (located on Kaiser Permanente Property) groundwater monitoring wells (GW-7 through GW-10) were sampled during the two groundwater monitoring events. Groundwater monitoring well GW-1, located on site, was not sampled during these monitoring episodes. This well was damaged during the remedial activities conducted as a part of on-site treatment of shallow soil impacted by Total Petroleum Hydrocarbons (TPH).

During the period between March 6 and September 18, 1995, groundwater levels increased between 9.55 feet (groundwater monitoring well GW-6) and 13.98 feet (groundwater monitoring well GW-9). Groundwater levels beneath the Site and the adjacent Kaiser property increased in groundwater monitoring wells GW-2, GW-3, GW-4, GW-6, GW-8 and GW-9 between 0.23 feet (groundwater monitoring well GW-4) and 3.45 feet (groundwater monitoring well GW-6) during the period between December 8, 1994 and March 6, 1995. The groundwater levels in groundwater monitoring wells GW-5, GW-7 and GW-10 decreased between 0.34 feet (GW-7) and 0.60 feet (GW-10) over the same period. Based on the groundwater level measurements obtained on January 17, 1995, the instantaneous groundwater flow direction was northeasterly beneath the western portion of the Site and the central portion of the Kaiser property, and north/northwesterly beneath the eastern portion of the Home Depot property. The groundwater level measurements collected on February 28, 1995 indicated that the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. Based on the groundwater level measurements obtained on March 6, 1995, the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. The instantaneous groundwater flow direction was southeasterly beneath the Site, the Kaiser property and the Home Depot property based on the September 18, 1995 measurements. Determination of an average groundwater flow direction based on the groundwater contours in a transient system such as the one present beneath the Site is questionable.

Consistent with regional data, nitrate was detected in the first quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 through GW-10 and from second

quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL). The compound Trichloroethene (TCE) was detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 and in the second quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-10 at concentrations above the DHS MCL. The compound Tetrachloroethene (PCE) was detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-3 and GW-9 and from the second quarter 1995 groundwater sample obtained from groundwater monitoring well GW-2 at concentrations above the DHS MCL. The Carbon Tetrachloride (CT) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-8 and GW-9; the cis-1,2-Dichloroethene (cis-1,2-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-3, GW-7 and GW-10; the 1,1-Dichloroethene (1,1-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7; and the 1,1-Dichloroethane (1,1-DCA) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 were all above their respective DHS MCLs during the March 1995 groundwater sampling event. CT concentrations detected in groundwater samples obtained from groundwater monitoring wells GW-3 and GW-7 were also above the DHS MCL during the second quarter 1995 groundwater sampling episode. All other Volatile Organic Compounds (VOCs) detected in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 during the first and second quarter 1995 sampling events were either non-detect or present at concentrations below their respective DHS MCLs.

During the last eight groundwater sampling events, concentrations of TCE in groundwater generally increased from November 1993 to February 1994, but subsequently decreased in several of the groundwater monitoring wells between February/March 1994 and May 1994. TCE concentrations again increased in groundwater samples collected from all the groundwater monitoring wells between May 1994 and August/September 1994 and then decreased in groundwater samples collected from the groundwater monitoring wells between August/September 1994 and November/December 1994. TCE concentrations increased in groundwater samples obtained from all the groundwater monitoring wells between November/December 1994 and March 1995 and then decreased between March and September 1995. For example, the TCE concentrations detected in groundwater samples collected from groundwater monitoring wells GW-1, GW-2, and GW-7 through GW-10 increased between one and two orders of magnitude from the November 1993 groundwater sampling event to the February 1994 groundwater sampling event, whereas the TCE concentrations in groundwater samples collected from groundwater monitoring well GW-3 remained consistent during this period. However, the TCE concentrations detected in groundwater samples from all six groundwater monitoring wells decreased as much as two orders of magnitude from the February/March 1994 sampling episode to the May 1994 sampling event. The concentrations of TCE detected in groundwater samples obtained from

all six groundwater monitoring wells increased as much as three orders of magnitude from the May 1994 sampling event to the August/September 1994 sampling episodes. In addition, the concentrations of TCE detected in groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-8 through GW-10 decreased up to two orders of magnitude from the August/September 1994 sampling events to the November/December 1994 sampling episodes, whereas the TCE concentration in groundwater samples collected from groundwater monitoring well GW-7 increased one order of magnitude during the same period. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 increased up to two orders of magnitude from the November/December 1994 sampling episodes to the March 1995 sampling event, whereas the TCE concentration in groundwater samples collected from groundwater monitoring well GW-5 decreased slightly over the same period. Finally, the concentrations of TCE detected in groundwater samples obtained from all six groundwater monitoring wells decreased up to two orders of magnitude from the March 1995 sampling event to the September 1995 sampling episodes. An off-site source together with groundwater extraction from production wells in the North Hollywood and Rinaldi-Toluca well fields may account for the fluctuation in TCE concentrations detected in groundwater samples collected from the groundwater monitoring wells at the Site.

2.0 INTRODUCTION

On behalf of AlliedSignal Aerospace, *SECOR* International Incorporated (*SECOR*) has prepared this report presenting the results of the first and second quarter 1995 groundwater monitoring events conducted by *SECOR* at the AlliedSignal Aerospace property, and the adjacent Kaiser Permanente Property located at 11600 Sherman Way in North Hollywood, California (Figure 1). Groundwater sampling for the first quarter was performed in March 1995, and groundwater sampling for the second quarter was performed in September 1995.

In accordance with the RWQCB approved *Soil Gas Monitoring Summary* report prepared by Hydrologue, Inc., dated March 3, 1995, two on-site groundwater monitoring wells (GW-2 and GW-3) and four off-site (located on Kaiser Permanente Property) groundwater monitoring wells (GW-7 through GW-10) were sampled during the two groundwater monitoring events. Groundwater sampling of groundwater monitoring wells GW-2 and GW-3 at the Site and groundwater monitoring wells GW-7 through GW-10 at the adjacent Kaiser property (Figure 2) was conducted in accordance with the RWQCB WIP guidelines. Groundwater monitoring well GW-1 was not sampled during the above-mentioned groundwater sampling events, since it was damaged during the remedial activities conducted as part of the on-site treatment of shallow soil impacted by Total Petroleum Hydrocarbons (TPH).

Groundwater monitoring activities commenced at the Site with the installation of a two-level groundwater monitoring well, Well W-1, in 1987. After two monitoring events were conducted, the groundwater monitoring well was abandoned at the request of the RWQCB by *SECOR* in June 1993 in accordance with a workplan approved by the RWQCB. This former groundwater monitoring well, W-1, was located near the southwestern corner of the AlliedSignal property (Figure 2).

Quarterly groundwater monitoring at the Site has been conducted regularly since the third quarter of 1991. Historical groundwater elevations and analytical results from the most recent and previous groundwater monitoring events are presented in Tables 4 through 18 and Figures 9 through 51.

3.0 WATER LEVEL MEASUREMENTS

During the first quarter 1995, depth to groundwater was measured in two on-site groundwater monitoring wells (GW-2 and GW-3) and seven off-site groundwater monitoring wells (GW-4 through GW-10) on January 17, February 28 and March 6, 1995 with an Environmental Instruments Company (EI) water level meter according to the protocol described in Appendix A. During the second quarter 1995, depth to groundwater was measured in two on-site groundwater monitoring wells (GW-2 and GW-3) and six off-site groundwater monitoring wells (GW-4, GW-5, GW-7 through GW-10) on September 18, 1995. Water level data obtained on January 17, February 28, March 6, and September 18, 1995 are summarized in Table 1.

The data indicate that groundwater levels increased in groundwater monitoring wells GW-2, GW-3, GW-4, GW-6, GW-8 and GW-9 between 0.23 feet (groundwater monitoring well GW-4) and 3.45 feet (groundwater monitoring well GW-6) during the period between December 8, 1994 and March 6, 1995. The groundwater levels in groundwater monitoring wells GW-5, GW-7 and GW-10 decreased between 0.34 feet (groundwater monitoring well GW-7) and 0.60 feet (groundwater monitoring well GW-10) over the same period. During the period between March 6 and September 18, 1995, groundwater levels increased between 9.55 feet (groundwater monitoring well GW-6) and 13.98 feet (groundwater monitoring well GW-9) beneath the Site. Historic groundwater elevations are presented in Table 4.

The groundwater level measurements obtained on January 17, 1995 indicate that the instantaneous groundwater flow direction was northeasterly at a gradient of 0.0016 beneath the western portion of the Site and the central portion of the Kaiser property, and north/northwesterly at a gradient of 0.0038 beneath the eastern portion of the Home Depot property. Based on groundwater level measurements obtained on February 28 and March 6, 1995, the instantaneous groundwater flow direction was southwesterly at a gradient of 0.003 beneath the Site and the Kaiser property and southwesterly at a gradient of 0.0055 beneath the Home Depot property. Based on groundwater level measurements obtained on September 18, 1995, the instantaneous groundwater flow direction was southeasterly at a gradient of 0.0023 beneath the Site and the Kaiser property, and southeasterly at a gradient of 0.0045 beneath the Home Depot property. Figures 3 through 6 present groundwater elevation contour maps based on the January 17, February 28, March 6 and September 18, 1995 groundwater surface elevations, respectively.

The groundwater flow direction beneath, and in the vicinity of the Site, appears to be strongly influenced by groundwater extraction from aeration wells and from supply wells in the North Hollywood and Rinaldi-Toluca well fields located south and northwest of the Site, respectively (Remedial Investigation Report for Groundwater Contamination in the San Fernando Valley - Volume 1, James M. Montgomery, December 1992). Although groundwater elevation contour maps have

been prepared based on groundwater elevations measured at the Site, the calculated groundwater flow direction(s) are representative of instantaneous groundwater flow direction, due to the influence of regional pumping. Under transient conditions, groundwater pathlines and streamlines are not coincidental.

4.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 were purged with a submersible electric pump and sampled with a Teflon™ bailer on March 8-10, and September 20-21, 1995 according to the protocol described in Appendix A. Groundwater monitoring well GW-1 was not sampled during the quarterly events, since it was damaged during the remedial activities conducted as part of on-site treatment of shallow soil impacted by Total Petroleum Hydrocarbons (TPH).

All groundwater analyses were conducted by BC Analytical (BCA) in Glendale, California. For Quality Assurance/Quality Control (QA/QC) purposes, field blank and trip blank samples were collected on March 8-10, 1995 and September 20-21, 1995. The groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 on March 8-10 and September 20-21, 1995 were delivered to BCA in Glendale and analyzed for the following:

- EPA Method 524.2 - Volatile organics;
- EPA Method 8015M - Total Extractable Petroleum Hydrocarbons;
- EPA Method 300.0-L - Sulfates, chlorides;
- EPA Method 310.1-L - Alkalinity - total, hydroxyl, carbonate, bicarbonate;
- EPA Method 6010-L - Calcium, magnesium, potassium, sodium;
- EPA Method 160.1 and 180.1 - Total Dissolved Solids and turbidity;
- EPA Method 300.0-N - Nitrate and nitrite;
- EPA Method 350.1-L - Ammonia nitrogen (March 8-10, 1995 samples only)

Due to low dilution factors some compounds exceeded calibration limits of the laboratory equipment during the initial analysis for volatile organics in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-9; consequently, the March 8-10, 1995 groundwater samples were re-analyzed using EPA Test Method 524.2.

All samples were immediately placed on ice following collection. Individual samples were collected in pre-cleaned, analysis-specific containers supplied by the laboratory with the appropriate preservative and clearly marked and dated for identification. Samples were securely packed and delivered to the laboratory within 24 hours of collection via courier. All samples were preserved and stored for analysis no longer than the maximum allowable holding time. The following table presents the appropriate sample containers, holding time, container size and preservative for each analytical method used in this project.

TABLE 4.1 - SAMPLING GUIDE			
ANALYSIS	HOLDING TIME	CONTAINER SIZE	PRESERVATIVE
Volatile Organics-EPA Test Method 524.2	14 days	2-40 ml (glass) with septum	Cool, No HS, HCL
Total Extractable Petroleum Hydrocarbons-EPA Test Method 8015 (Modified for diesel #2 and gasoline)	14 days	4 oz (amber glass) with septum	Cool, No HS, HCL
Sulfates & Chlorides-EPA Test Method 300.0 L	28 days	4 oz (plastic)	Cool
Alkalinity (total, hydroxyl, carbonate, bicarbonate)-EPA Test Method 310.1 L	14 Days	4 oz (plastic)	Cool
Calcium, Magnesium, Potassium, Sodium-EPA Test Method 6010 L	6 months	16 oz (plastic)	Cool, HNO ₃
Total Dissolved Solids-EPA Test Method 160.1	7 days	16 oz (plastic)	Cool
Turbidity-EPA Test Method 180.1	2 days	4 oz (plastic)	Cool
Nitrate & Nitrite-EPA Test Method 300.0 N	48 hours	4 oz (plastic)	Cool
Ammonia Nitrogen-EPA Test Method 350.1 L	28 days	4 oz (plastic)	Cool, H ₂ SO ₄

Note: HS - Headspace
HCL - Hydrochloric Acid
H₂SO₄ - Sulfuric Acid
HNO₃ - Nitric Acid

Laboratory reports and chain-of-custody documents for the first (March, 1995), and second (September, 1995) quarterly groundwater monitoring events are presented in Appendices B and C, respectively.

5.0 DATA QUALITY ASSURANCE/QUALITY CONTROL

BCA located in Glendale, California performed all the laboratory analyses for the first and second quarters of 1995. BCA followed the details of the data reporting process outlined in the Laboratory Requirements for Data Validation (EPA Document Control Number 9QA-07-90) and the RWQCB Quality Assurance/Quality Control Guidance Document for Well Investigation Program - San Gabriel and San Fernando Basins.

Field/equipment blanks and trip blanks were analyzed along with the groundwater samples collected on March 8-10, and September 20-21, 1995. The field/equipment blanks were used to demonstrate that the sample bottle and the sampling procedures were not contaminating the groundwater sample. Laboratory-grade water supplied by BCA was transported to one of the groundwater monitoring wells and a sample of the laboratory-grade water was prepared using a Teflon™ bailer. Trip blanks, supplied by BCA, were used to provide a measure of the positive interferences introduced by the sample preservation, transportation, storage, and analysis. Case summaries describing the data Quality Assurance/Quality Control (QA/QC) are presented in Volume II, Appendix B for the first quarter 1995, and in Volume III, Appendix B for the second quarter 1995.

No VOCs were detected in the field/equipment and trip blank samples collected on March 8-10, 1995. No VOCs were detected in the trip blank sample collected on September 20-21, 1995. Chloroform was detected at a concentration of 0.31 $\mu\text{g}/\ell$ in the field/equipment blank sample collected on September 20-21, 1995.

6.0 GROUNDWATER ANALYTICAL RESULTS

6.1 INORGANIC COMPOUNDS

Chloride, Sulfate, Total Alkalinity, Calcium, Magnesium, Potassium, Sodium, Total Dissolved Solids (TDS), Turbidity and Nitrate were detected in groundwater samples collected from all six groundwater monitoring wells (GW-2, GW-3 and GW-7 through GW-10) sampled during the first and second quarter 1995 monitoring events. The following table presents the low and high concentration of each inorganic constituent detected during the first and second quarters of 1995, and the corresponding groundwater monitoring well in which these values were measured:

TABLE 6.1 - INORGANIC COMPOUNDS DETECTED (all results in milligrams per liter, except turbidity)				
Constituent	Low		High	
	First Quarter	Second Quarter	First Quarter	Second Quarter
Chloride	25 (GW-2)	27 (GW-9, GW-10)	41 (GW-7)	40 (GW-2)
Sulfate	56 (GW-10)	49 (GW-3)	77 (GW-3, GW-7)	61 (GW-2, GW-9)
Total Alkalinity	230 (GW-9)	210 (GW-9)	360 (GW-7)	280 (GW-8)
Calcium	93 (GW-2)	82 (GW-9)	140 (GW-7)	110 (GW-2)
Magnesium	20 (GW-2)	19 (GW-3, GW-9, GW-10)	30 (GW-7)	25 (GW-2, GW-8)
Potassium	4.0 (GW-2)	4.0 (GW-7)	5.8 (GW-8)	6.2 (GW-8)
Sodium	23 (GW-2)	23 (GW-3)	35 (GW-8)	30 (GW-8)
TDS	460 (GW-2)	430 (GW-3, GW-9)	650 (GW-7)	530 (GW-2, GW-8)
Turbidity*	0.80 (GW-7)	0.4 (GW-10)	23 (GW-2)	43 (GW-8)
Nitrate	35 (GW-2)	46 (GW-9, GW-10)	85 (GW-9)	55 (GW-2, GW-7)

* Turbidity measured in Nephelometric Turbidity Units.

Nitrite was not detected in groundwater samples collected from any of the six groundwater monitoring wells above detection limits of 0.1 milligrams per liter (mg/l) to 1 (mg/l) during the first quarter and second quarter 1995 groundwater monitoring events. Ammonia nitrogen was detected at a concentration of 0.11 mg/l in the groundwater sample collected from groundwater monitoring well GW-7 during the first quarter 1995. Ammonia nitrogen was not detected in the groundwater samples collected from the other five groundwater monitoring wells above a detection limit of 0.1 mg/l. Second quarter 1995 groundwater samples were not analyzed for ammonia nitrogen.

During the previously mentioned groundwater monitoring episodes of 1995, Sodium was detected in groundwater samples collected from all six groundwater monitoring wells at concentrations above the EPA Suggested No-Adverse-Response Level (SNARL) of 2 mg/l. SNARLs are human health-related criteria that are published by the National Academy of Sciences. The turbidity levels detected in the first quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-9 and GW-10 and in the second quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3, GW-8 and GW-9 were above the DHS Secondary MCL of 5 Nephelometric Turbidity Units (NTU). Primary MCLs include a potential for health risk, whereas, secondary MCLs are derived from human welfare considerations (usually taste and odor) and do not include a consideration of health risk. The concentrations of nitrate detected in the first quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 through GW-10 and in the second quarter 1995 groundwater samples collected from all six groundwater monitoring wells were all above the DHS MCL of 45 mg/l.

No inorganic compounds were detected in the field/equipment blank samples above their respective detection limits.

Inorganic compound analytical results for the first quarter and second quarter 1995 groundwater monitoring events are presented in Table 2. Historic inorganic compound analytical results are presented in Tables 5 through 11. Please note that nitrate values reported prior to January 1993 were quantified as N, whereas recent data reported nitrate as NO₃ in accordance with the Sampling and Analysis Plan approved by the RWQCB. Nitrate concentrations detected during the first quarter and second quarter 1995 groundwater monitoring events are shown on Figure 7 and Figure 8, respectively.

6.2 VOLATILE ORGANIC COMPOUNDS

6.2.1 EPA Test Method 524.2 and 8015 (Modified for diesel #2 and gasoline) Results

TCE was detected at concentrations ranging from 71 micrograms per liter ($\mu\text{g}/\ell$) (groundwater monitoring well GW-9) to 5,500 $\mu\text{g}/\ell$ (groundwater monitoring well GW-7) in the groundwater samples collected during the first quarter of 1995 from the six groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10. The highest concentration of TCE was detected in groundwater samples obtained from groundwater monitoring well GW-7 located along the southern boundary of the Kaiser property. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 were above the DHS MCL of 5 $\mu\text{g}/\ell$. During the second quarter 1995, TCE was detected at concentrations one order of magnitude below those of the first quarter, ranging from 0.47 $\mu\text{g}/\ell$ (groundwater monitoring well GW-9) to 110 $\mu\text{g}/\ell$ (groundwater monitoring well GW-7) in the groundwater samples collected from the six groundwater monitoring wells. The concentrations of TCE detected in groundwater samples obtained from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-10 were above the DHS MCL of 5 $\mu\text{g}/\ell$.

PCE was detected at concentrations ranging from 2.7 $\mu\text{g}/\ell$ to 9.2 $\mu\text{g}/\ell$ in the groundwater samples obtained from groundwater monitoring wells GW-2, GW-3, GW-8 and GW-9 during the first quarter of 1995. PCE was not detected above detection limits of 20 $\mu\text{g}/\ell$ to 10 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-7 and GW-10, respectively. The concentrations of PCE detected in the groundwater samples obtained from groundwater monitoring wells GW-3 and GW-9 were above the DHS MCL of 5 $\mu\text{g}/\ell$. During the second quarter 1995 groundwater monitoring episode, PCE was detected at concentrations ranging from 0.48 $\mu\text{g}/\ell$ to 5.0 $\mu\text{g}/\ell$ in the groundwater samples obtained from all six groundwater monitoring wells. The concentration of PCE detected in the groundwater sample collected from groundwater monitoring well GW-2 was equal to the DHS MCL of 5 $\mu\text{g}/\ell$.

The compound 1,1,1-Trichloroethane (1,1,1-TCA) was detected at concentrations ranging from 1.6 $\mu\text{g}/\ell$ to 51 $\mu\text{g}/\ell$ in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-9. 1,1,1-TCA was not detected above a detection limit of 10 $\mu\text{g}/\ell$ in the groundwater sample collected from groundwater monitoring well GW-10. 1,1,1-TCA was detected at a concentration of 1.6 $\mu\text{g}/\ell$ in the second quarter 1995 groundwater sample obtained from groundwater monitoring well GW-7. 1,1,1-TCA was not detected above a detection limit of 0.2 $\mu\text{g}/\ell$ in the other five groundwater samples. All the concentrations of 1,1,1-TCA detected in groundwater samples obtained during the previously mentioned groundwater monitoring episodes of 1995 were below the DHS MCL of 200 $\mu\text{g}/\ell$.

The compound 1,1-DCA was detected at concentrations ranging from 0.9 $\mu\text{g}/\ell$ to 37 $\mu\text{g}/\ell$ in the first quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7. 1,1-DCA was not detected in the other three groundwater samples above detection limits of 0.2 $\mu\text{g}/\ell$ to 10 $\mu\text{g}/\ell$. The concentrations of 1,1-DCA detected in the groundwater samples obtained from groundwater monitoring wells GW-3 and GW-7 were above the DHS MCL of 5 $\mu\text{g}/\ell$. During the second quarter 1995 groundwater monitoring episode, 1,1-DCA was detected at concentrations ranging from 0.33 $\mu\text{g}/\ell$ to 0.67 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-7 and GW-8. 1,1-DCA was not detected in the other two groundwater samples above a detection limit of 0.2 $\mu\text{g}/\ell$. All the concentrations of 1,1-DCA detected in the groundwater samples obtained during the previously mentioned groundwater monitoring episodes of 1995 were below the DHS MCL of 5 $\mu\text{g}/\ell$.

The compound 1,1-DCE was detected at concentrations ranging from 2.0 $\mu\text{g}/\ell$ to 22 $\mu\text{g}/\ell$ in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-9. 1,1-DCE was not detected in the groundwater sample collected from groundwater monitoring well GW-10 above a detection limit of 10 $\mu\text{g}/\ell$. The concentrations of 1,1-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 were above the DHS MCL of 6 $\mu\text{g}/\ell$. 1,1-DCE was detected at concentrations of 0.63 $\mu\text{g}/\ell$ and 1.2 $\mu\text{g}/\ell$ in the second quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-3 and GW-7, respectively. 1,1-DCE was not detected in the other four groundwater samples above the detection limit of 0.2 $\mu\text{g}/\ell$. The concentrations of 1,1-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-3 and GW-7 during the second quarter groundwater monitoring episode were below the DHS MCL of 6 $\mu\text{g}/\ell$.

Bromodichloromethane was detected at a concentration of 0.3 $\mu\text{g}/\ell$ in the first quarter 1995 groundwater samples obtained from groundwater monitoring well GW-2. Bromodichloromethane was not detected above detection limits of 0.2 $\mu\text{g}/\ell$ to 20 $\mu\text{g}/\ell$ in the other five groundwater samples during the first quarter groundwater monitoring episode. This compound was not detected above detection limit of 0.2 $\mu\text{g}/\ell$ during the second quarter 1995 groundwater monitoring episode in any of the groundwater samples collected. The concentrations of Bromodichloromethane detected during the first quarter and second quarter 1995 groundwater monitoring episodes were below the DHS MCL of 100 $\mu\text{g}/\ell$ for trihalomethanes (THMs).

The compound Carbon Tetrachloride (CT) was detected at concentrations ranging from 1.4 $\mu\text{g}/\ell$ to 3.7 $\mu\text{g}/\ell$ in the first quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-8 and GW-9. CT was not detected above detection limits of 10 $\mu\text{g}/\ell$ to 20 $\mu\text{g}/\ell$ in the other two groundwater samples. All the concentrations of CT detected were above the DHS MCL of 0.5 $\mu\text{g}/\ell$. During the second quarter 1995 groundwater monitoring episode, CT was detected at concentrations of 0.84 $\mu\text{g}/\ell$ and 1.6 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-3 and GW-7, respectively. CT was not detected above a

detection limit of 0.2 $\mu\text{g}/\ell$ in the other four groundwater samples. The concentrations of CT detected in the samples collected from GW-3 and GW-7 were above the DHS MCL of 0.5 $\mu\text{g}/\ell$.

Chloroform was detected at concentrations ranging from 0.7 $\mu\text{g}/\ell$ to 64 $\mu\text{g}/\ell$ in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-9. Chloroform was not detected in the other groundwater sample above a detection limit of 10 $\mu\text{g}/\ell$. The concentrations of chloroform detected were below the DHS MCL of 100 $\mu\text{g}/\ell$ for THMs. Chloroform was detected at concentrations ranging from 0.42 $\mu\text{g}/\ell$ to 1.3 $\mu\text{g}/\ell$ in the second quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-10. Chloroform was not detected in the other groundwater sample above a detection limit of 0.2 $\mu\text{g}/\ell$. The concentrations of chloroform detected were below the DHS MCL of 100 $\mu\text{g}/\ell$ for THMs.

The compound cis-1,2-DCE was detected at concentrations ranging from 1.1 $\mu\text{g}/\ell$ to 70 $\mu\text{g}/\ell$ in the first quarter 1995 groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-10. Cis-1, 2-DCE was not detected above detection limits of 0.2 $\mu\text{g}/\ell$ in the groundwater sample obtained from groundwater monitoring well GW-9. The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-3, GW-7 and GW-10 were above the DHS MCL of 6.0 $\mu\text{g}/\ell$. Cis-1,2-DCE was detected at concentrations ranging from 0.37 $\mu\text{g}/\ell$ to 3.4 $\mu\text{g}/\ell$ in the second quarter 1995 groundwater samples collected from all six groundwater monitoring wells. The concentrations of cis-1,2-DCE detected in the six groundwater samples collected during the second quarter 1995 groundwater monitoring episode were below the DHS MCL of 6.0 $\mu\text{g}/\ell$.

Dichlorodifluoromethane (DCDFM) was detected at concentrations ranging from 0.64 $\mu\text{g}/\ell$ to 3.9 $\mu\text{g}/\ell$ in the second quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-10. DCDFM was not detected above a detection limit of 0.5 $\mu\text{g}/\ell$ in the groundwater sample collected from groundwater monitoring well GW-9. DCDFM was not detected above detection limits ranging from 0.5 $\mu\text{g}/\ell$ to 30 $\mu\text{g}/\ell$ during the first quarter 1995 groundwater monitoring episode in any of the groundwater samples collected.

The compound p-Isopropyl toluene was detected at concentrations of 0.48 $\mu\text{g}/\ell$ and 0.51 $\mu\text{g}/\ell$ in the second quarter 1995 groundwater samples collected from groundwater monitoring wells GW-3 and GW-7, respectively. P-isopropyl toluene was not detected in the groundwater samples collected from the other four groundwater monitoring wells. This compound was not detected above detection limits ranging from 0.2 $\mu\text{g}/\ell$ to 20 $\mu\text{g}/\ell$ during the first quarter 1995 groundwater monitoring episode in any of the groundwater samples collected.

Trans-1,2-Dichloroethene was detected at a concentration of 0.20 $\mu\text{g}/\ell$ in the second quarter 1995 groundwater sample obtained from groundwater monitoring well GW-2. Trans-1,2-Dichloroethene

was not detected in the groundwater samples from the other five groundwater monitoring wells. This compound was not detected above detection limits ranging from 0.2 $\mu\text{g}/\ell$ to 20 $\mu\text{g}/\ell$ during the first quarter 1995 groundwater monitoring episode in any of the groundwater samples collected.

All other VOCs were not detected above their respective detection limits, in the groundwater samples collected during the first and second quarter 1995 groundwater sampling events.

No VOCs were detected in the field/equipment blank and trip blank samples above their respective detection limits during the first quarter 1995 groundwater sampling event. No VOCs were detected in the trip blank sample prepared for the second quarter 1995 groundwater sampling event. Chloroform was detected in the second quarter 1995 field/equipment blank sample at a concentration of 0.31 $\mu\text{g}/\ell$.

VOC analytical results for the groundwater samples collected from the groundwater monitoring wells during the first quarter and second quarter 1995 groundwater monitoring episodes are presented in Table 3 and Figures 7 and 8. Historical VOC analytical results are presented in Tables 12 through 18. Historical groundwater surface elevations, nitrate and VOC concentrations for groundwater monitoring wells GW-1 through GW-10 are presented in Figures 9 through 51.

7.0 DISCUSSION

Based on groundwater level measurements obtained between December 8, 1994 and March 6, 1995, groundwater elevations increased in groundwater monitoring wells GW-2, GW-3, GW-4, GW-6, GW-8 and GW-9 between 0.23 feet (groundwater monitoring well GW-4) and 3.45 feet (groundwater monitoring well GW-6). The groundwater levels in groundwater monitoring wells GW-5, GW-7 and GW-10 decreased between 0.34 feet (groundwater monitoring well GW-7) and 0.60 feet (groundwater monitoring well GW-10) over the same period. During the period between March 6 and September 18, 1995, groundwater levels increased between 9.55 feet (groundwater monitoring well GW-6) and 13.98 feet (groundwater monitoring well GW-9). Based on the groundwater level measurements obtained on January 17, 1995, the instantaneous groundwater flow direction was northeasterly beneath the western portion of the Site and the central portion of the Kaiser property, and north/northwesterly beneath the eastern portion of the Home Depot property. The groundwater level measurements collected on February 28 and March 6, 1995 indicated that the instantaneous groundwater flow direction was southwesterly beneath the Site, the Kaiser property and the Home Depot property. The groundwater level measurements collected on September 18, 1995 indicated that the instantaneous groundwater flow direction was southeasterly beneath the Site, the Kaiser property and the Home Depot property. Instantaneous groundwater flow beneath the Site is significantly impacted by pumping of aeration wells and supply wells located within the Rinaldi-Toluca and North Hollywood well fields.

TCE was detected in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 during the first quarter 1995 and from groundwater monitoring wells GW-2, GW-3, GW-7, GW-8 and GW-10 during the second quarter 1995 groundwater sampling event at concentrations above the MCL. The concentrations of PCE detected in the groundwater samples obtained from groundwater monitoring wells GW-3 and GW-9 during the first quarter 1995 and from groundwater monitoring well GW-2 during the second quarter 1995 groundwater sampling events were above the MCL. The concentrations of 1,1-DCA detected in the groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 during the first quarter 1995 groundwater sampling event were above the MCL. The CT concentrations detected in the groundwater samples obtained during the first quarter 1995 groundwater sampling event from groundwater monitoring wells GW-2, GW-3, GW-8 and GW-9 were above the MCL. CT concentrations were also detected above the MCL in groundwater samples obtained from groundwater monitoring wells GW-3 and GW-7 during the second quarter 1995 groundwater sampling event. The concentrations of cis-1,2-DCE detected in the groundwater samples collected from groundwater monitoring wells GW-3, GW-7 and GW-10 during the first quarter 1995 groundwater monitoring episode were above the MCL. The concentrations of 1,1-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 during the first quarter 1995 were above the MCL. All other VOCs detected in the groundwater

samples collected from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 were either non-detect or present at concentrations below their respective MCLs.

Nitrate was detected in the groundwater samples collected from groundwater monitoring wells GW-3 and GW-7 through GW-10 during the first quarter 1995 groundwater monitoring episode and in groundwater samples collected from all six groundwater monitoring wells during the second quarter 1995 groundwater monitoring episode at concentrations above the MCL. The turbidity levels detected in the first quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-9 and GW-10 and in the second quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-3, GW-8 and GW-9 were above the secondary MCL. No other inorganic constituents were detected above the primary or secondary MCLs during the first quarter and second quarter 1995 groundwater sampling episodes.

In general, the concentrations of VOCs detected in groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 increased from the December 1994 groundwater sampling event to the March 1995 groundwater sampling episode. The concentrations of TCE detected in groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 increased from 13 $\mu\text{g}/\ell$, 36 $\mu\text{g}/\ell$, 440 $\mu\text{g}/\ell$, 8.6 $\mu\text{g}/\ell$, 9.4 $\mu\text{g}/\ell$ and 360 $\mu\text{g}/\ell$, respectively, during the December 1994 groundwater sampling event to averaged values of 215 $\mu\text{g}/\ell$, 1055 $\mu\text{g}/\ell$, 5100 $\mu\text{g}/\ell$, 180 $\mu\text{g}/\ell$, 79 $\mu\text{g}/\ell$ and 1100 $\mu\text{g}/\ell$, respectively, during the March 1995 groundwater monitoring episode. The TCE concentrations then decreased at least one order of magnitude from the March 1995 groundwater sampling event to the September 1995 groundwater sampling event. The concentrations of TCE detected in the second quarter 1995 groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-7 through GW-10 were 5.1 $\mu\text{g}/\ell$, 18 $\mu\text{g}/\ell$, 110 $\mu\text{g}/\ell$, 6.4 $\mu\text{g}/\ell$, 0.47 $\mu\text{g}/\ell$ and 21 $\mu\text{g}/\ell$, respectively. Presence of an off-site source together with groundwater extraction from the production wells in the North Hollywood, Tujunga and Rinaldi-Toluca well fields likely accounts for the fluctuation in TCE concentrations detected in groundwater samples collected from certain groundwater monitoring wells at the Site.

8.0 LIMITATIONS

SECOR has prepared this report for the exclusive use of AlliedSignal Aerospace, their representatives, and other authorized parties. The findings and conclusions presented herein are based primarily upon the laboratory analyses of groundwater samples collected during this study. All work has been conducted in accordance with generally accepted practices in the fields of environmental engineering, geology, and hydrogeology that exist in Los Angeles County at this time. No other warranty, either expressed or implied, is made.

TABLES

TABLE 1 - GROUNDWATER SURFACE ELEVATIONS
(all elevations in feet above mean sea level)

Well ID	Wellhead Elevation	Depth to Water (1/17/95)	Groundwater Elevation (1/17/95)	Depth to Water (02/28/95)	Groundwater Elevation (02/28/95)	Depth to Water (03/06/95)	Groundwater Elevation (03/06/95)	Depth to Water (09/18/95)	Groundwater Elevation (09/18/95)
GW-1	734.30	NM	NE	NM	NE	NM	NE	NM	NE
GW-2	737.82	236.21	501.61	239.68	498.14	240.55	497.27	228.30	509.52
GW-3	735.53	233.94	501.59	238.00	497.53	238.84	496.69	226.60	508.93
GW-4	734.63*/740.65**	233.39	501.24	237.11	497.52	237.90	496.73	232.20	508.45
GW-5	735.72*/738.13**	233.61	502.11	237.67	498.05	238.44	497.28	231.22	506.91
GW-6	739.92*/742.46**	239.72	500.20	239.83	500.09	240.42	499.50	233.41	509.05
GW-7	734.48	232.72	501.76	237.46	497.02	238.28	496.20	225.74	508.74
GW-8	741.80	239.97	501.83	244.21	497.59	245.10	496.70	231.74	510.06
GW-9	740.55	238.71	501.84	243.76	496.79	244.60	495.95	230.62	509.93
GW-10	737.44	235.53	501.91	240.72	496.72	241.58	495.86	228.35	509.09

Notes:

- NM: Not Measured.
- NE: Not Estimated.
- * : Original wellhead elevation.
- ** : Wellhead elevation revised after July 1995 regrading and construction at Home Depot property.

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TABLE 2 - INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (all results in milligrams per liter, except turbidity)							
Constituent	GW-2 (03/09/95)	GW-3 (03/09/95)	GW-7 (03/10/95)	GW-8 (03/09/95)	GW-9 (03/09/95)	GW-10 (03/10/95)	Equipment Blank (03/09/95)
Chloride	25	39	41	36	38	31	<0.05
Sulfate	60	77	77	62	67	56	<0.1
Carbonate Alkalinity	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	250	290	360	250	230	270	<10
Hydroxide Alkalinity	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	250	290	360	250	230	270	<10
Calcium	93	110	140	130	100	120	<0.5
Magnesium	20	24	30	29	23	24	<0.1
Potassium	4.0	5.1	4.5	5.8	4.6	4.7	<0.5
Sodium	23	27	27	35	29	28	<0.5
TDS	460	550	650	500	510	510	<10
Turbidity	23	2.3	0.8	2.3	21	5.3	<0.1
Nitrate	35	70	68	63	85	59	<0.1
Nitrite	<0.1	<0.1	<1	<0.1	<0.1	<1	<0.1
Ammonia Nitrogen	<0.1	<0.1	0.11	<0.1	<0.1	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<0.1: Less than the denoted detection limit.

TABLE 2 - INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS
(all results in milligrams per liter, except turbidity)

Constituent	GW-2 (09/21/95)	GW-3 (09/21/95)	GW-7 (09/21/95)	GW-8 (09/20/95)	GW-9 (09/20/95)	GW-10 (09/21/95)	Equipment Blank (09/21/95)
Chloride	40	29	32	35	27	27	<0.5
Sulfate	61	49	57	58	61	60	<0.5
Carbonate Alkalinity	<10	<10	<10	<10	<10	<10	<10
Bicarbonate Alkalinity	260	220	220	280	210	220	<10
Hydroxide Alkalinity	<10	<10	<10	<10	<10	<10	<10
Total Alkalinity	260	220	220	280	210	220	<10
Calcium	110	83	89	100	82	83	<0.5
Magnesium	25	19	20	25	19	19	<0.1
Potassium	4.7	5.9	4.0	6.2	4.7	4.1	<0.5
Sodium	29	23	26	30	28	26	<0.5
TDS	530	430	460	530	430	440	<10
Turbidity	1.1	13	0.9	43	13	0.4	<0.1
Nitrate	55	48	55	52	46	46	<0.2
Nitrite	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ammonia Nitrogen	NA	NA	NA	NA	NA	NA	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<0.1: Less than the denoted detection limit.

NA: Not Analyzed

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 824.2)

(all results in micrograms per liter)

Organic Constituent	GW-2 (03/09/95)	GW-3 (03/09/95)	GW-7 (03/10/95)	GW-8 (03/09/95)	GW-9 (03/09/95)	GW-10 (03/10/95)	Equipment Blank (03/09/95)	Trip Blank (03/09/95)
TPH	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1000
1,1,1,2-Tetrachloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,1,1-Trichloroethane	11/10	30/21	51/43	1.6	3.1/3.2	<10	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,1-Dichloroethane	0.9	12/9.3	37	<0.2	<0.2	<10	<0.2	<0.2
1,1-Dichloroethene	10/8.5	22/15	22	2.0	2.2/2.6	<10	<0.2	<0.2
1,1-Dichloropropene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2,3-Trichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2,3-Trichloropropane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2,4-Trimeethylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
1,2-Dibromoethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dichloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,2-Dichloropropane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,3,5-Trimeethylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,3-Dichloropropane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
2,2-Dichloropropane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
2-Chlorotoluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
4-Chlorotoluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromochloromethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromodichloromethane	0.3	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromomethane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
Benzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Bromoform	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
Chlorobenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Carbon Tetrachloride	3.7	2.8	<20	2.0	1.4/1.6	<10	<0.2	<0.2
Chloroethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Chloroform	2.3	5.7/10	64/39	1.0	1.1/0.7	<10	<0.2	<0.2
Chloromethane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5
Dibromochloromethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2
Dibromomethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2

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TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 8242)									
(all results in micrograms per liter)									
Organic Constituent	GW-2 (03/09/95)	GW-3 (03/09/95)	GW-7 (03/10/95)	GW-8 (03/09/95)	GW-9 (03/09/95)	GW-10 (03/10/95)	Equipment Blank (03/09/95)	Trip Blank (03/09/95)	
Dichlorodifluoromethane	<0.5	<3	<50	<0.5	<0.5	<30	<0.5	<0.5	
Ethylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
Freon 113	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
Hexachlorobutadiene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
Isopropylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
Methylene Chloride	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
N-Butylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
N-Propylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
Naphthalene	<1	<5	<100	<1	<1	<50	<1	<1	
Styrene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
Trichloroethene	250/180	1300/810	4700/5500	190/170	71/87	1100	<0.2	<0.2	
Trichlorofluoromethane	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
Toluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
Tetrachloroethene	2.7	6.6	<20	2.5/3.6	6.0/9.2	<10	<0.2	<0.2	
Vinyl Chloride	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
cis-1,2-Dichloroethene	1.1	13/9.8	70/67	1.2	<0.2	12	<0.2	<0.2	
cis-1,3-Dichloropropene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
m- & p-xylenes	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
o-xylene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
p-Isopropyl toluene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
sec-Butylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
trans-1,2-Dichloroethene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
trans-1,3-Dichloropropene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	
tert-Butylbenzene	<0.2	<1	<20	<0.2	<0.2	<10	<0.2	<0.2	

TPH: Total Petroleum Hydrocarbons.
 <0.2 Less than the detection limit of 0.2.

ANALYTICAL RESULTS (EPA Test Method 524.2)									
TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER (all results in micrograms per liter)									
Organic Constituent	GW-2 (09/21/95)	GW-3 (09/21/95)	GW-7 (09/21/95)	GW-4 (09/20/95)	GW-9 (09/20/95)	GW-10 (09/21/95)	Equipment Blank (09/21/95)	Trip Blank (09/21/95)	
TPH	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	
1,1,1,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1,1-Trichloroethane	<0.2	<0.2	1.6	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1,2-Trichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1-Dichloroethane	0.59	0.33	0.67	0.40	<0.2	<0.2	<0.2	<0.2	
1,1-Dichloroethene	<0.2	0.63	1.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2,3-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2,3-Trichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2,4-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2,4-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2-Dibromo-3-chloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2-Dibromoethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2-Dichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,3,5-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,3-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,3-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
1,4-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
2,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
2-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
4-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Bromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Bromodichloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Bromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Bromoform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Chlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Carbon Tetrachloride	<0.2	0.84	1.6	<0.2	<0.2	<0.2	<0.2	<0.2	
Chloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Chloroform	0.44	0.50	1.3	0.47	<0.2	0.42	0.31	<0.2	
Chloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Dibromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Dibromomethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (EPA Test Method 824.2)

(all results in micrograms per liter)

Organic Constituent	GW-2 (09/21/95)	GW-3 (09/21/95)	GW-7 (09/21/95)	GW-8 (09/20/95)	GW-9 (09/20/95)	GW-10 (09/21/95)	Equipment Blank (09/21/95)	Trip Blank (09/21/95)
Dichlorodifluoromethane	3.3	1.6	0.64	3.9	<0.5	1.5	<0.5	<0.5
Ethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Freon 113	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Hexachlorobutadiene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Isopropylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	<1	<1	<1	<1	<1	<1	<1	<1
N-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
N-Propylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene	5.1	18	110	6.4	0.47	21	<0.2	<0.2
Trichlorofluoromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tetrachloroethene	5.0	2.2	1.6	4.9	0.48	2.3	<0.2	<0.2
Vinyl Chloride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	3.4	1.3	1.4	2.0	0.37	0.94	<0.2	<0.2
cis-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
m- & p-xylenes	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
o-xylene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p-Isopropyl toluene	<0.2	0.48	0.51	<0.2	<0.2	<0.2	<0.2	<0.2
sec-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
tert-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

TPH: Total Petroleum Hydrocarbons.
<0.2 Less than the detection limit of 0.2.

TABLE 4 - HISTORIC GROUNDWATER SPACE ELEVATIONS
(all elevations in feet above mean sea level)

Date	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10
07/19/91	472.30	472.33	472.15	473.38	473.78	474.63	NC	NC	NC	NC
08/12/91	470.38	470.53	470.45	470.52	471.98	473.34	NC	NC	NC	NC
09/17/91	468.38	468.17	468.11	468.47	470.05	470.84	NC	NC	NC	NC
11/18/91	467.66	467.97	467.76	467.56	468.91	469.43	NC	NC	NC	NC
12/10/91	471.32	471.56	471.45	470.78	471.86	476.06	NC	NC	NC	NC
01/13/92	475.52	475.88	475.64	475.19	477.13	475.66	NC	NC	NC	NC
02/19/92	478.72	479.14	479.09	477.95	478.99	477.53	NC	NC	NC	NC
03/17/92	475.67	475.92	475.85	475.36	476.22	476.82	NC	NC	NC	NC
04/01/92	474.12	476.07	474.70	474.66	475.33	476.33	NC	NC	NC	NC
05/19/92	472.11	472.52	471.96	471.28	472.42	474.01	NC	NC	NC	NC
06/15/92	472.80	473.12	472.87	472.47	473.75	473.79	NC	NC	NC	NC
07/22/92	471.87	471.94	471.95	471.47	472.78	472.55	NC	NC	NC	NC
08/10/92	469.97	470.13	470.03	469.76	471.03	471.55	NC	NC	NC	NC
09/04/92	463.93	464.95	464.00	464.37	466.04	468.38	NC	NC	NC	NC
11/12/92	462.97	462.55	462.82	462.75	464.85	464.38	NC	NC	NC	NC
12/21/92	468.71	468.22	468.66	468.20	470.04	468.33	NC	NC	NC	NC
01/14/93	473.10	473.00	473.27	472.44	473.99	471.78	NC	NC	NC	NC
02/16/93	477.70	478.02	478.11	477.00	478.14	475.24	NC	NC	NC	NC
03/02/93	479.52	479.91	479.95	478.89	480.04	476.84	NC	NC	NC	NC
03/25/93	482.56	482.92	482.95	481.99	483.02	480.12	NC	NC	NC	NC
05/09/93	487.59	488.15	488.13	487.21	488.04	486.07	NC	NC	NC	NC
06/01/93	490.08	490.83	490.67	489.63	490.40	488.53	NC	NC	NC	NC
06/17/93	488.29	489.63	488.85	487.80	488.65	488.59	NC	NC	NC	NC
06/30/93	491.29	492.34	491.99	491.28	492.16	490.31	NC	NC	NC	NC
08/02/93	496.49	497.40	497.24	496.22	496.86	494.70	NC	NC	NC	NC
08/18/93	496.44	497.61	497.19	495.73	496.06	495.36	NC	NC	NC	NC
09/08-09/93	NM	NM	NM	NM	NM	NM	498.56	499.90	500.30	499.04
09/13/93	498.72	499.91	499.41	498.48	498.98	497.89	NC	NC	NC	NC
10/14/93	501.79	502.84	502.45	501.13	501.53	500.57	NC	NC	NC	NC
11/29/93	506.29	507.14	506.93	505.90	506.24	504.53	507.16	507.91	508.16	507.52
12/07/93	506.99	507.83	507.60	506.56	506.96	505.37	NM	NM	NM	NM
01/07/94	509.37	510.20	509.88	508.93	509.28	507.90	510.19	510.96	511.21	510.57
02/15/94	508.77	509.44	509.09	508.29	508.50	508.84	508.97	509.66	509.36	509.03
03/07/94	510.18	510.78	510.53	509.71	510.15	509.52	510.74	511.29	511.37	510.88
04/15/94	511.91	512.51	512.34	511.38	511.96	511.09	512.52	512.98	513.08	512.80
05/16/94	514.34	515.01	514.81	513.80	514.30	513.31	515.00	515.61	515.73	515.36
06/16/94	516.10	516.87	516.58	515.60	515.77	515.10	516.75	517.55	517.62	517.13

003224

TABLE 4 - HISTORIC GROUNDWATER SURFACE ELEVATIONS
(all elevations in feet above mean sea level)

Date	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10
07/19/94	516.90	517.82	517.41	516.37	516.44	516.62	517.38	518.50	518.65	517.80
08/15/94	509.35	510.63	509.39	509.79	509.14	513.61	508.39	512.34	509.05	506.04
09/07/94	502.82	504.08	502.57	504.16	503.19	508.52	501.42	502.98	501.49	500.74
10/11/94	495.77	496.42	495.19	497.61	496.50	501.98	494.20	495.08	493.67	493.46
11/21/94	493.63	493.61	493.69	493.99	495.75	495.23	493.84	492.87	492.40	493.58
12/08/94	496.12	496.26	496.41	496.50	497.76	496.05	496.54	495.87	495.69	496.46
01/17/95	NM	501.61	501.59	501.24	502.11	500.20	501.76	501.83	501.84	501.91
02/28/95	NM	498.14	497.53	497.52	498.05	500.09	497.02	497.59	496.79	496.72
03/06/95	NM	497.27	496.69	496.73	497.28	499.50	496.20	496.70	495.95	495.86
09/18/95	NM	509.52	508.93	508.45	506.91	509.05	508.74	510.06	509.93	509.09

Not calculated.
Not measured.

003225

TABLE 5 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1

(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date												
	08/21/91	09/17/91	01/14/92	03/16/92	05/19/92	08/11/92	01/14/93	03/02/93	06/01/93	12/07/93	02/18/94	05/16/94	08/16/94
Chloride	44.7/46.9	38.5	31.0	24.2	29.0	37.0	22	27	27	25	27	26	40
Sulfate	74.7/67.1	69.3	59.3	50.8	59.4	64.0	55	59	55	56	56	65	72
Carbonate Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210	210	250
Hydroxide Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210	210	250
Calcium	113/111	103	81.5	79.8	88.9	85	86	86	89	91	95	92	100
Magnesium	24.9/24.7	23.6	18.3	17.1	17.8	19.9	18	17	19	19	20	19	24
Potassium	ND/ND	ND	ND	ND	ND	ND	3.9	3.7	3.8	3.8	5.2	3.9	4.8
Sodium	24.5/23.9	23.6	23.6	22.7	24	26.1	25	24	26	27	26	26	29
TDS	551/514	580	437	441	440	581	400	360	400	410	420	430	500
Turbidity	ND/ND	0.38	0.40	0.60	0.20	0.2	0.68	1.0	2.4	1.42	3.1	3.9	<0.1
Nitrate	18/17.8	17.7	10.5	10.9	14.9	17.3	45	42	38	36	49	37	75
Nitrite	ND/ND	ND	3.9	ND	ND	ND	<0.05	<0.05	<0.05	<0.1	<0.1	<0.2	<0.2
Ammonia Nitrogen	0.48/0.35	0.51	ND	0.20	ND	ND	<0.1	0.21	<0.1	0.38	<0.1	<0.1	0.36

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

TABLE 7 - HISTORIC INORGANIC COMPOUND GROUP
 (all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date																
	08/22/91	09/17/91	01/16/92	03/16/92	05/19/92	08/12/92	01/14/93	03/02/93	06/02/93	08/19/93	11/30/93	02/16/94	05/18/94	08/16/94	12/13/94	03/09/95	09/21/95
Chloride	42.2	36.3	33.5/34	30.3/39	33.3/32	36.0	33	28	33	26	27	28	31	38	35	39	29
Sulfate	66.9	68.5	61.1/54	52.1/59	61.9/61.9	66.1	54	53	52	56	50	52	57	67	57	77	49
Carbonate Alkalinity	ND	ND	ND/ND	ND/ND	ND/ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Bicarbonate Alkalinity	240	244	208/201	232/228	245/253	248	190	190	200	200	210	210	190	260	240	290	220
Hydroxide Alkalinity	ND	ND	ND/ND	ND/ND	ND/ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Total Alkalinity	240	244	208/201	232/228	245/253	248	190	190	200	200	210	210	190	260	240	290	220
Calcium	98.3	107	81.4/101	86.6/96.7	88.6/92.4	110	89	86	90	91	82	100	98	100	110	110	83
Magnesium	22.3	24.5	19.8/21.7	19.7/22.1	20.1/21.0	23.6	19	18	19	19	18	21	20	24	22	24	19
Potassium	ND	ND	ND/4	ND/4	ND/ND	ND	3.9	3.5	3.9	3.8	3.6	4.2	4.6	4.9	4.3	5.1	5.9
Sodium	22.4	25.1	24.8/26.8	25.1/29.5	24.4/25.5	23.8	26	24	26	25	24	25	26	27	25	27	23
TDS	524	521	477/530	429/450	455/492	1,070	420	360	400	380	500	460	360	500	490	550	430
Turbidity	ND	ND	0.50/0.15	0.40/0.20	0.20/0.20	0.20	4.3	0.85	2.0	8.9	4.7	27	160	3.4	30	2.3	13
Nitrate	16.0	16.3	12.4/15.2	13.9/15.8	15.7/15.6	15.5	66	60	56	66	57	60	67	74	64	70	48
Nitrite	ND	ND	4.4/ND	ND/ND	ND/ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2
Ammonia Nitrogen	0.15	ND	ND/ND	0.12/ND	ND/ND	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.10	<0.1	0.61	0.12	<0.1	NA

Turbidity measured in Nephelometric Turbidity Units.
 TDS: Total Dissolved Solids.
 <1: Less than the detection limit of 1.
 ND: Not Detected
 NA: Not Analyzed

TABLE 8 - HISTORIC INORGANIC COMPOUND GROUP, WATER ANALYTICAL RESULTS FOR GW-7
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date							
	09/08/93	11/29/93	02/16/94	05/18/94	08/15/94	12/11/94	03/10/95	09/21/95
Chloride	27	27	27	26	49	31	41	32
Sulfate	57	53	66	62	130	58	77	57
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10
Bicarbonate Alkalinity	180	190	260	190	330	220	360	220
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10
Total Alkalinity	180	190	260	190	330	220	360	220
Calcium	96	72	120	80	180	94	140	89
Magnesium	21	18	26	17	39	21	30	20
Potassium	4	3.7	4.2	3.6	5.7	4.0	4.5	4.0
Sodium	29	26	30	27	35	26	27	26
TDS	420	860	550	350	750	460	650	460
Turbidity	7.0	<1.0	7.8	5.1	0.30	1.5	0.80	0.9
Nitrate	63	49	71	44	100	64	68	55
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<1	<0.2
Ammonia Nitrogen	<0.02	<1.0	0.12	<0.1	0.28	<0.1	0.11	NA

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected
NA: Not Analyzed

TABLE 9 - HISTORIC INORGANIC COMPOUND GROUP WATER ANALYTICAL RESULTS FOR GW-8
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date							
	09/09/93	11/29/93	02/16/94	05/17/94	08/15/94	12/10/94	03/09/95	09/20/95
Chloride	34	35	34	38	40	34	36	35
Sulfate	60	56	55	62	69	59	62	58
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10
Bicarbonate Alkalinity	230	240	240	240	220	250	250	280
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10
Total Alkalinity	230	240	240	240	220	250	250	280
Calcium	110	92	110	98	90	100	130	100
Magnesium	25	23	24	21	19	22	29	25
Potassium	4.9	4.4	4.5	3.9	4.1	4.5	5.8	6.2
Sodium	29	28	28	25	25	27	35	30
TDS	500	510	500	510	450	490	500	530
Turbidity	5.0	<1.0	23	8.2	0.18	12	2.3	43
Nitrate	74	56	69	76	71	58	63	52
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2
Ammonia Nitrogen	0.03	<1.0	<0.1	<0.1	<0.1	0.17	<0.1	NA

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected
NA: Not Analyzed

003230

TABLE 10 - HISTORIC INORGANIC COMPOUND GROU
 (all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date							
	09/08/93	11/29/93	02/16/94	05/17/94	08/16/94	12/10/94	03/09/95	09/20/95
Chloride	26	21	31	22	30	30	38	27
Sulfate	1,000	59	58	66	69	58	67	61
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10
Bicarbonate Alkalinity	180	190	180	190	220	220	230	210
Hydrosulfide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10
Total Alkalinity	180	190	180	190	220	220	230	210
Calcium	86	64	82	85	87	96	100	82
Magnesium	20	17	18	18	19	21	23	19
Potassium	4.4	3.9	3.8	4.1	4.3	4.7	4.6	4.7
Sodium	29	25	26	26	28	29	29	28
TDS	3,400	420	410	360	410	440	510	430
Turbidity	30	<1.0	1.9	2.9	0.15	17	21	13
Nitrate	45	30	41	32	65	58	85	46
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5	<0.1	<0.2
Ammonia Nitrogen	<0.02	<1.0	0.11	<0.1	<0.1	0.12	<0.1	NA

Turbidity measured in Nephelometric Turbidity Units.
 TDS:
 <1:
 Less than the detection limit of 1.
 ND:
 Not Detected
 NA:
 Not Analyzed

003231

TABLE 11 - HISTORIC INORGANIC COMPOUND GROUP
(all results in milligrams per liter, except turbidity)

WATER ANALYTICAL RESULTS FOR GW-10

Inorganic Constituent	Sample Date							
	09/09/93	11/29/93	02/16/94	05/18/94	08/15/94	12/11/94	03/10/95	09/21/95
Chloride	21	20	22	20	32	32	31	27
Sulfate	63	58	64	64	72	57	56	60
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10
Bicarbonate Alkalinity	190	200	260	190	420	240	270	220
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	<1	<10
Total Alkalinity	190	200	260	190	420	240	270	220
Calcium	85	68	110	77	140	98	120	83
Magnesium	20	17	23	16	30	22	24	19
Potassium	4.1	3.6	4.4 ± 0.2	3.8	5.1	4.4	4.7	4.1
Sodium	30	26	33	27	30	28	28	26
TDS	390	360	480	340	640	460	510	440
Turbidity	10	<1.0	7.2	0.52	0.41	78	5.3	0.4
Nitrate	38	25	33	27	58	64	59	46
Nitrite	ND	<1.0	<0.1	<0.1	<0.2	<0.5	<1	<0.2
Ammonia Nitrogen	0.02	<1.0	0.11	0.31	0.18	<0.1	<0.1	NA

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

NA: Not Analyzed

003232

TABLE 12 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1

(all results in micrograms per liter)

Organic Constituent	Sample Date													
	08/21/91	09/17/91	01/14/92	03/15/92	05/19/92	08/11/92	01/14/93	03/02/93	06/17/93	12/07/93	02/18/94	05/16/94	08/16/94	09/08/94
1,1,1-Trichloroethane	2.4/2.3	1.6	ND	5.1	3.1	4.3	<3	<0.5	3.0	0.3	1.4	<0.2	20	140
1,1-Dichloroethane	ND/ND	ND	ND	1.3	0.75	0.51	<3	<0.5	<3	0.3	<1	<0.2	<20	<100
1,1-Dichloroethene	3.7/3.5	2.8	ND	3.1	3.3	5.5	<3	<0.5	2.9	<0.2	1.0	<0.2	<20	<100
1,2,3-Trichlorobenzene	ND/0.75	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100
Carbon Tetrachloride	1.1/0.70	1.3	ND	ND	0.85	1.6	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	<3	1.4	<3	<0.2	<1	<0.2	<20	<300
Trichloroethene	40/39	27	3.6	130	58	100	54	25	91	4.4	62	3.5	1,800	6,400
Toluene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2	<20	<100
Tetrachloroethene	1.2/1.0	1.1	ND	1.7	1.4	2.1	<3	2.2	4.9	2.6	1.7	1.4	<20	<100
cis-1,2-Dichloroethene	ND/ND	ND	ND	3.0	1.6	1.4	<3	0.71	5.0	2.1	3.0	1.1	36	160
m-&p-xylenes	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2	<20	<100

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihaloethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

003233

TABLE 13 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2

(all results in micrograms per liter)

Organic Constituent										
	08/21/91	09/17/91	01/15/92	03/17/92	05/20/92	08/10/92	01/14/93	03/02/93	06/18/93	08/19/93
1,1,1-Trichloroethane	6.7	5.4/5.8	ND	2.5	12	15	0.54	<0.5	<3	<1
1,1-Dichloroethane	ND	IND/ND	ND	ND	0.53	ND	<0.5	<0.5	<3	<1
1,1-Dichloroethene	7	5.3/5.5	ND	2.4	13	17	0.64	<0.5	<3	<1
Carbon Tetrachloride	1.7	1.8/1.9	ND	0.57	3.3	3.8	<0.5	<0.5	<3	<1
Trichloroethene	50	42/44	1.6	31	83	150	24	19	48	48
Tetrachloroethene	1	1.0/1.0	ND	0.58	1.9	2.3	0.71	0.62	<3	<1
Toluene	0.84	0.53/ND	ND	ND	ND	ND	<0.5	<0.5	<3	<1
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<3	<1
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	<0.5	<0.3	<3	<1
Bromodichloromethane	ND	ND	ND	ND	ND	ND	<0.5	<0.3	<3	<1
Trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	<0.5	<0.3	<3	<1

TABLE 13 - HISTORIC VOLATILE ORGANIC COMPOUND (VOC) DWATER ANALYTICAL RESULTS FOR GW-2

(all results in micrograms per liter)

Organic Constituent	11/30/93	02/16/94	03/09/94	05/18/94	08/16/94	09/08/94	11/22/94	12/12/94	03/09/95	09/21/95
1,1,1-Trichloroethane	0.37	<20	<1	<0.2	10	12	1.5	0.5	11/10	<0.2
1,1-Dichloroethane	<0.2	<20	<1	<0.2	<10	<10	0.5	0.3	<50.9	0.59
1,1-Dichloroethene	<0.2	<20	<1	<0.2	<10	17	1.3	0.5	10/8.5	<0.2
Carbon Tetrachloride	<0.2	<20	<1	<0.2	12	14	1.6	0.7	<53.7	<0.2
Trichloroethene	29	890	60	9.6	830	810	43	13	250/180	5.1
Tetrachloroethene	1.7	<20	1.4	0.99	<10	<10	2.1	1.9	<52.7	5.0
Toluene	<0.2	<20	<1	<0.2	<10	<10	<0.2	<0.2	<51 <0.2	<0.2
cis-1,2-Dichloroethene	0.4	<20	<1	0.49	<10	<10	1.7	1.4	<51/1.1	3.4
Dichlorodifluoromethane	<0.2	<20	<1	<0.2	<10	<10	<0.2	0.5	<20/ <0.5	3.3
Bromodichloromethane	<0.2	<20	<1	<0.2	<10	<10	<0.2	<0.2	<50.3	<0.2
Trans-1,2-Dichloroethene	<0.2	<20	<1	<0.2	<10	<10	<0.2	<0.2	<51 <0.2	0.20

ND: Not Detected.

<1: Less than the detection limit of 1.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 14 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3

(all results in micrograms per liter)

Organic Constituent	Sample Date																	
	08/22/91	09/17/91	01/16/92	03/16/92	05/19/92	08/12/92	01/14/93	03/02/93	06/18/93	08/19/93	11/20/93	02/16/94	05/18/94	08/16/94	09/08/94	12/13/94	03/09/95	09/21/95
1,1,1-Trichloroethane	7.3	7.9	ND/ND	22/20	7.5/7.0	13	<5	<5	<50	<1	0.6	0.31	<0.2	21	83	1.4	30/21	<0.2
1,1-Dichloroethane	ND	0.55	ND/ND	6.6/ND	1.5/1.4	ND	<5	<5	<50	<1	<0.2	<4	<0.2	<20	51	<1	12/9.3	0.33
1,1-Dichloroethene	10	8.5	ND/ND	11/ND	6.6/5.5	13	<5	<5	<50	<1	0.4	0.31	<0.2	22	59	1.5	22/15	0.63
Carbon Tetrachloride	ND	2	ND/ND	ND/ND	1.1/ND	ND	<5	<5	<50	<1	<0.2	<4	<0.2	<20	<50	<1	<102.8	0.84
Trichloroethene	110	100	4.7/6.4	620/820	100/160	240	68	47	2200	49	15	15	6.0	1,200	4,300	36	1300/810	18
Tetrachloroethene	ND	2.7	ND/ND	ND/ND	2.0/1.8	3.3	<5	<5	<50	2.2	1.6	<4	0.71	<20	<50	2.4	<10/6.6	2.2
cis-1,2-Dichloroethene	ND	0.8	ND/ND	13/ND	2.1/1.9	2.8	<5	<5	<50	<1	<0.2	0.26	<0.2	<20	79	1.7	13/9.8	1.3
Toluene	ND	ND	ND/ND	ND/ND	ND/ND	ND	<5	<5	<50	<1	0.2	<4	<0.2	<20	<50	<1	<10/<1	<0.2
Naphthalene	ND	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	150	<300	<5	<50/<5	<1
Dichlorodifluoromethane	ND	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	<20	<300	<5	<30/<3	1.6
P-Isopropyl Toluene	ND	ND	ND/ND	ND/ND	ND/ND	ND	<30	<30	<300	<5	<1	<20	<1	<20	<300	<5	<10/<1	0.48

ND: Not Detected.

<1: Less than the detection limit of 1.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

003236

TABLE 15 - HISTORIC VOLATILE ORGANIC COMPOUND AND WATER ANALYTICAL RESULTS FOR GW-7

(all results in micrograms per liter)

Organic Constituent	Sample Date									
	09/08/93	11/29/93	02/16/94	03/08/94	05/18/94	08/15/94	09/07/94	12/11/94	03/10/95	09/21/95
1,1,1-Trichloroethane	0.19	<0.5	<40	<0.4	<0.2	<1	<1	8.1	51/43	1.6
1,1,2,2-Tetrachloroethane	<0.2	<0.5	<40	0.46	<0.2	<1	<1	<5	<40/<20	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.5	<40	0.50	<0.2	<1	<1	<5	<40/<20	<0.2
Trichloroethene	33	7.7	3100	35	0.36	22	48	440	4700/5500	110
Tetrachloroethene	0.21	<0.5	<40	0.72	<0.2	<1	<1	<5	<40/<20	1.6
cis-1,2-dichloroethene	0.58	<0.5	56	1.0	<0.2	2.1	2.3	8.9	70/67	1.4
Toluene	<0.2	<0.5	<40	<0.4	0.15	<1	<1	<5	<40/<20	<0.2
1,1-Dichloroethene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	7.7	<40/22	1.2
Carbon Tetrachloride	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<40/<20	1.6
1,1-Dichloroethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<40/37	0.67
Dichlorodifluoromethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<100/<20	0.64
P-Isopropyl Toluene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5	<10/<1	0.51

<1 Less than the detection limit of 1.

NA: Not Analyzed.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

003237

TABLE 16 - HISTORIC VOLATILE ORGANIC COMPOUND (VOC) AND WATER ANALYTICAL RESULTS FOR GW-9
(all results in micrograms per liter)

Organic Constituent	Sample Date								
	09/09/93	11/29/93	02/16/94	05/17/94	08/15/94	09/07/94	12/10/94	03/09/95	09/20/95
1,1,1-Trichloroethane	<0.2	<0.5	0.25	<0.2	<0.2	<0.2	<0.2	<2/1.6	<0.2
1,2,3-Trichlorobenzene	<0.2	<0.5	0.29	<0.2	<0.2	<0.2	<0.2	<2/ <0.2	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.5	0.23	<0.2	<0.2	<0.2	<0.2	<2/ <0.2	<0.2
1,2-Dichloroethane	0.17	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/ <0.2	<0.2
Carbon Tetrachloride	<0.2	<0.5	0.92	<0.2	0.58	1.4	0.3	<2/2.0	<0.2
Trichloroethene	0.80	0.9	30	1.2	28	32	8.6	190/170	6.4
Tetrachloroethene	0.30	0.6	0.77	0.79	0.66	0.40	2.9	2.5/3.6	4.9
cis-1,2-dichloroethene	0.22	0.6	0.5	0.55	0.39	0.30	1.7	<2/1.2	2.0
1,1-Dichloroethane	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	0.3	<2/ <0.2	0.40
1,1-Dichloroethene	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/2.0	<0.2
Dichlorodifluoromethane	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2/2.0	3.9

<0.2: Less than the detection limit of 0.2.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 17: HISTORIC VOLATILE ORGANIC COMPOUND
(all results in micrograms per liter)

ND WATER ANALYTICAL RESULTS FOR GW-9

Organic Constituent	Sample Date									
	09/04/93	11/29/93	02/16/94	05/17/94	08/16/94	09/07/94	12/10/94	03/09/95	05/20/95	
1,1,1-Trichloroethane	<0.2	<0.5	0.42	<0.2	3.1	2.4	0.5	3.1/3.2	<0.2	
1,1-Dichloroethene	<0.2	<0.5	0.4	<0.2	2.9	2.9	0.5	2.2/2.6	<0.2	
Dichlorodifluoromethane	1.0	<0.5	<0.2	<0.2	<3	<3	<0.5	<3/<0.5	<0.5	
Trichloroethene	2.4	3.1	16	3.4	110	75	9.4	71/87	0.47	
Tetrachloroethene	0.28	0.5	1.1	<0.2	7.6	4.4	1.9	6.0/9.2	0.48	
cis-1,2-dichloroethene	0.31	<0.5	<0.2	<0.2	<1	<1	0.5	<1/<0.2	0.37	
1,3-Dichloropropane	<0.2	<0.5	<0.2	0.48	<1	<1	<0.2	<1/<0.2	<0.2	
Carbon Tetrachloride	<0.2	<0.5	<0.2	<0.2	<1	1.8	0.3	1.4/1.6	<0.2	

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

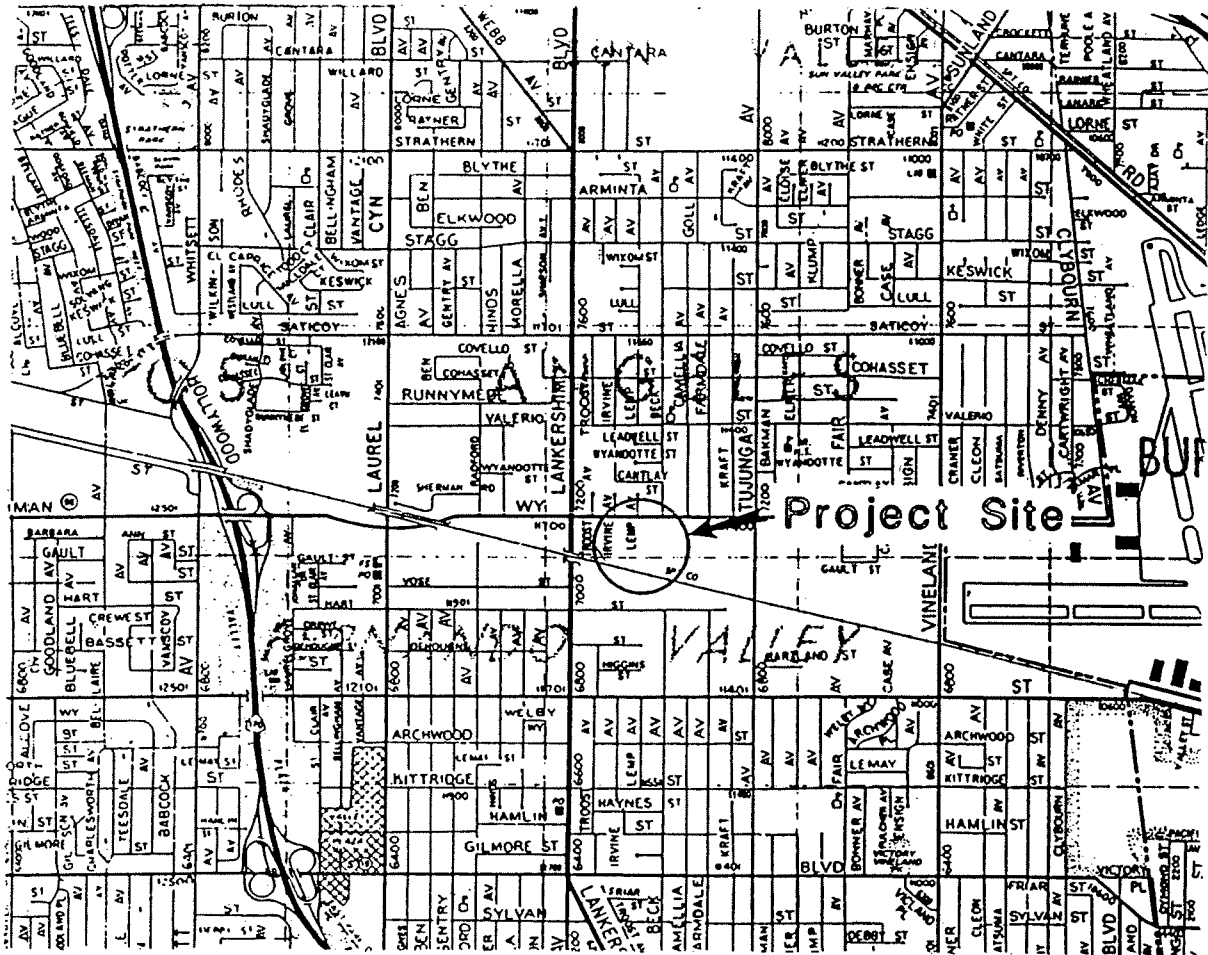
TABLE 18 - HISTORIC VOLATILE ORGANIC COMPOUND GR WATER ANALYTICAL RESULTS FOR GW-10
(all results in micrograms per liter)

Organic Constituent	Sample Date									
	09/09/93	11/29/93	07/16/94	03/07/94	05/18/94	06/15/94	09/07/94	12/11/94	03/10/95	09/21/95
1,1-Dichloroethane	0.10	<0.5	<40	<2	<0.2	<100	<100	<5	<10	<0.2
Dichlorodifluoromethane	4.2	<0.5	<40	<2	<0.2	<300	<300	<20	<30	1.5
1,1,1-Trichloroethane	0.14	<0.5	<40	<2	<0.2	<100	<100	7.2	<10	<0.2
Trichloroethene	50	15	2300	210	12	9,000	4,700	360	1100	21
Tetrachloroethene	1.5	1.2	<40	<2	1.0	<100	<100	<5	<10	2.3
cis-1,2-dichloroethene	1.3	<0.5	52	4.4	0.25	170	100	7.5	12	0.94
1,1-Dichloroethene	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5	<10	<0.2
Carbon Tetrachloride	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5	<10	<0.2

<2: Less than the detection limit of 2.

on laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

FIGURES



Source: The Thomas Guide, Los Angeles and Orange Counties, 1987, Page 16.

Scale: 1" = 2800'

SECOR International Incorporated

VICINITY MAP

ALLIEDSIGNAL
AEROSPACE COMPANY 003242
NORTH HOLLYWOOD FACILITY

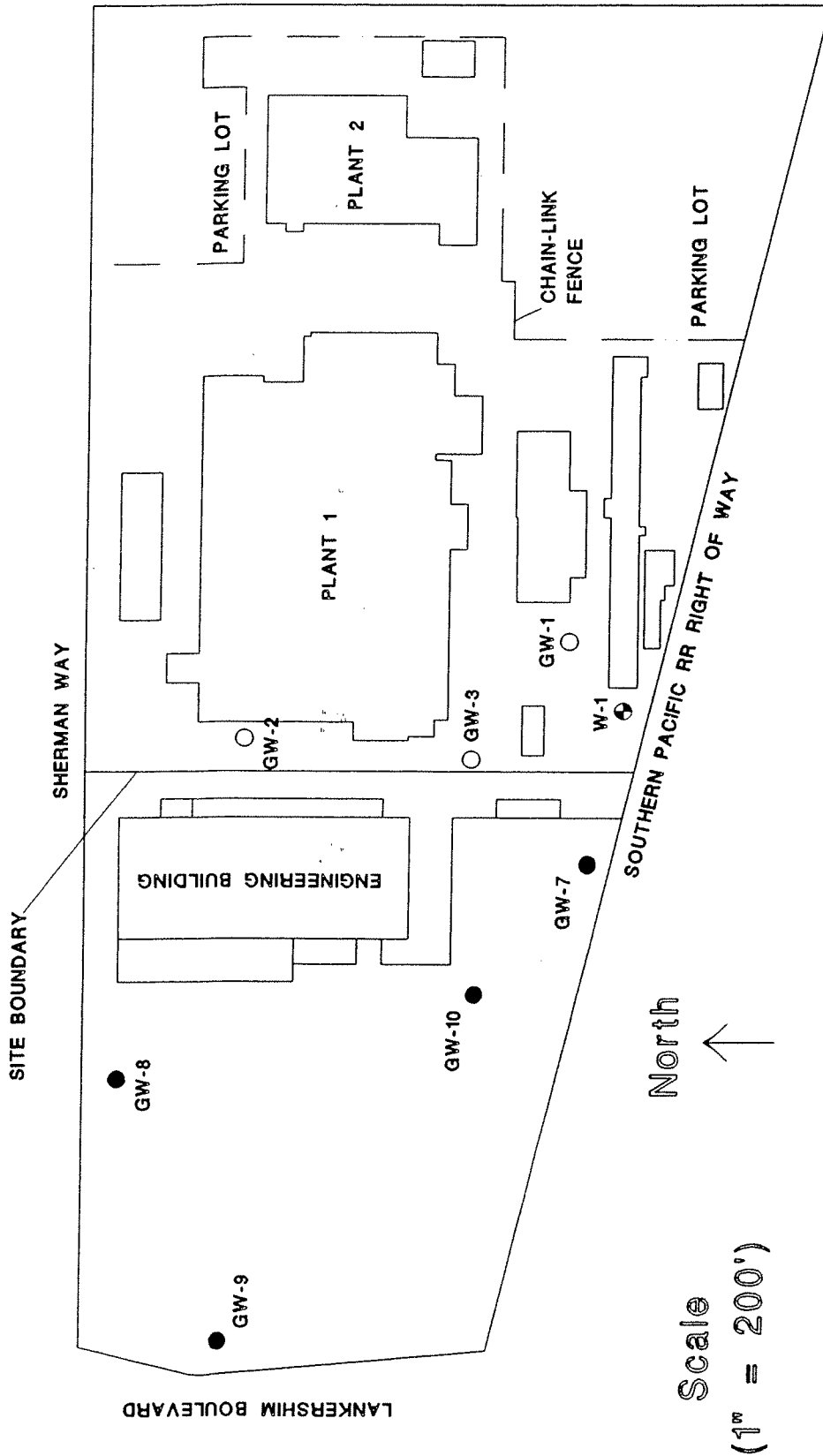
3437 Empresa Dr., Suite A, San Luis Obispo, CA 93401 (805) 546-0455

CAD FILE: ASB-A057VM PROJECT # A0057-001-01

DATE: MARCH 1995

FIGURE:

1



Legend:

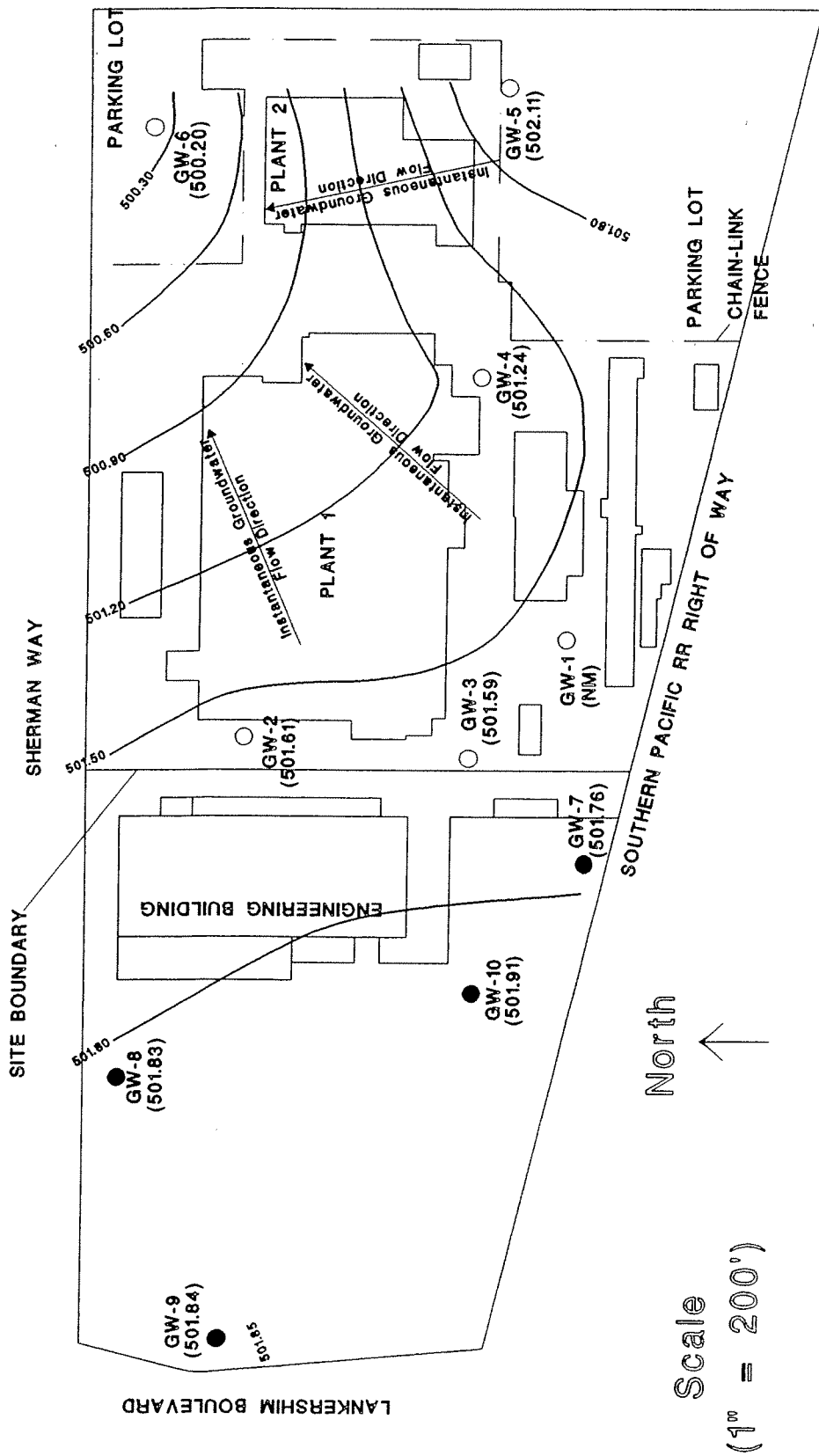
- Denotes approximate location of on-site monitoring well.
GW-2
- Denotes approximate location of off-site monitoring well.
GW-10
- ⊕ Denotes approximate location of abandoned monitoring well.
W-1

AlliedSignal
AEROSPACE COMPANY
North Hollywood Facility

SITE MAP
FIGURE 2

File Name: AS7-A57SM22

SECOR



Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- (501.91) Denotes groundwater surface elevation in feet above mean sea level.
- 501.90 — Denotes groundwater contour line.
- (NM) Not Measured

GROUNDWATER CONTOUR MAP

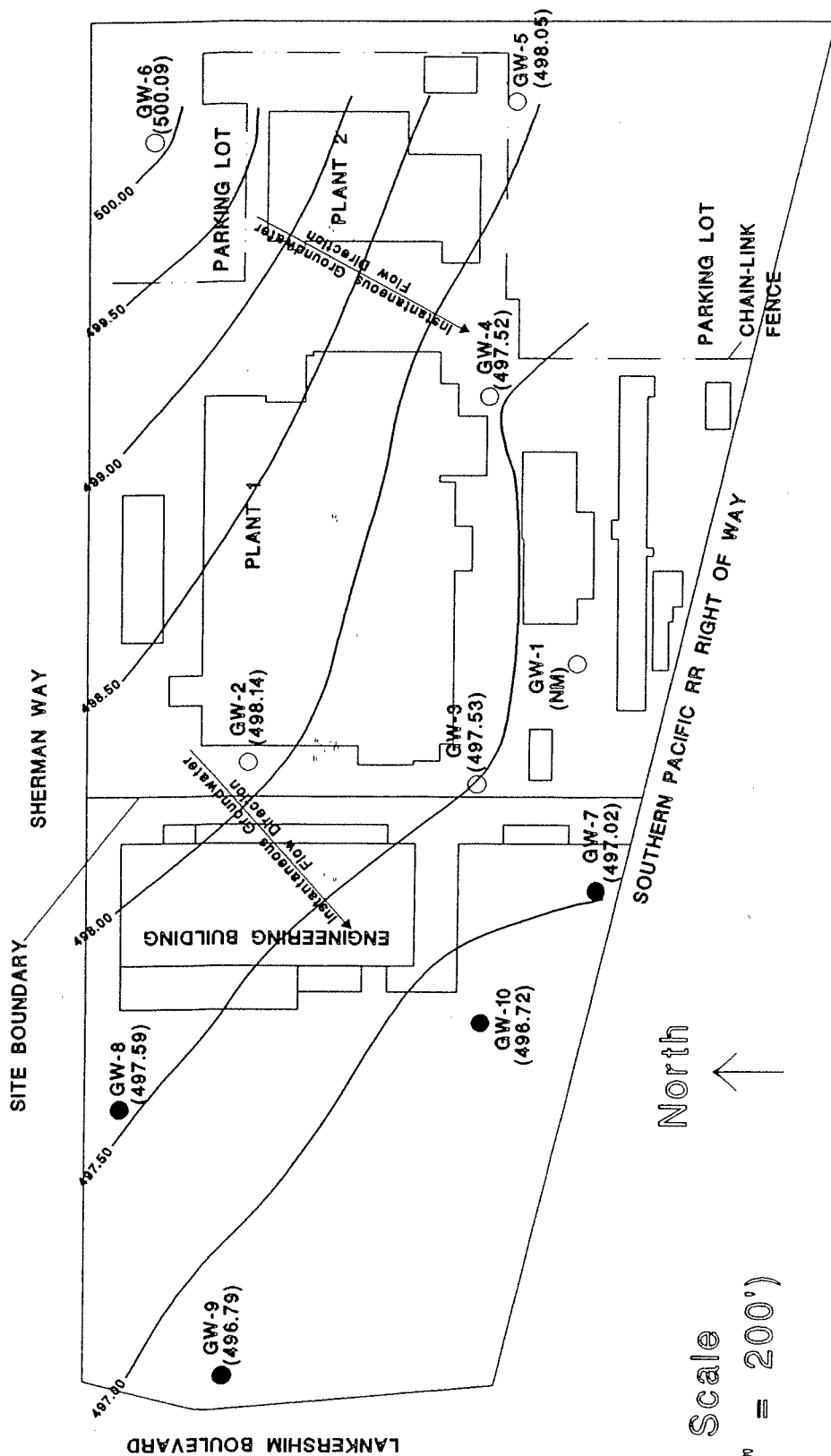
(1/17/95)

FIGURE 3

AlliedSignal
AEROSPACE COMPANY
North Hollywood Facility

File Name: AS9-A57G195

SECOR



Legend:

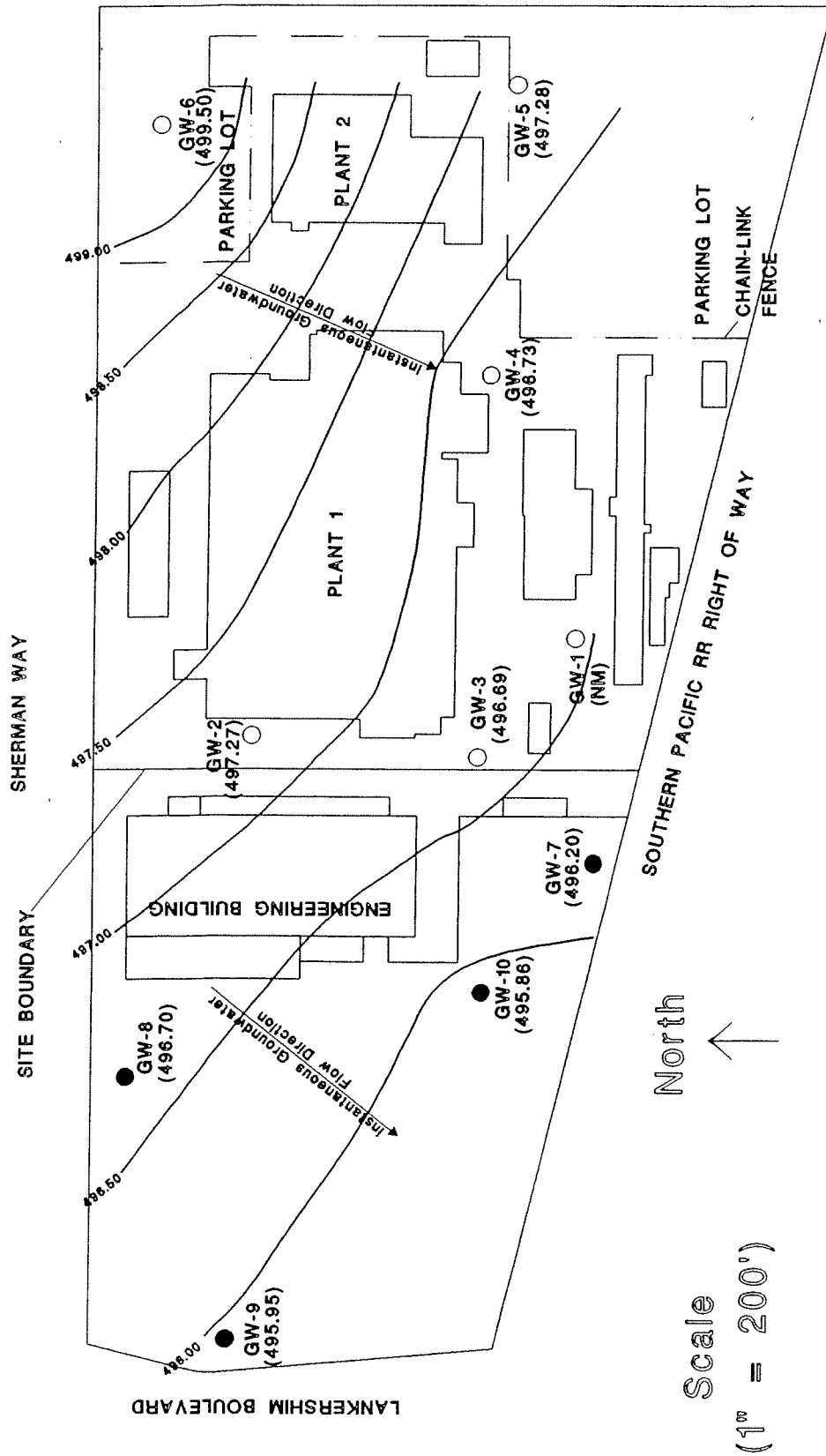
- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- (496.79) Denotes groundwater surface elevation in feet above mean sea level.
- 497.00— Denotes groundwater contour line.
- (NM) Not Measured

GROUNDWATER CONTOUR MAP (2/28/95) FIGURE 4

AlliedSignal
AEROSPACE COMPANY
North Hollywood Facility

File Name: AS9-A57G295

SECOR



Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- (495.86) Denotes groundwater surface elevation in feet above mean sea level.
- 497.00 — Denotes groundwater contour line.
- (NM) Not Measured

GROUNDWATER CONTOUR MAP

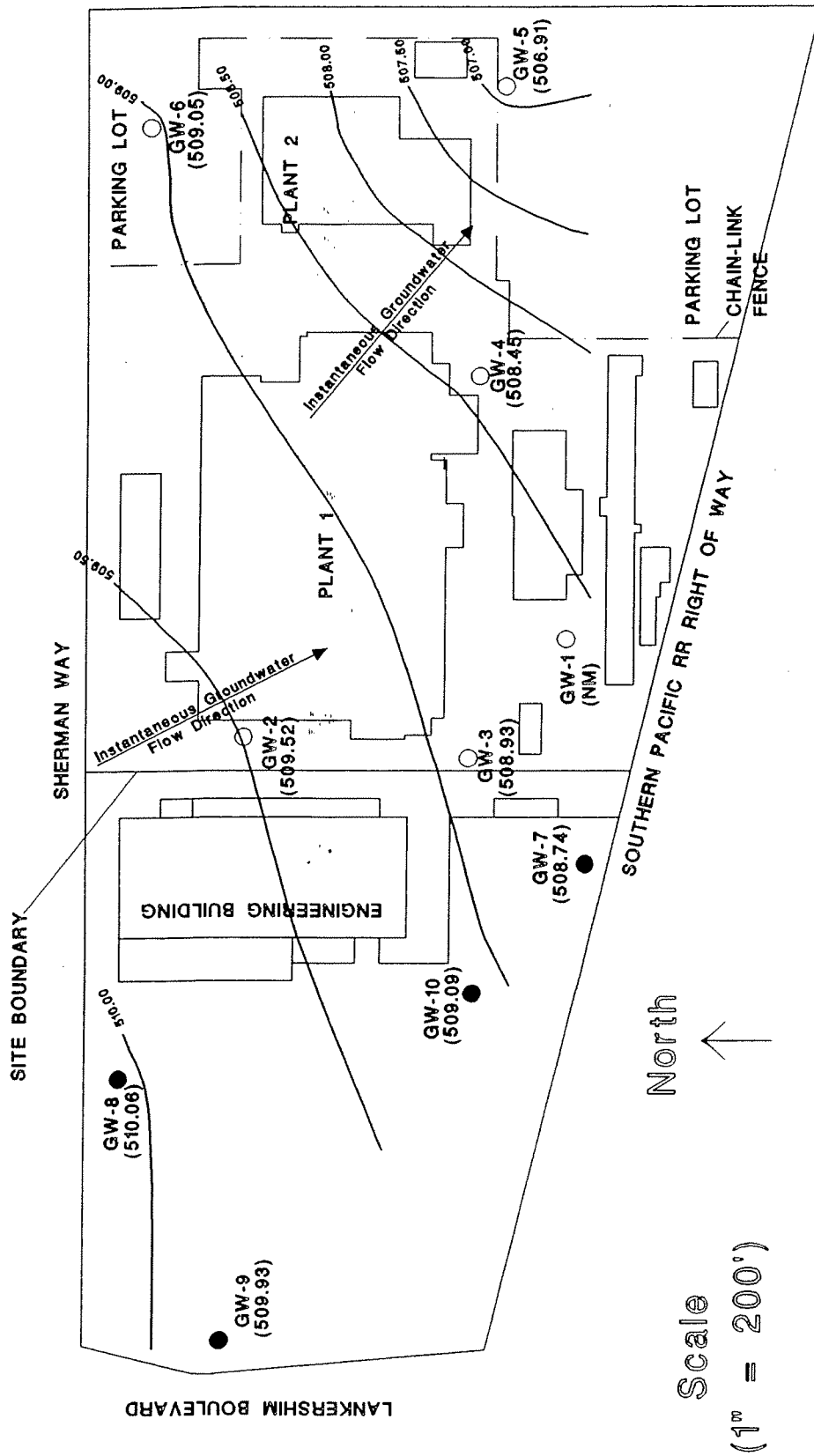
(3/6/95)

FIGURE 5

SECOR

File Name: AS9-A57G395

AlliedSignal
AEROSPACE COMPANY
North Hollywood Facility



Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- 509.09 Denotes groundwater surface elevation in feet above mean sea level.
- 509.00— Denotes groundwater contour line.
- (NE) Not Estimated
- (NM) Not Measured

GROUNDWATER CONTOUR MAP

(9/18/95)
FIGURE 6

AlliedSignal
AEROSPACE COMPANY
North Hollywood Facility

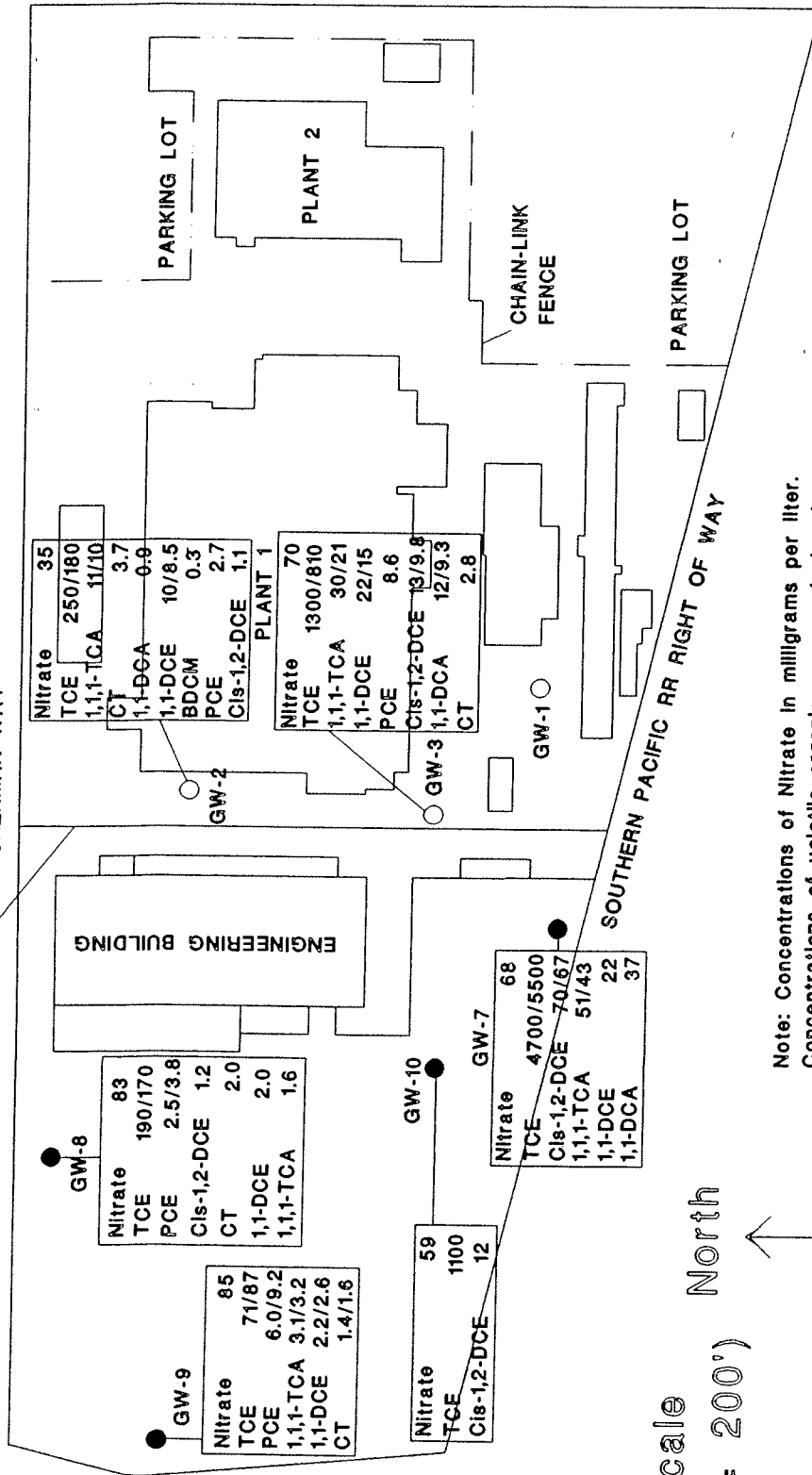
File Name: AS9-A57G1095

SECOR

SITE BOUNDARY

SHERMAN WAY

LANKERSHIM BOULEVARD



Scale North
(1" = 200')

Note: Concentrations of Nitrate in milligrams per liter.
Concentrations of volatile organic compounds in micrograms per liter.

Legend:

TCE Trichloroethene
PCE Tetrachloroethene
Cis-1,2-DCE Cis-1,2-Dichloroethene
1,1,1-TCA 1,1,1-Trichloroethane
1,1-DCE 1,1-Dichloroethene
1,1-DCA 1,1-Dichloroethane
CT Carbon Tetrachloride
BDCM Bromodichloromethane

AlliedSignal
AEROSPACE COMPANY
North Hollywood Facility

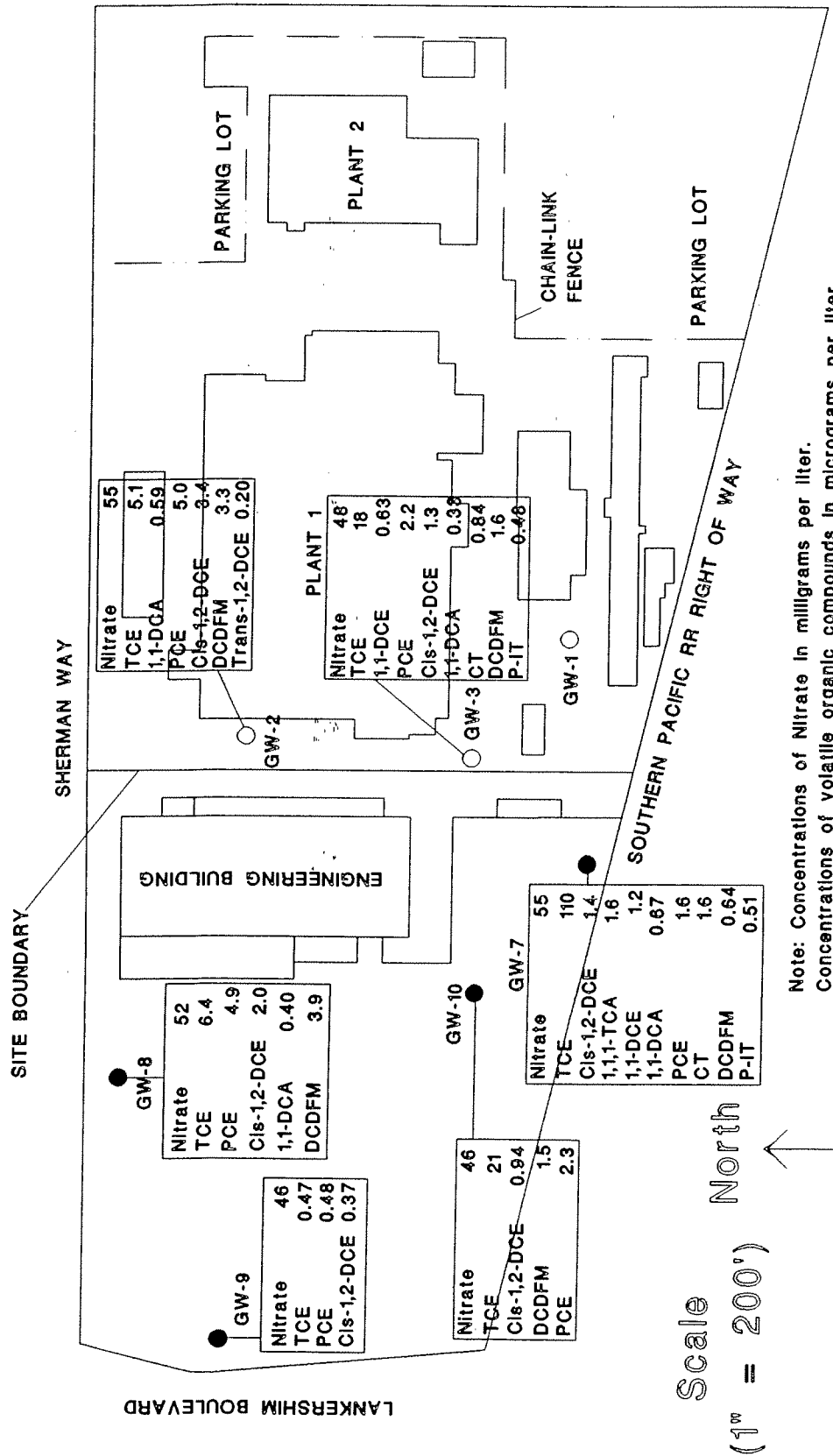
NITRATE AND VOC CONCENTRATION MAP

(March 8-10, 1995)

FIGURE 7

File Name: AS8-A57395V

SECOR



Legend:

TCE	Trichloroethene
PCE	Tetrachloroethene
Cis-1,2-DCE	Cis-1,2-Dichloroethene
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCE	1,1-Dichloroethene
1,1-DCA	1,1-Dichloroethane
CT	Carbon Tetrachloride
Trans-1,2-DCE	Trans-1,2-Dichloroethene
DCDFM	Dichlorodifluoromethane
P-IT	p-Isopropyl Toluene

AlliedSignal
AEROSPACE COMPANY
North Hollywood Facility

File Name: AS8-A57395VB

NITRATE AND VOC CONCENTRATION MAP

(September 20-21, 1995)

FIGURE 8

SECOR

Figure 9
Historic Groundwater Elevations in GW-1

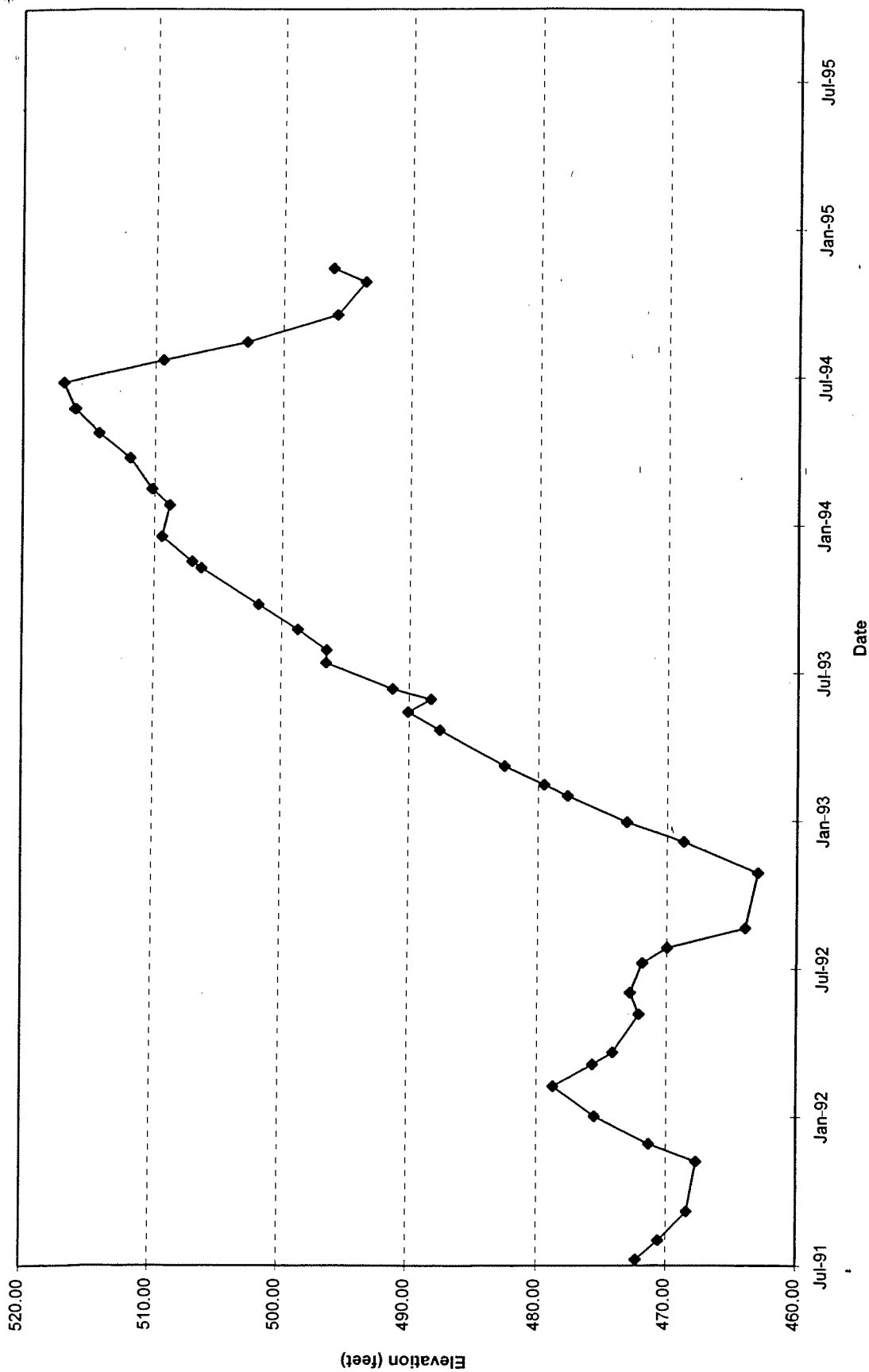


Figure 10
Historic Nitrate Concentrations in GW-1

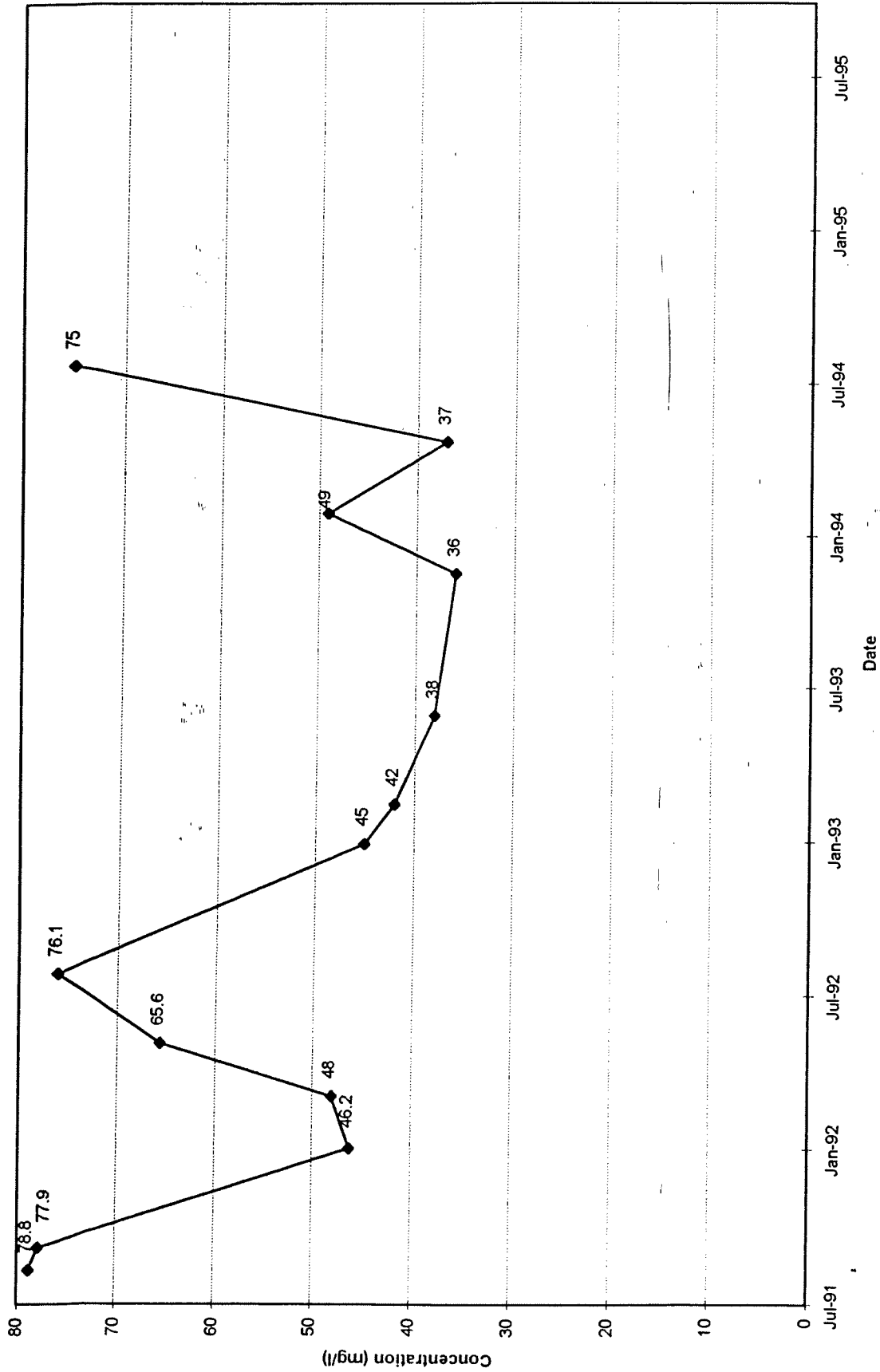


Figure 11
Historic 1,1,1-TCA Concentrations in GW-1

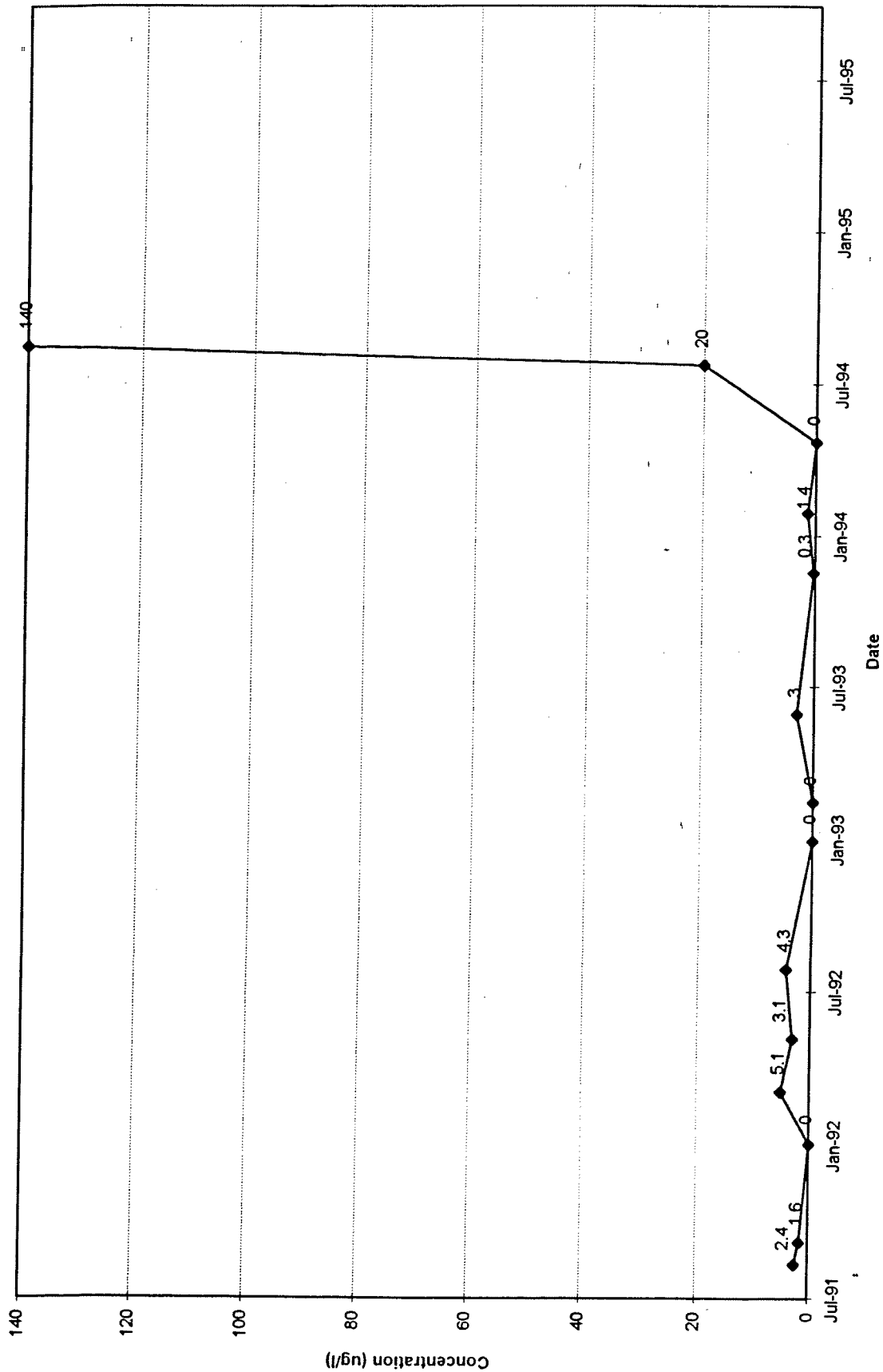


Figure 12
Historic 1,1-DCA Concentrations in GW-1

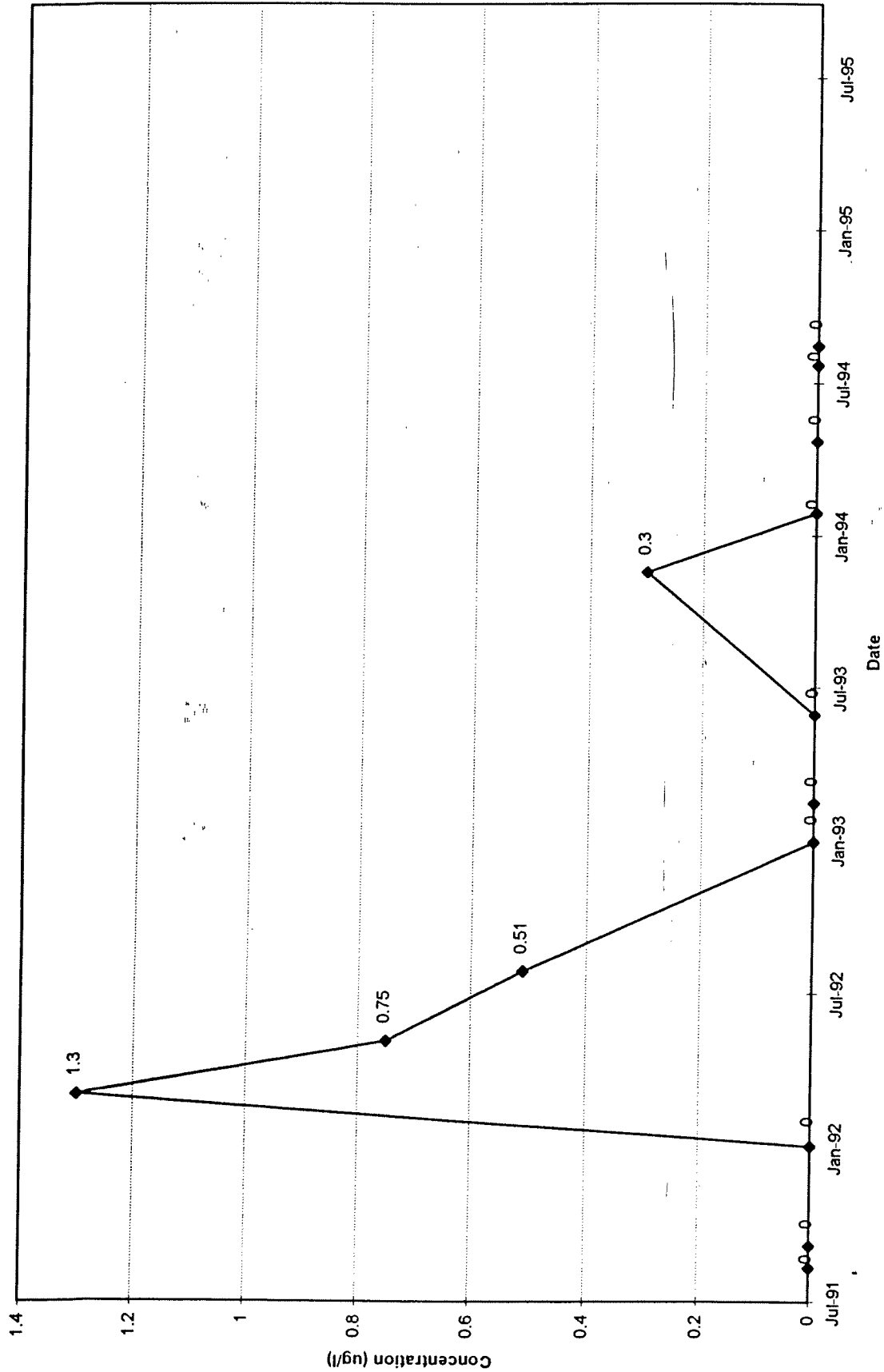
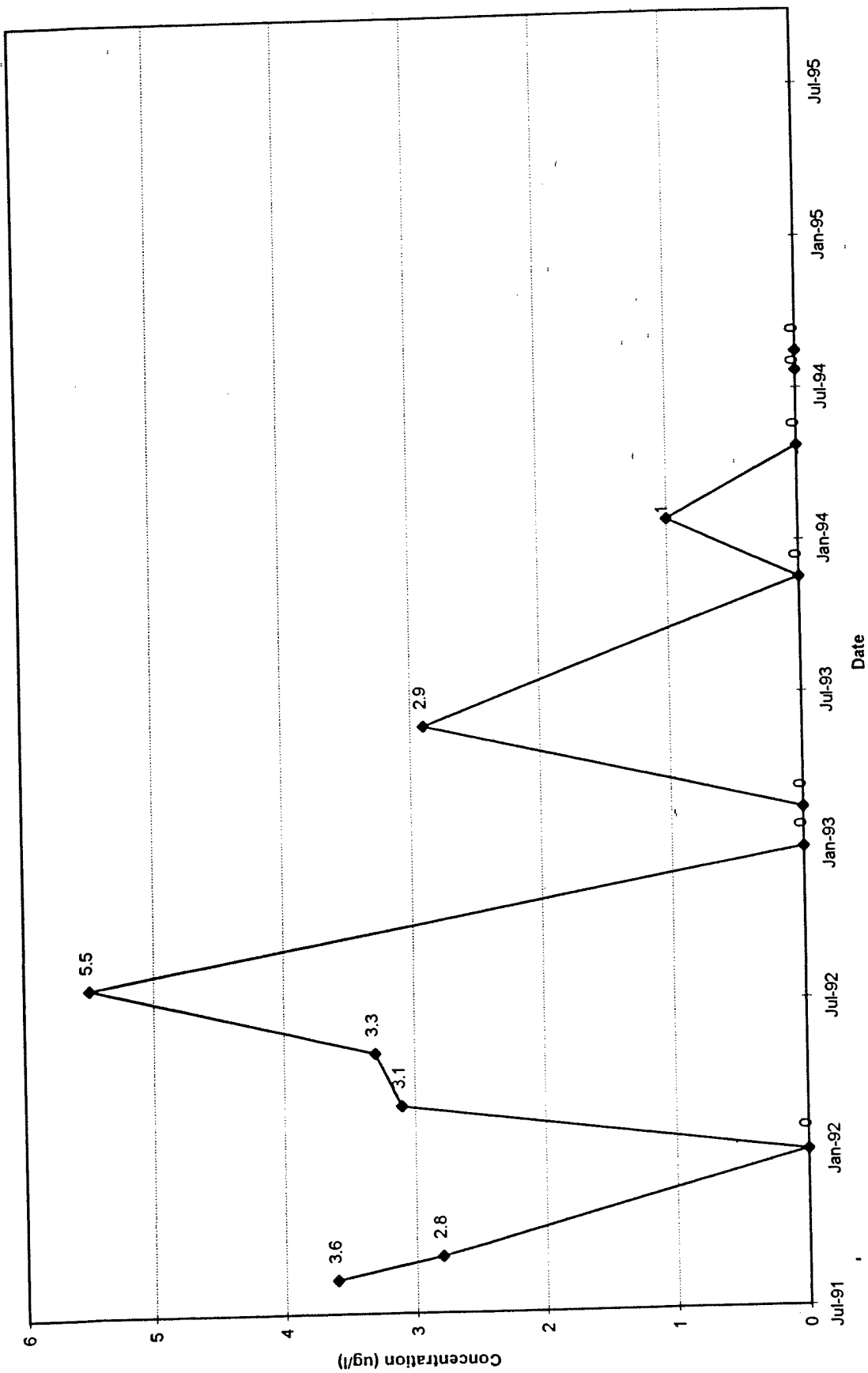


Figure 13
Historic 1,1-DCE Concentrations in GW-1



003254

Figure 15
Historic TCE Concentrations in GW-1

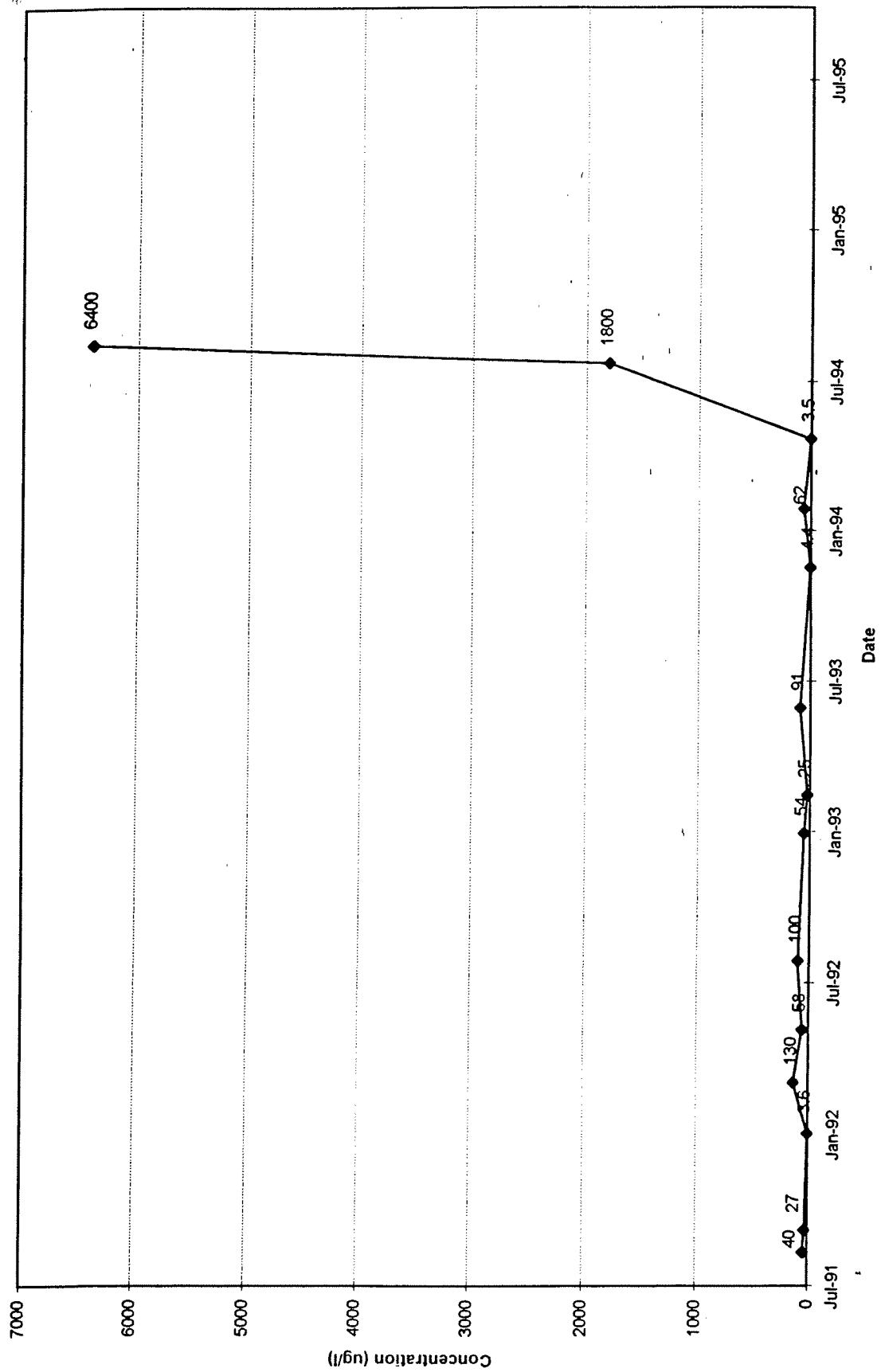


Figure 16
Historic PCE Concentrations in GW-1

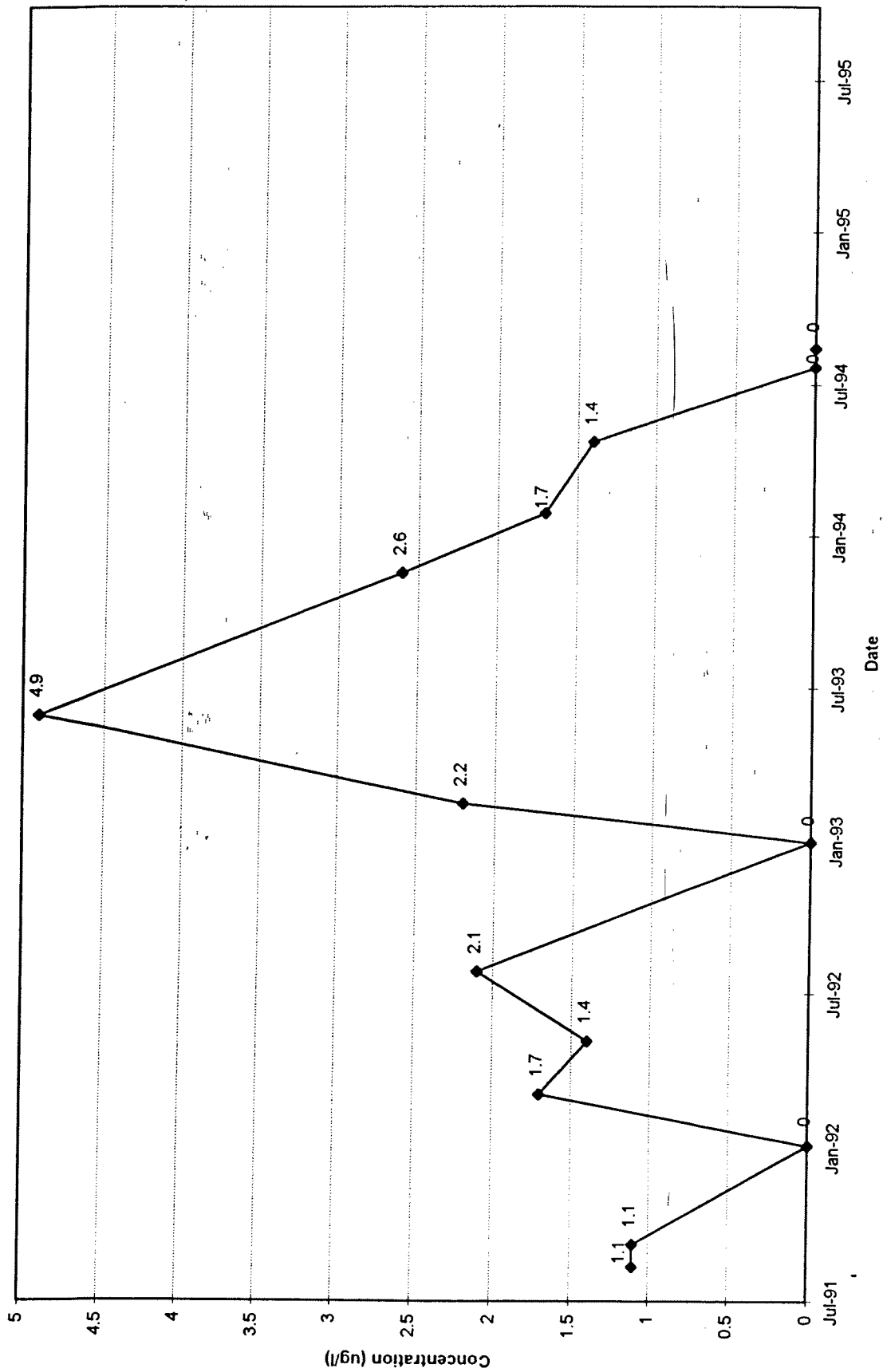


Figure 17
Historic CIS-1,2-DCE Concentrations in GW-1

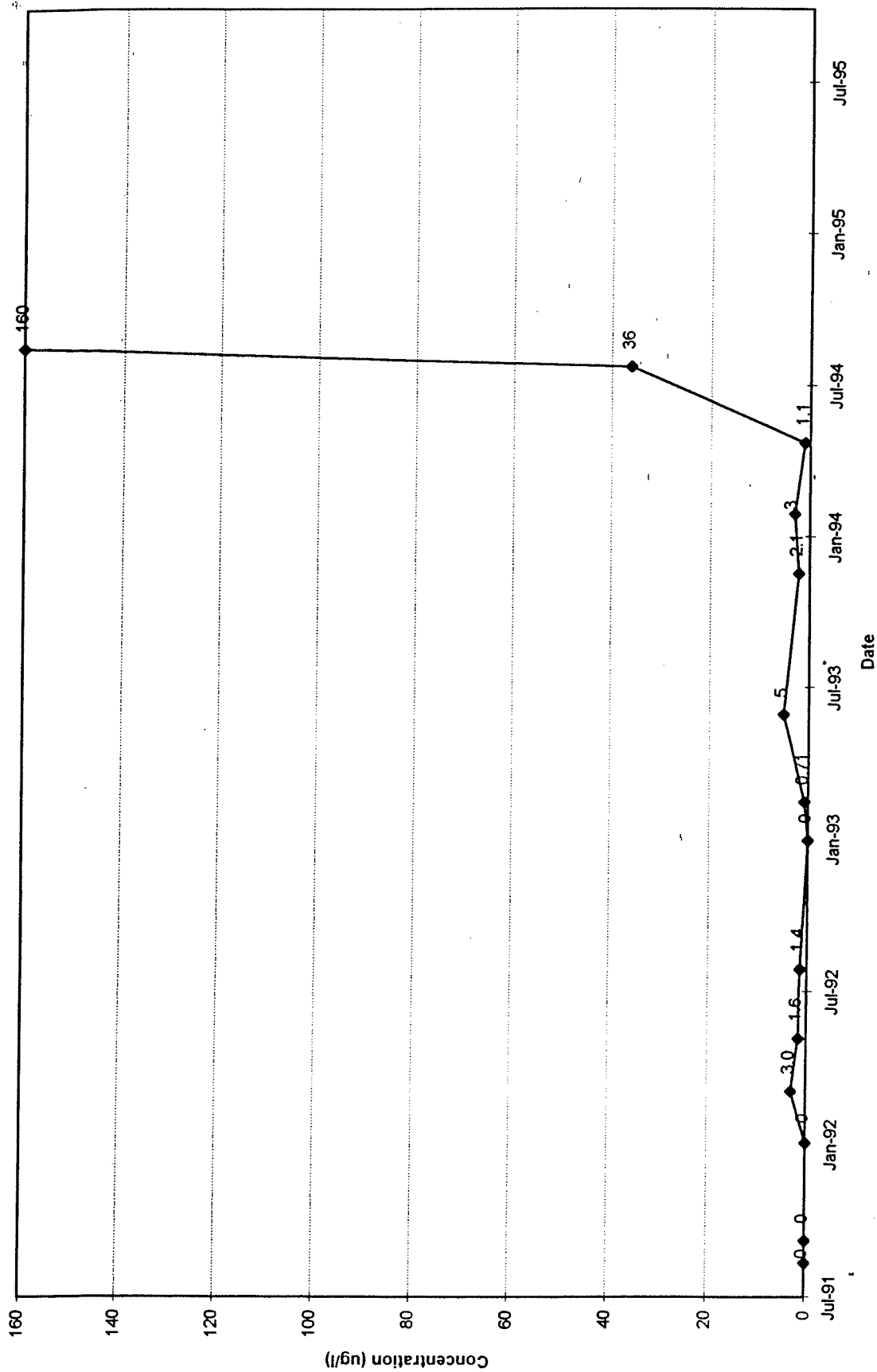


Figure 18
Historic Groundwater Elevations in GW-2

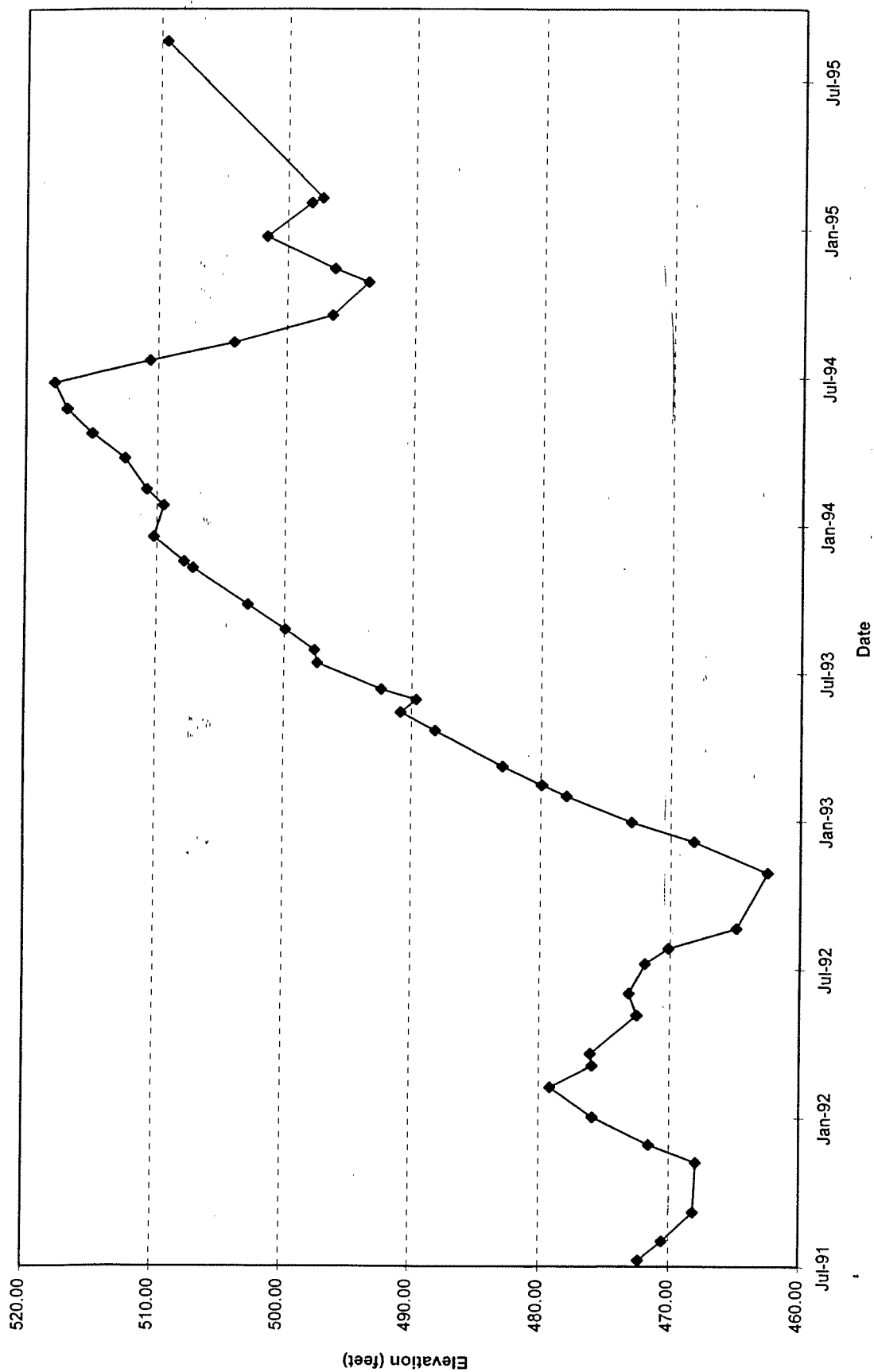


Figure 19
Historic Nitrate Concentrations in GW-2

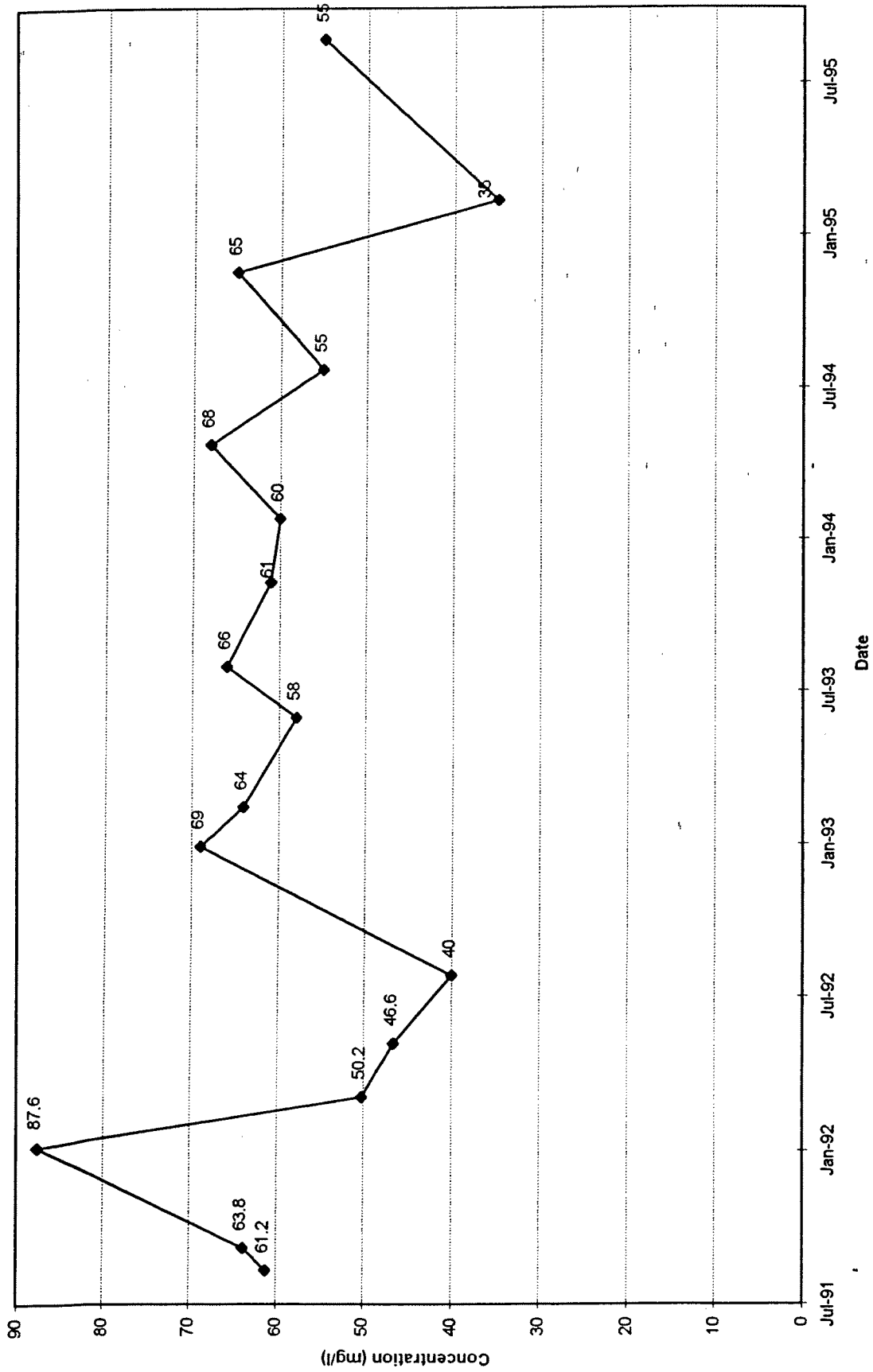


Figure 20
Historic 1,1,1-TCA Concentrations in GW-2

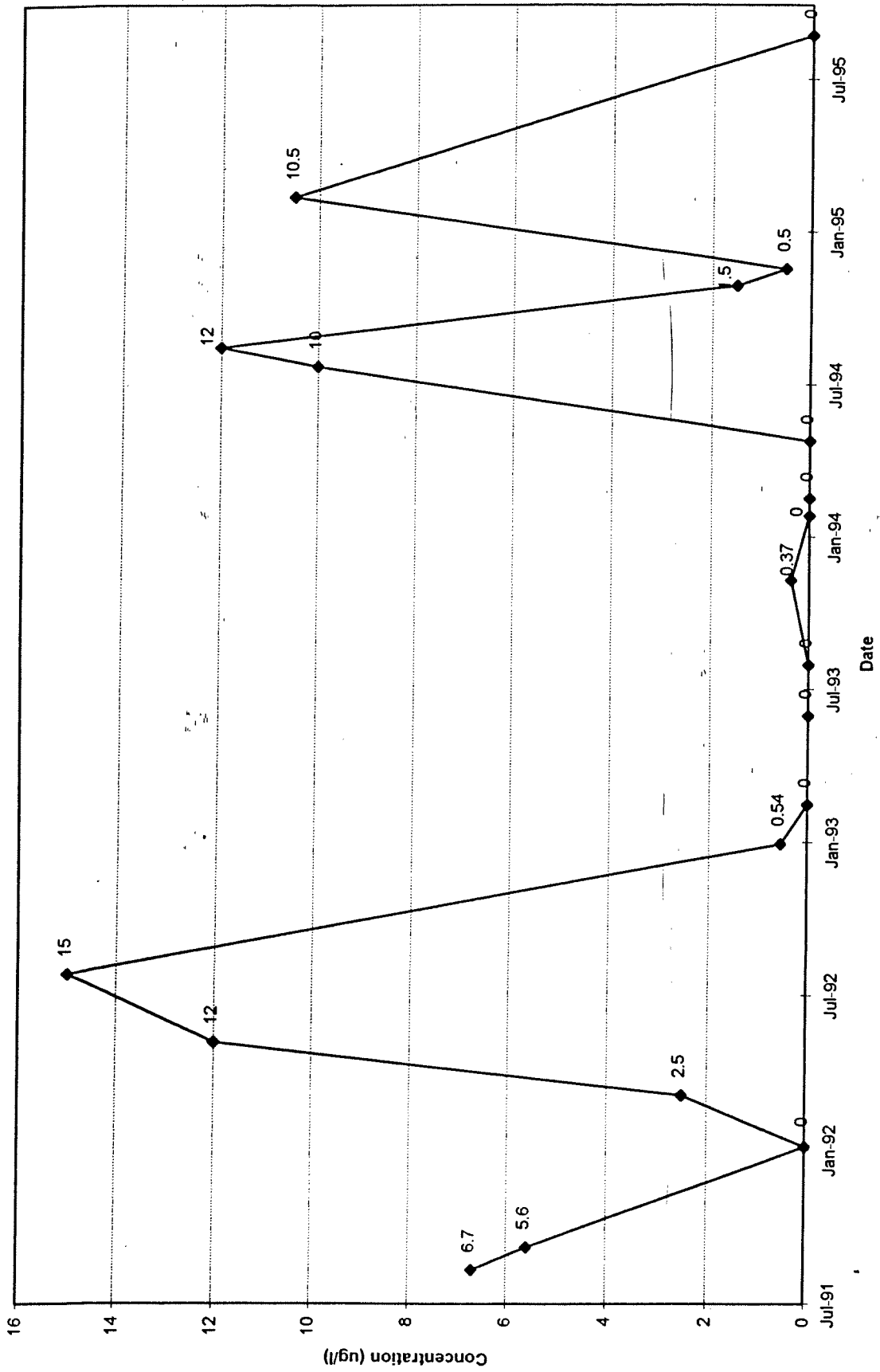


Figure 21
Historic 1,1-DCE Concentrations in GW-2

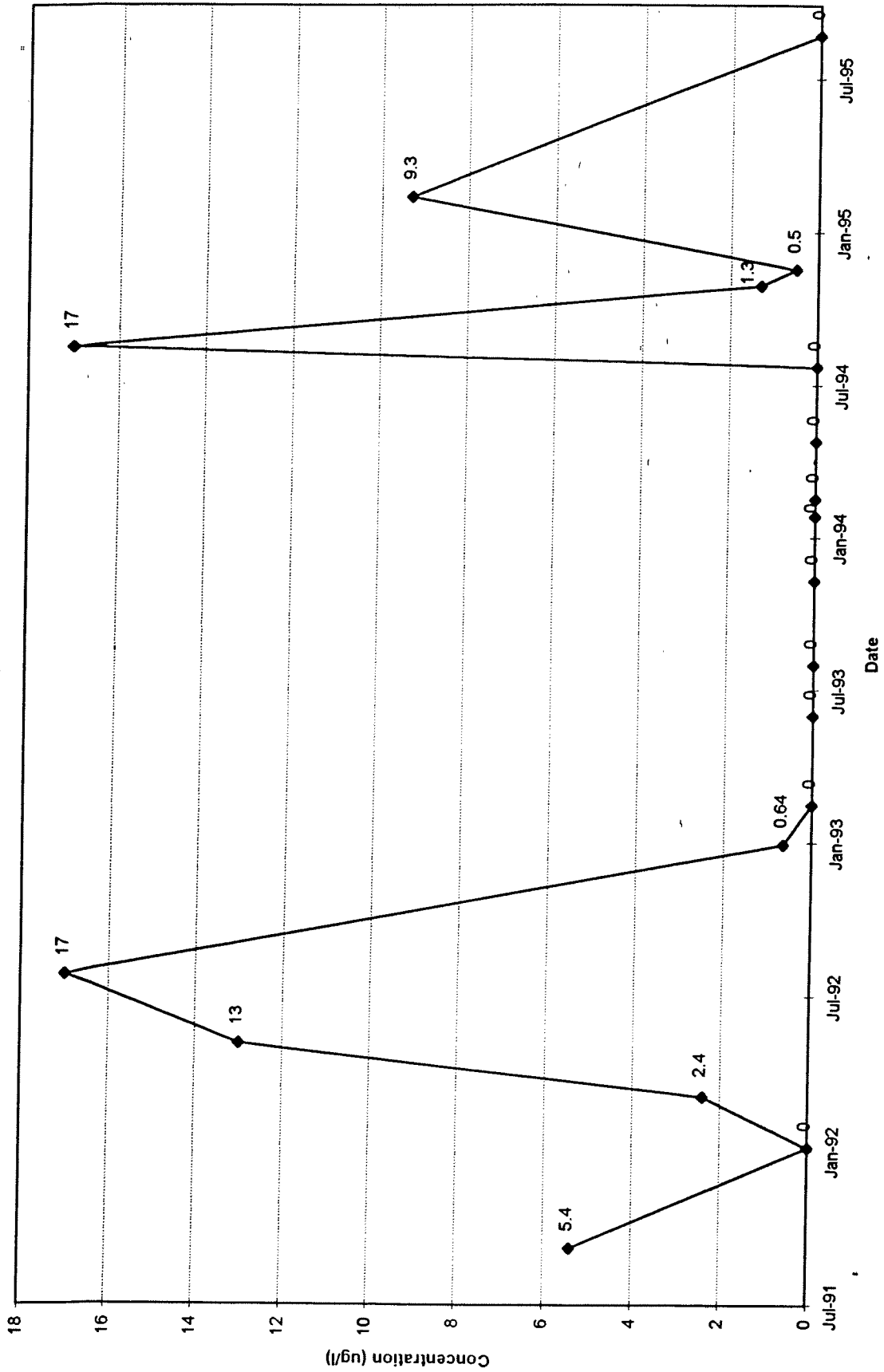


Figure 22
Historic CCL4 Concentrations in GW-2

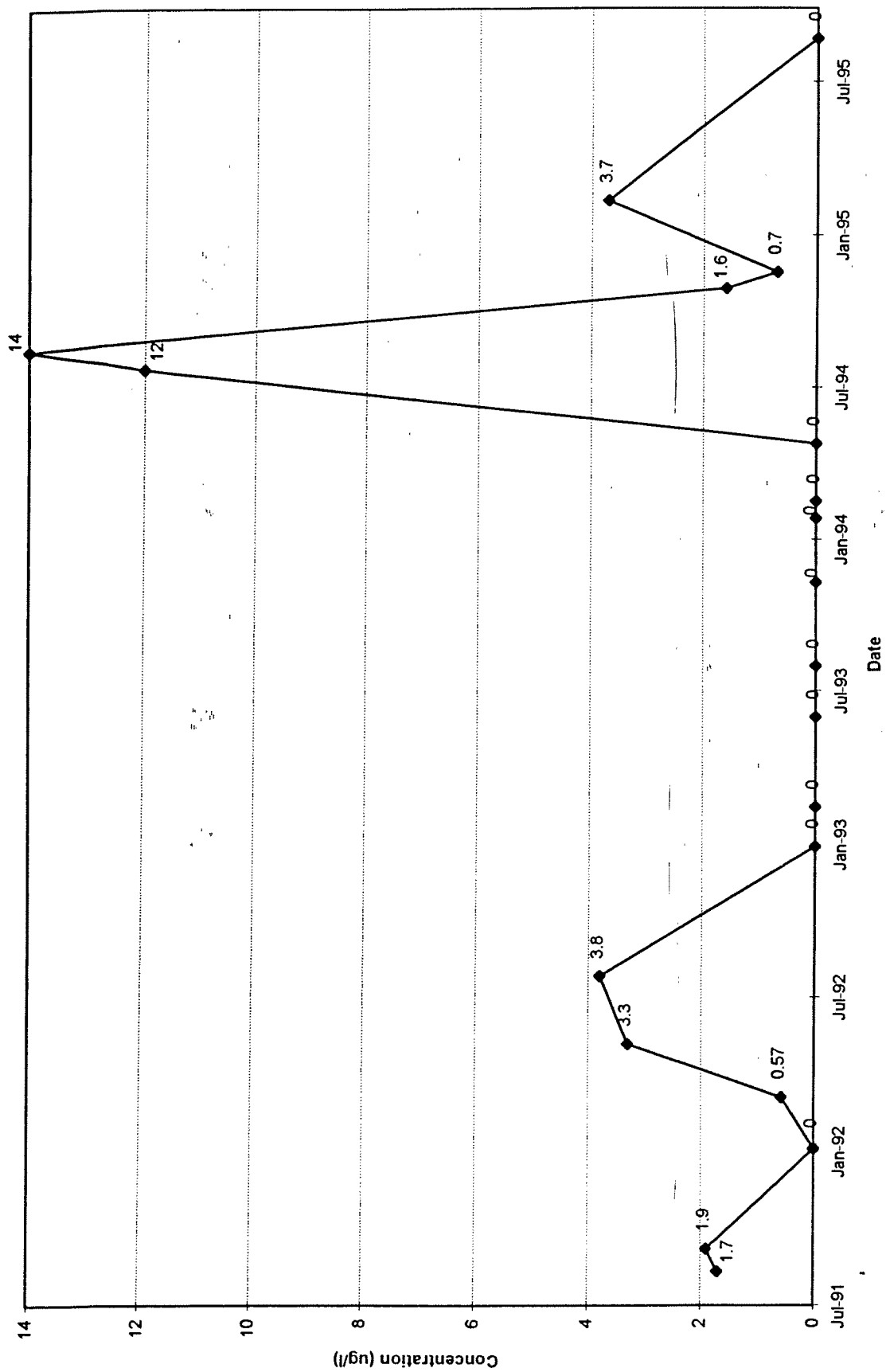


Figure 23
Historic TCE Concentrations in GW-2

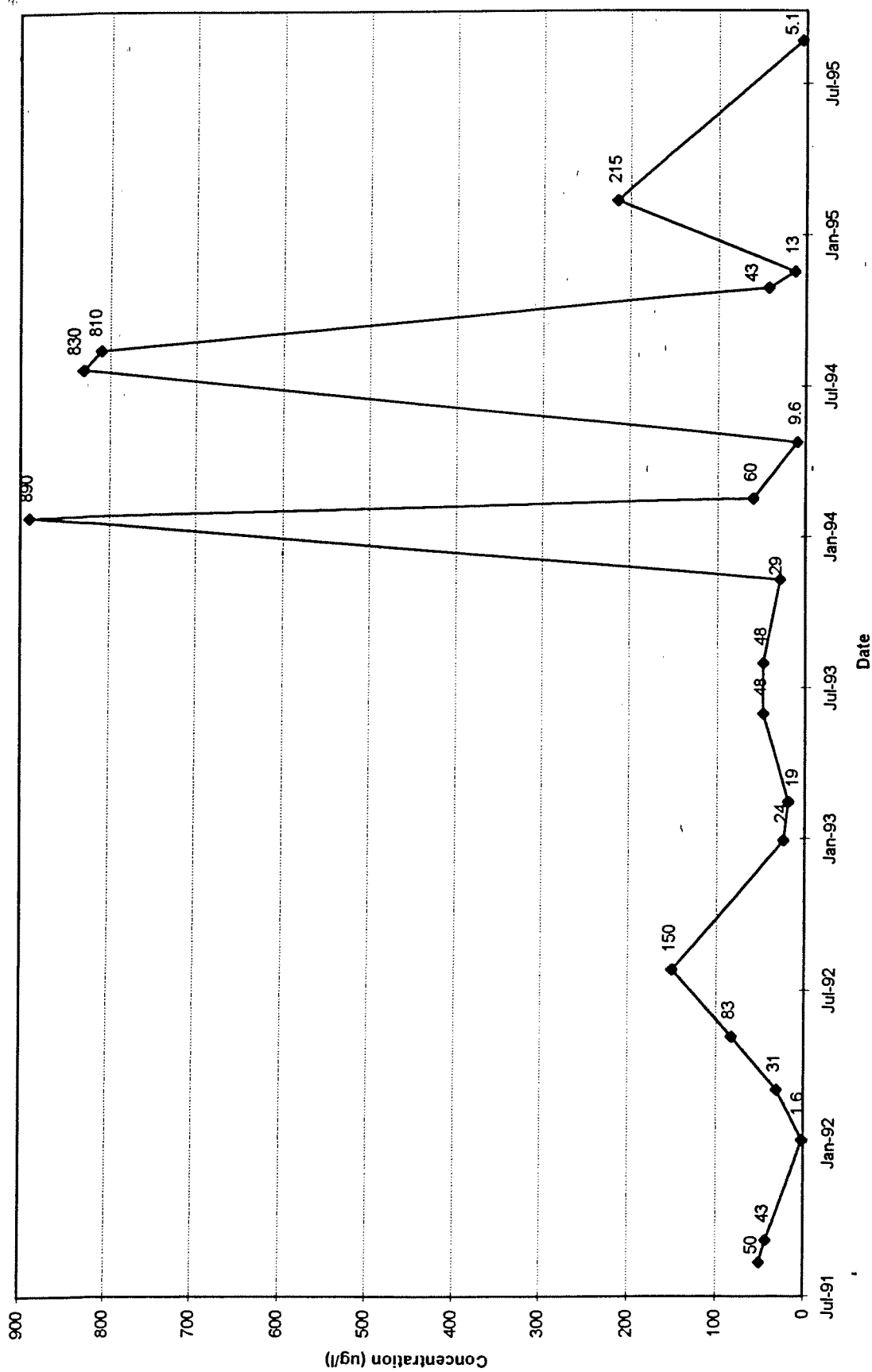


Figure 24
Historic PCE Concentrations in GW-2

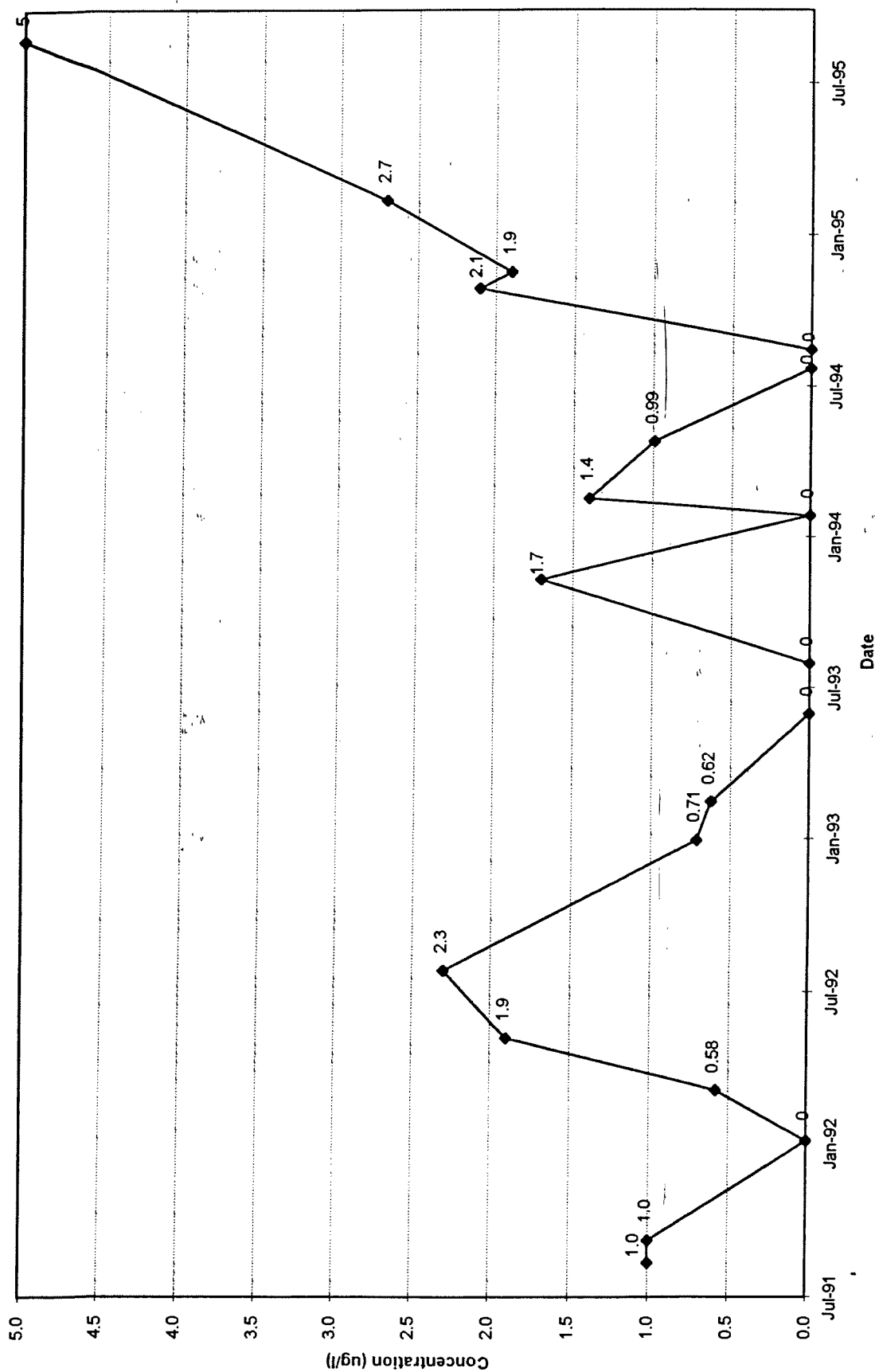


Figure 25
Historic Groundwater Elevations in GW-3

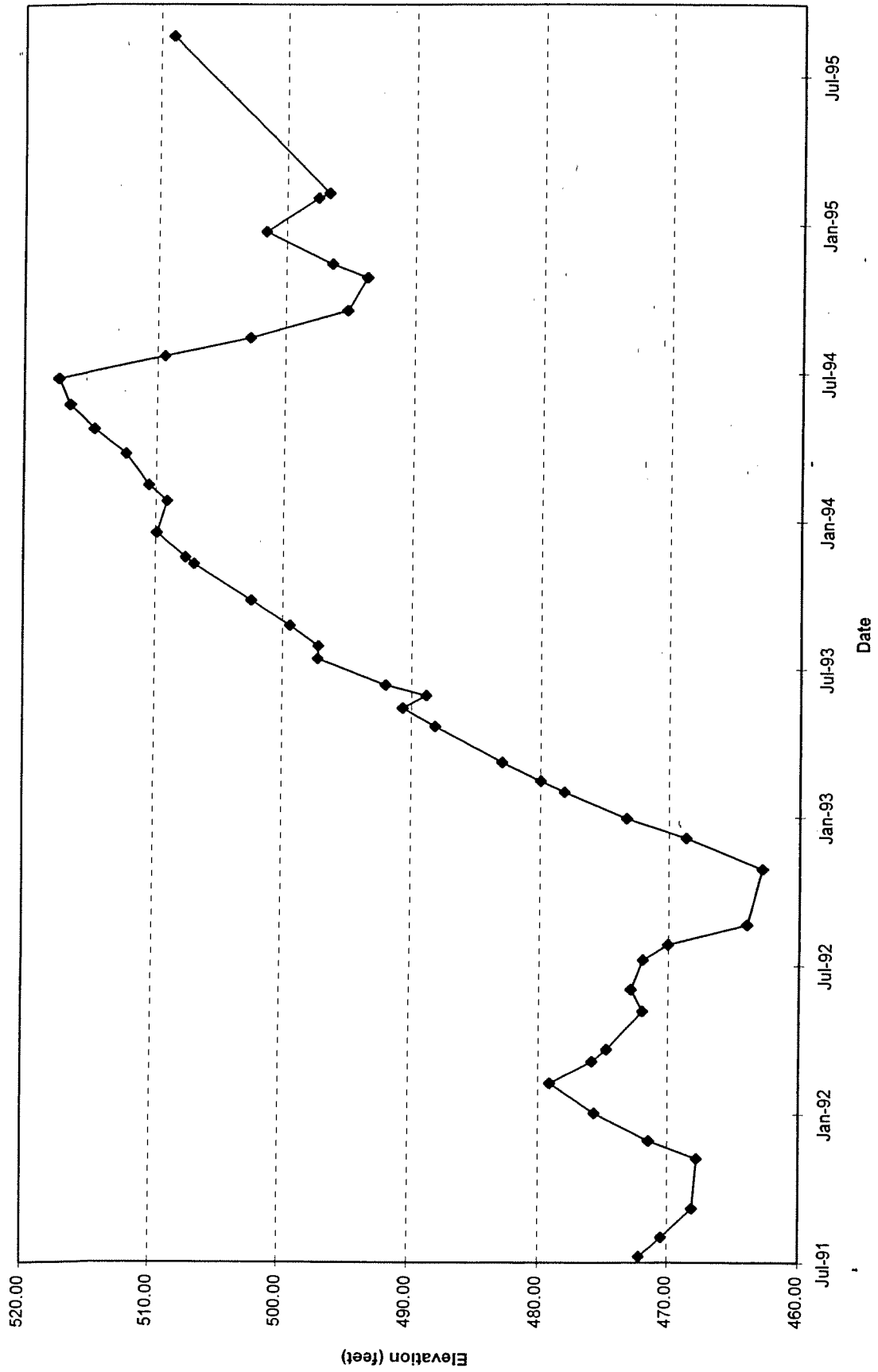


Figure 26
Historic Nitrate Concentrations in GW-3

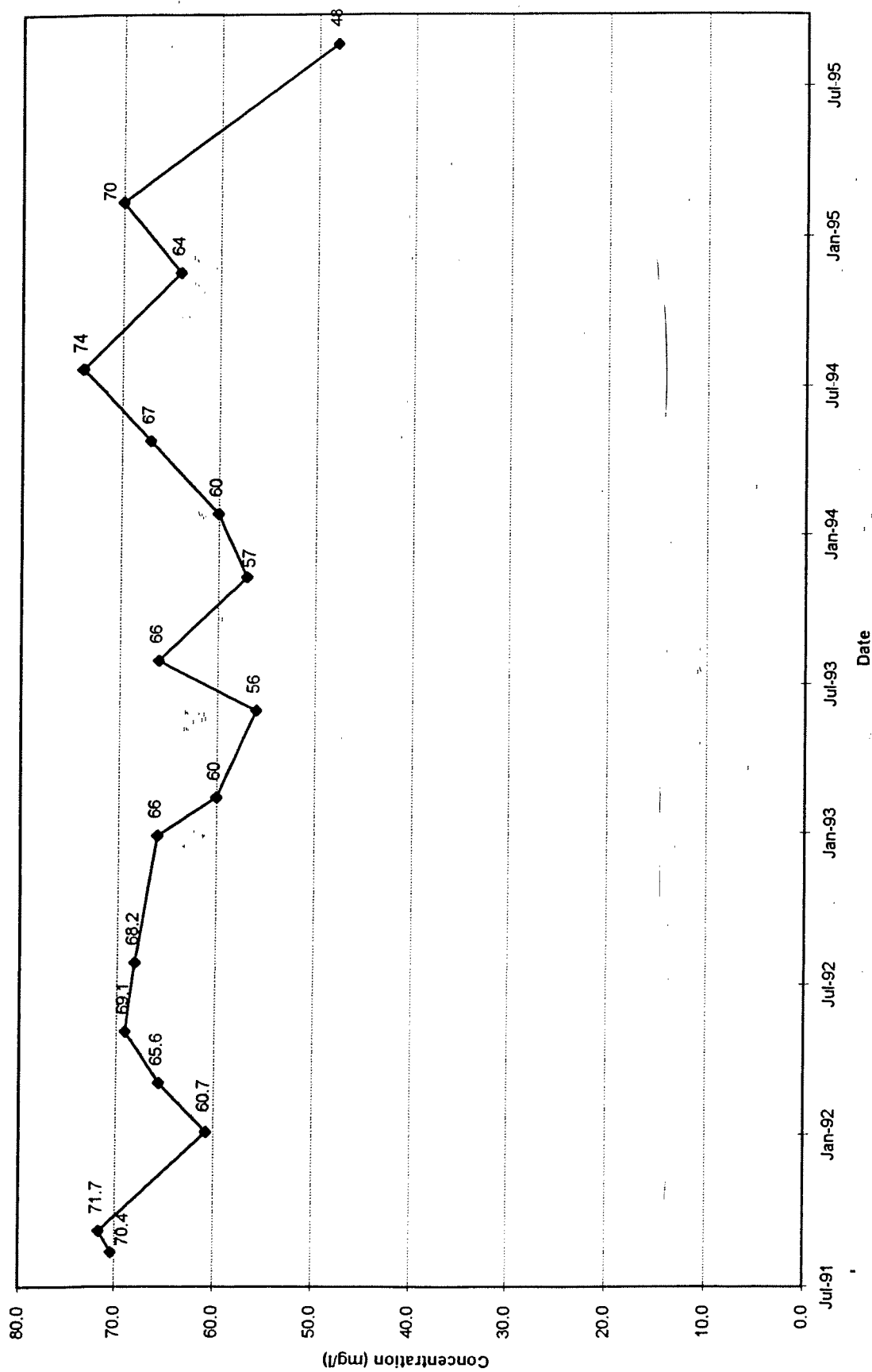


Figure 27
Historic 1,1,1-TCA Concentrations in GW-3

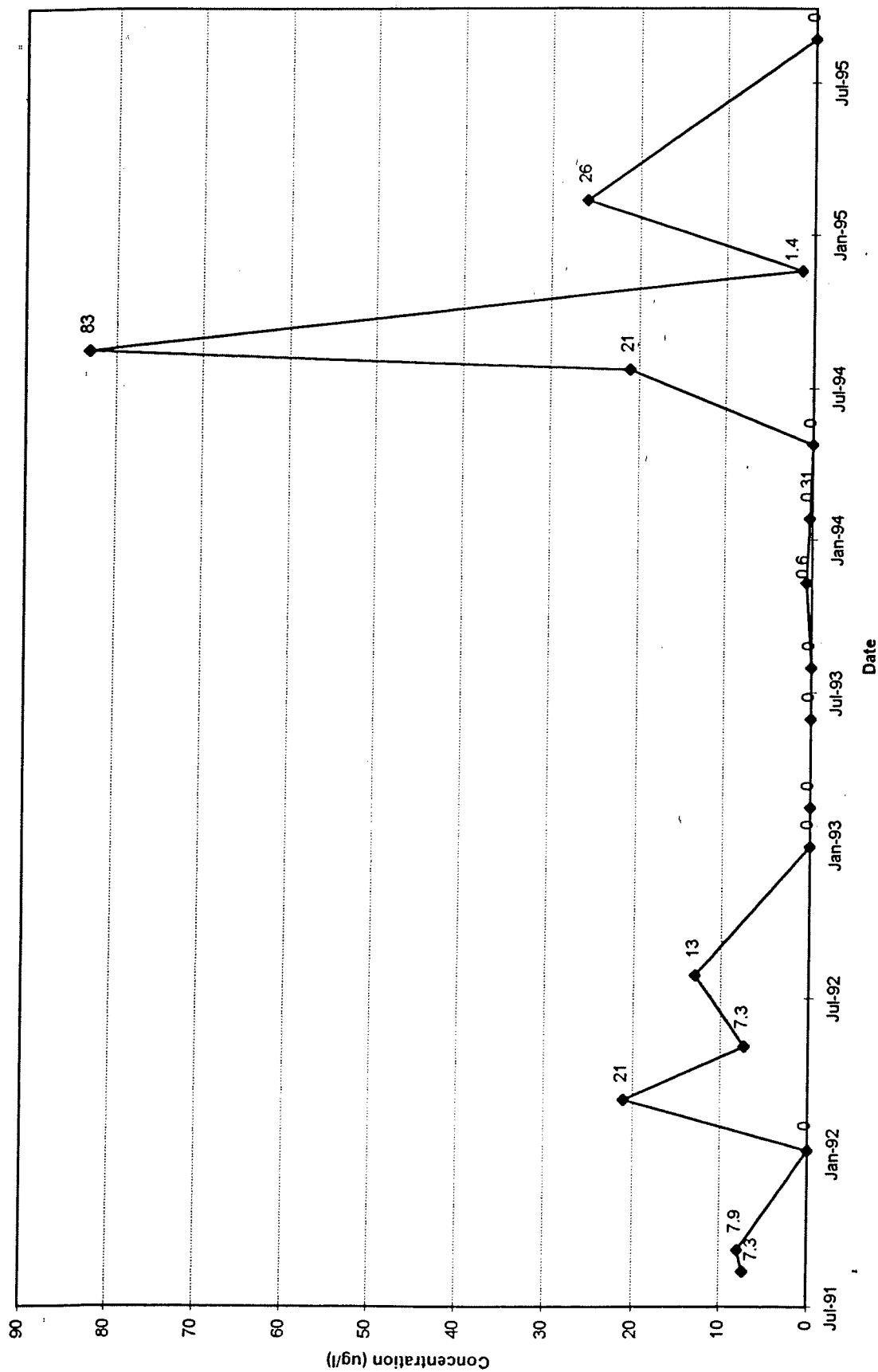


Figure 28
Historic 1,1-DCA Concentrations in GW-3

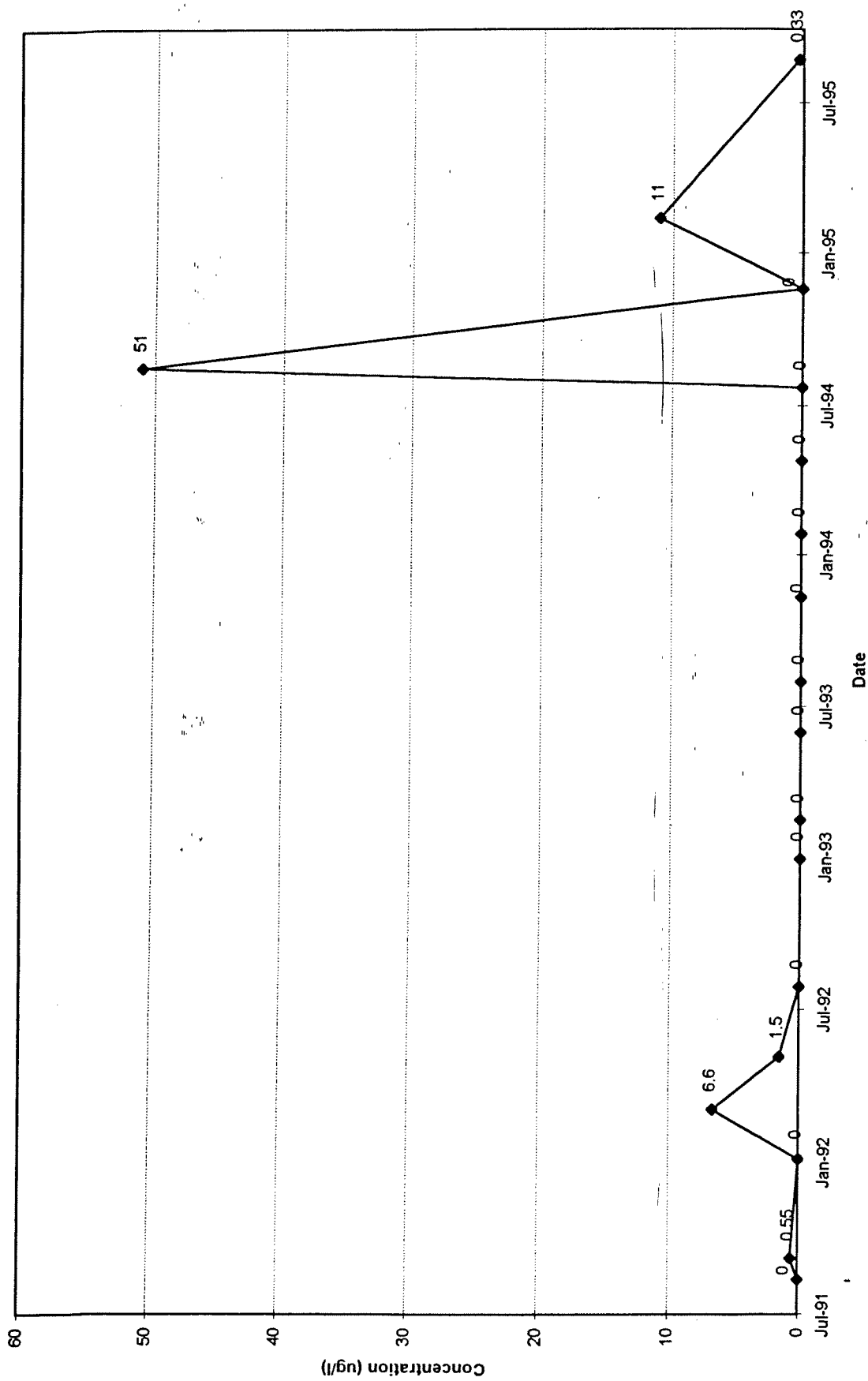


Figure 29
Historic 1,1-DCE Concentrations in GW-3

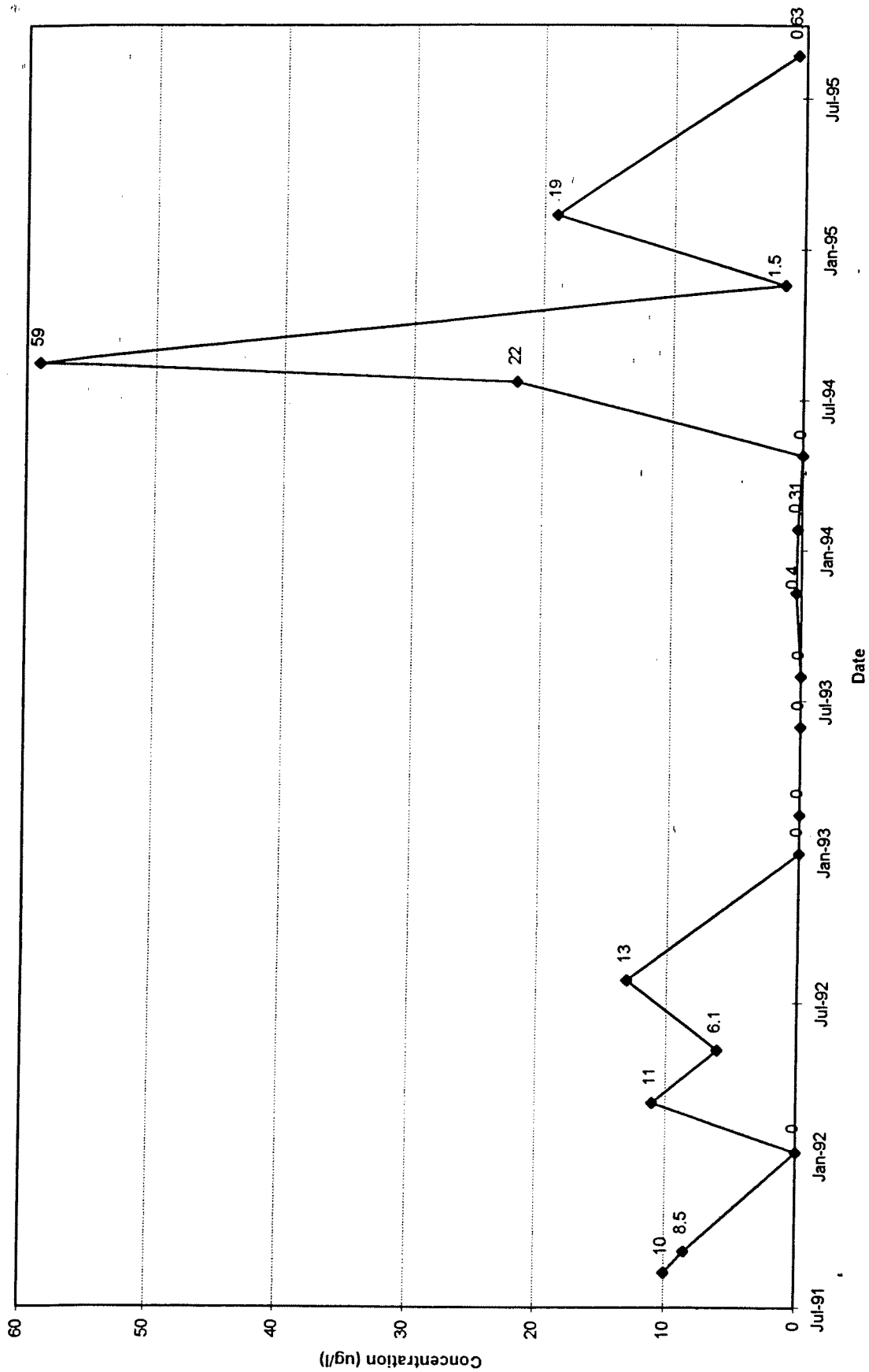


Figure 30
Historic TCE Concentrations in GW-3

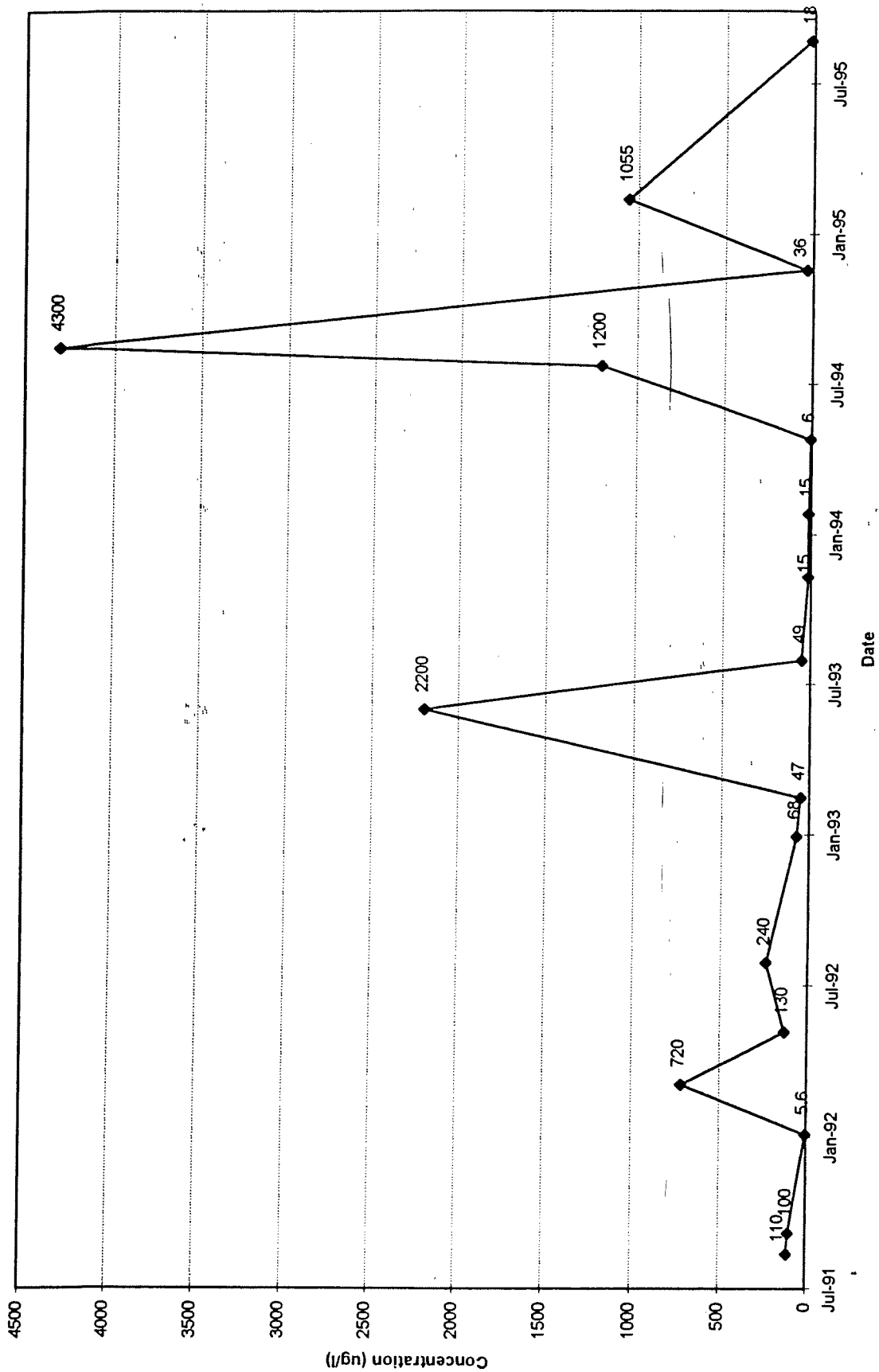


Figure 31
Historic PCE Concentrations in GW-3

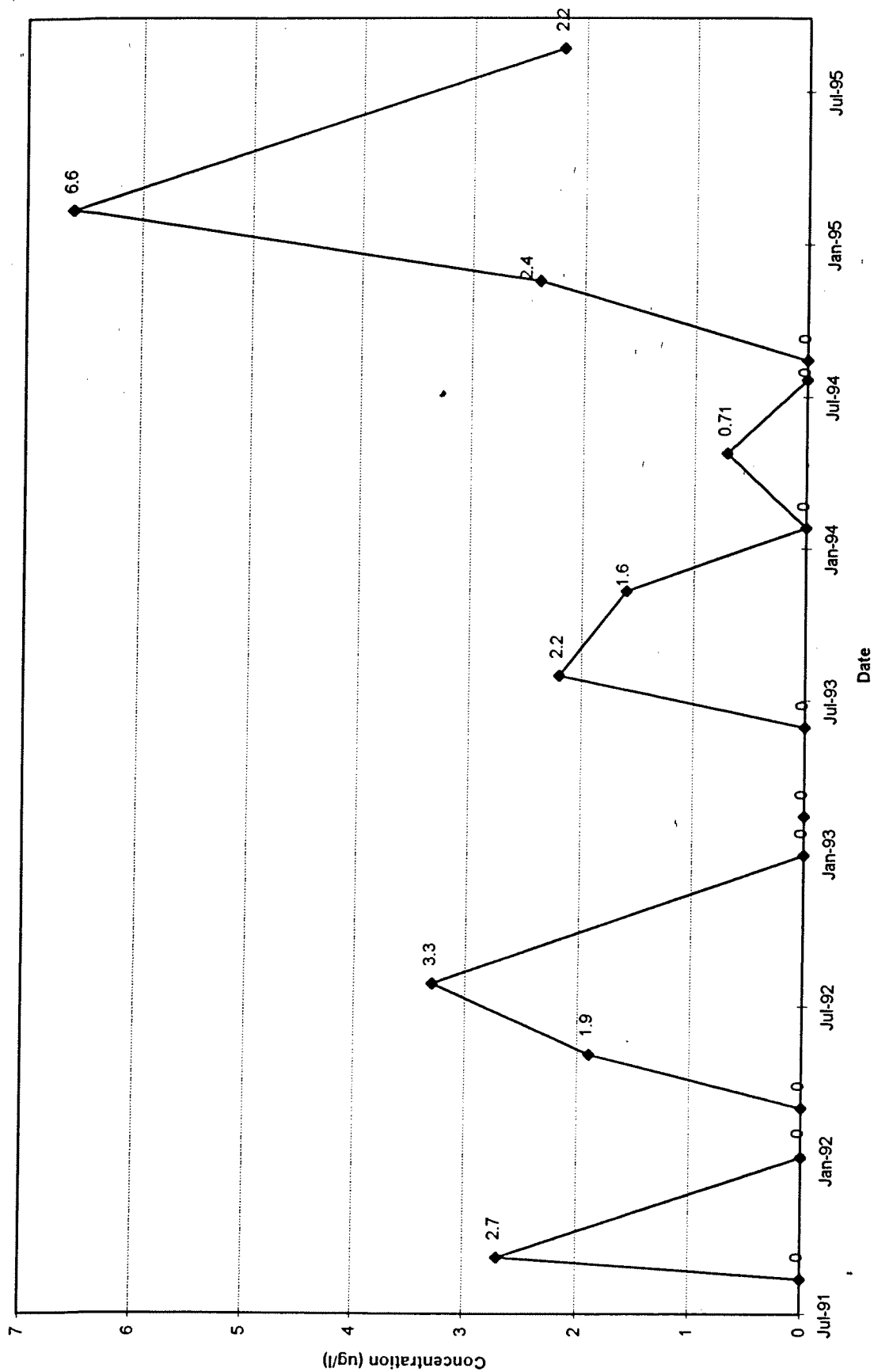


Figure 32

Historic CIS-1,2-DCE Concentrations in GW-3

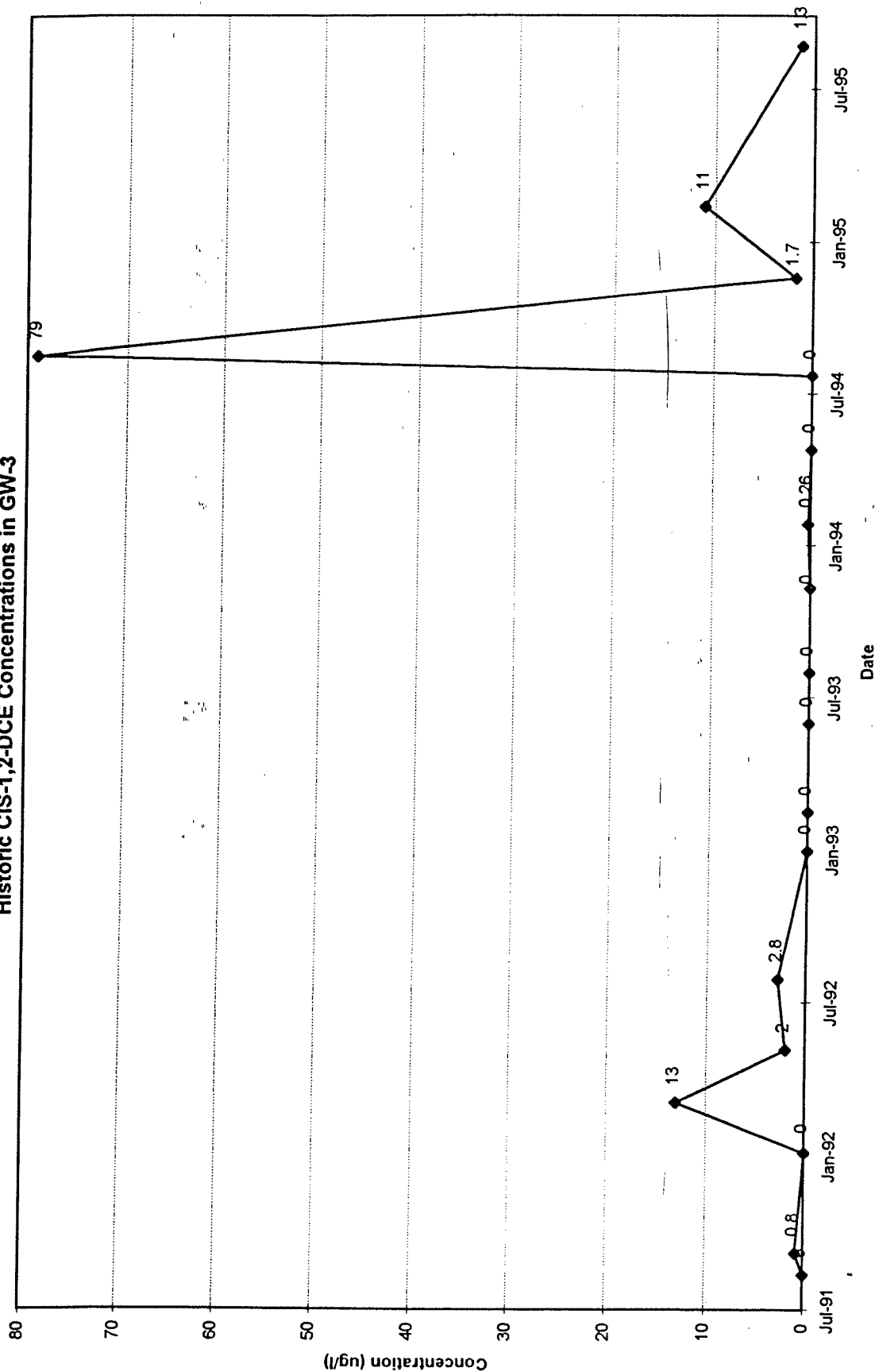


Figure 33
Historic Groundwater Elevations in GW-7

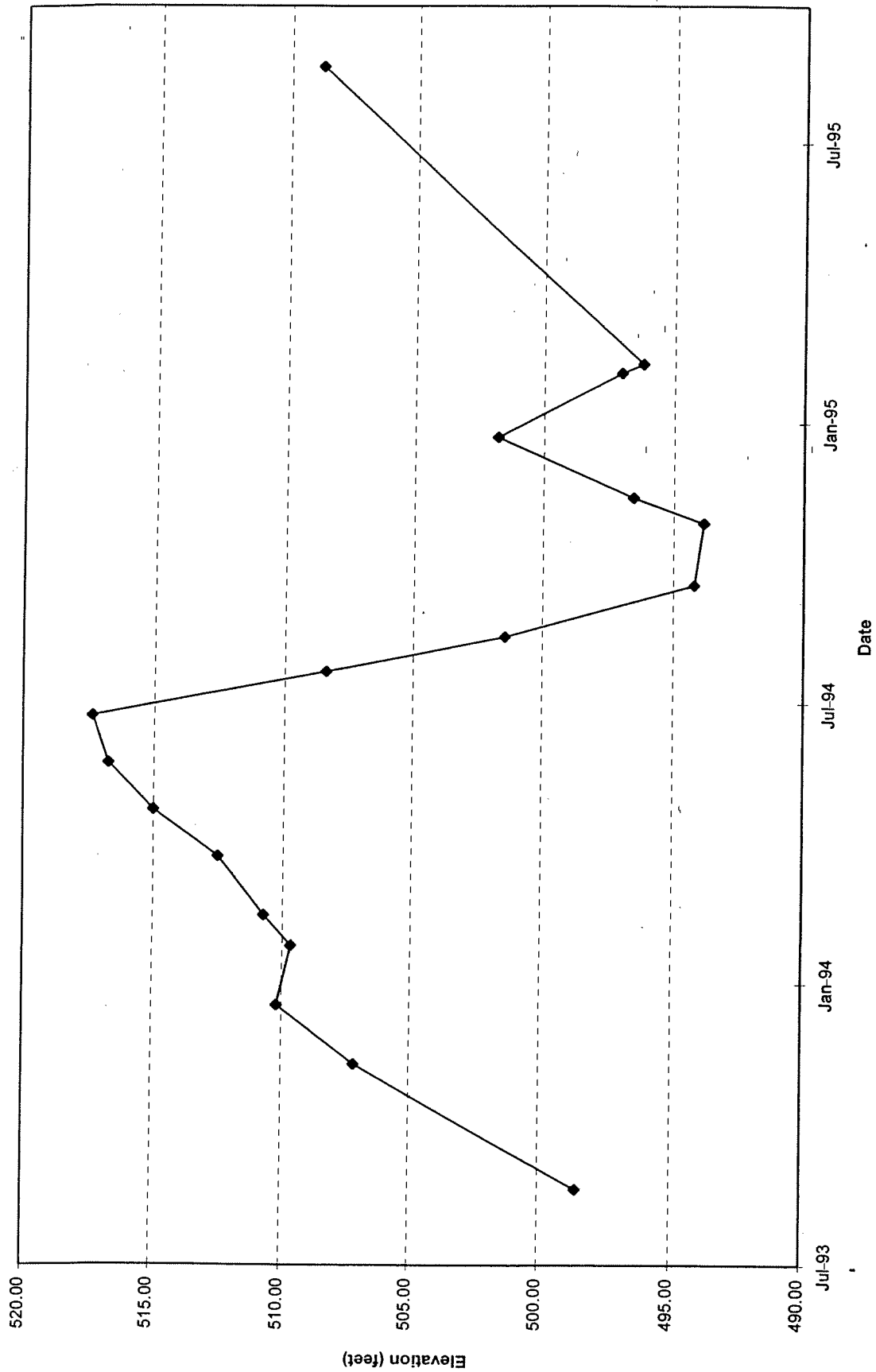


Figure 34
Historic Nitrate Concentrations in GW-7

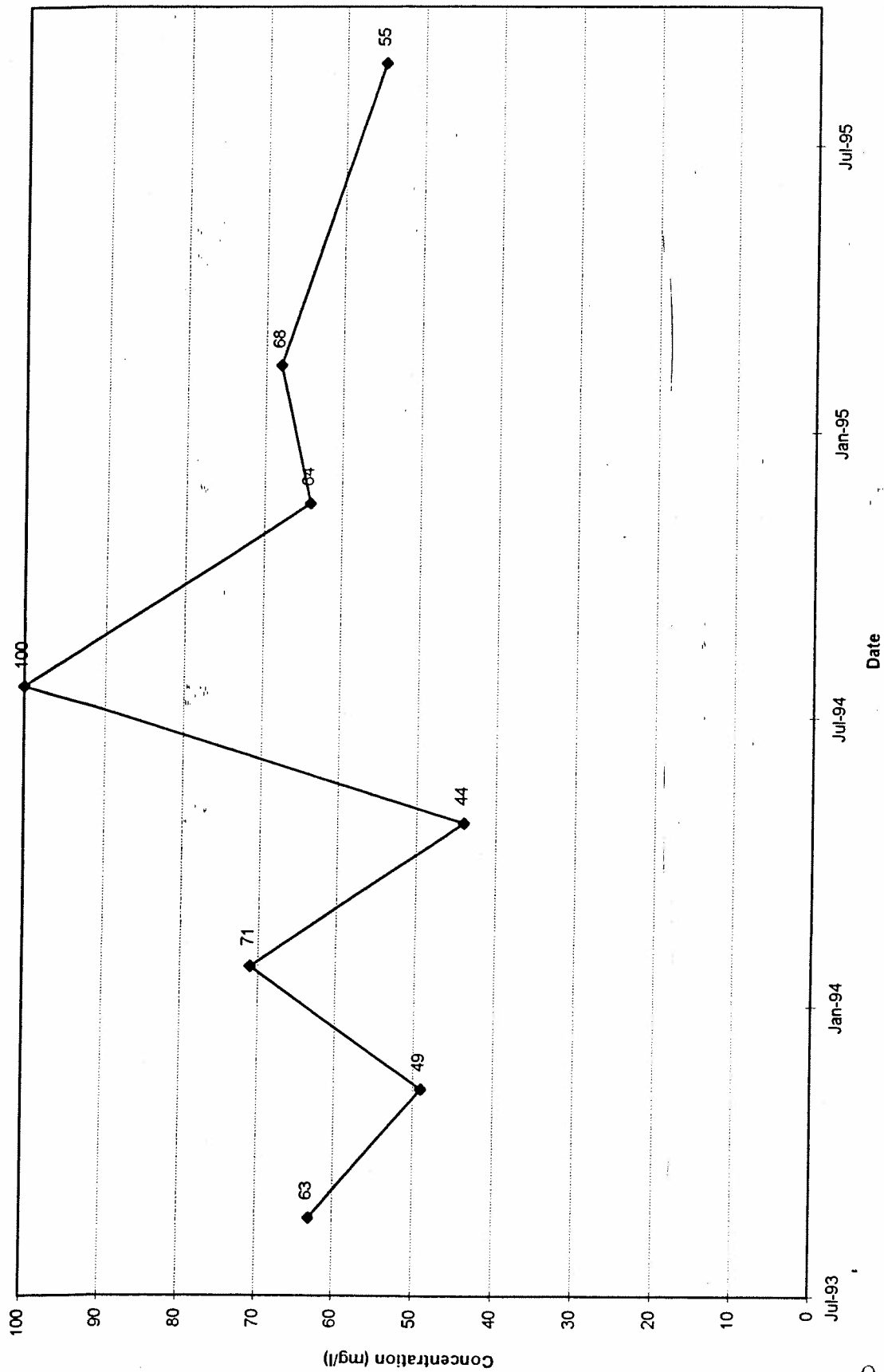
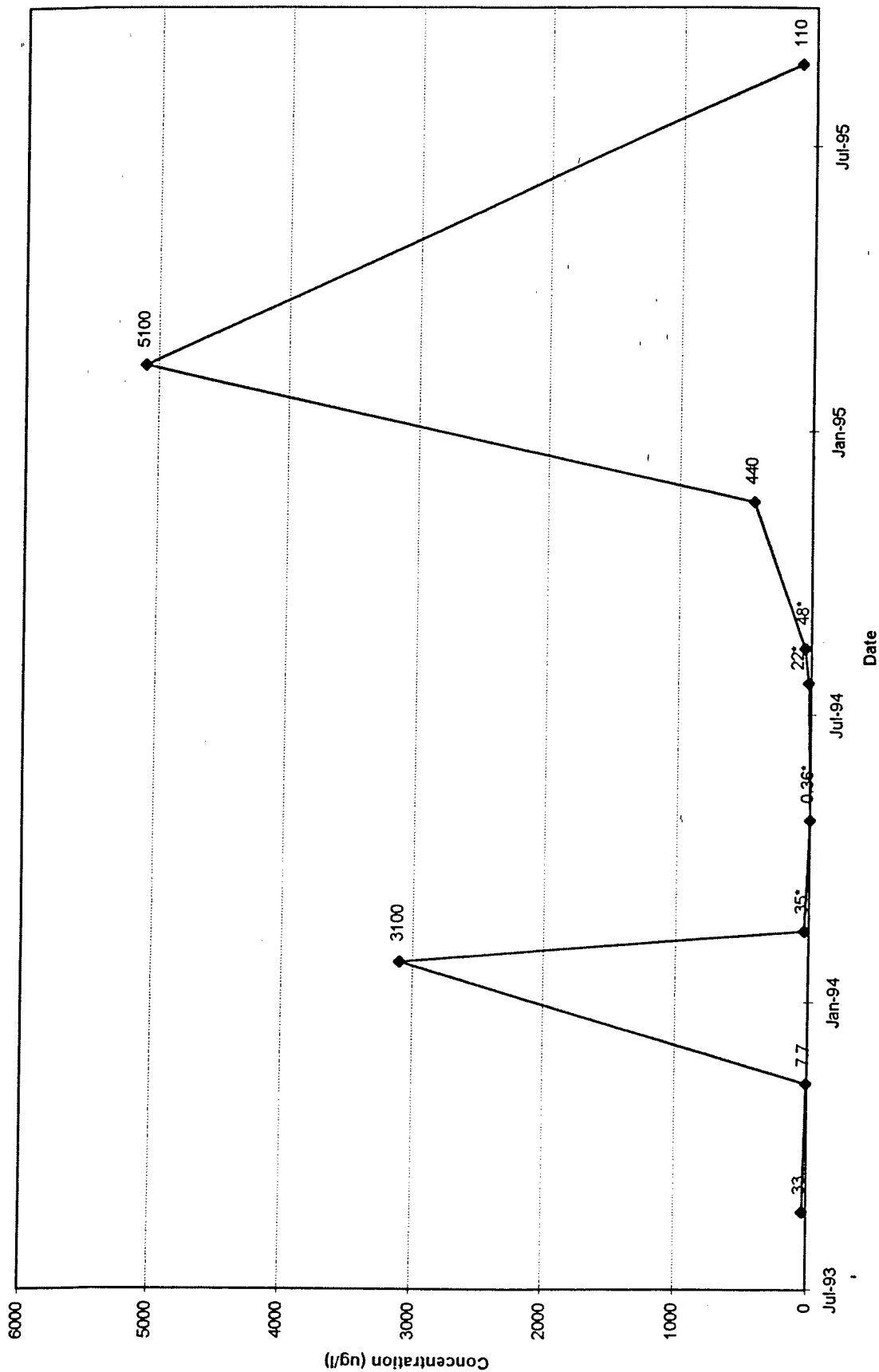
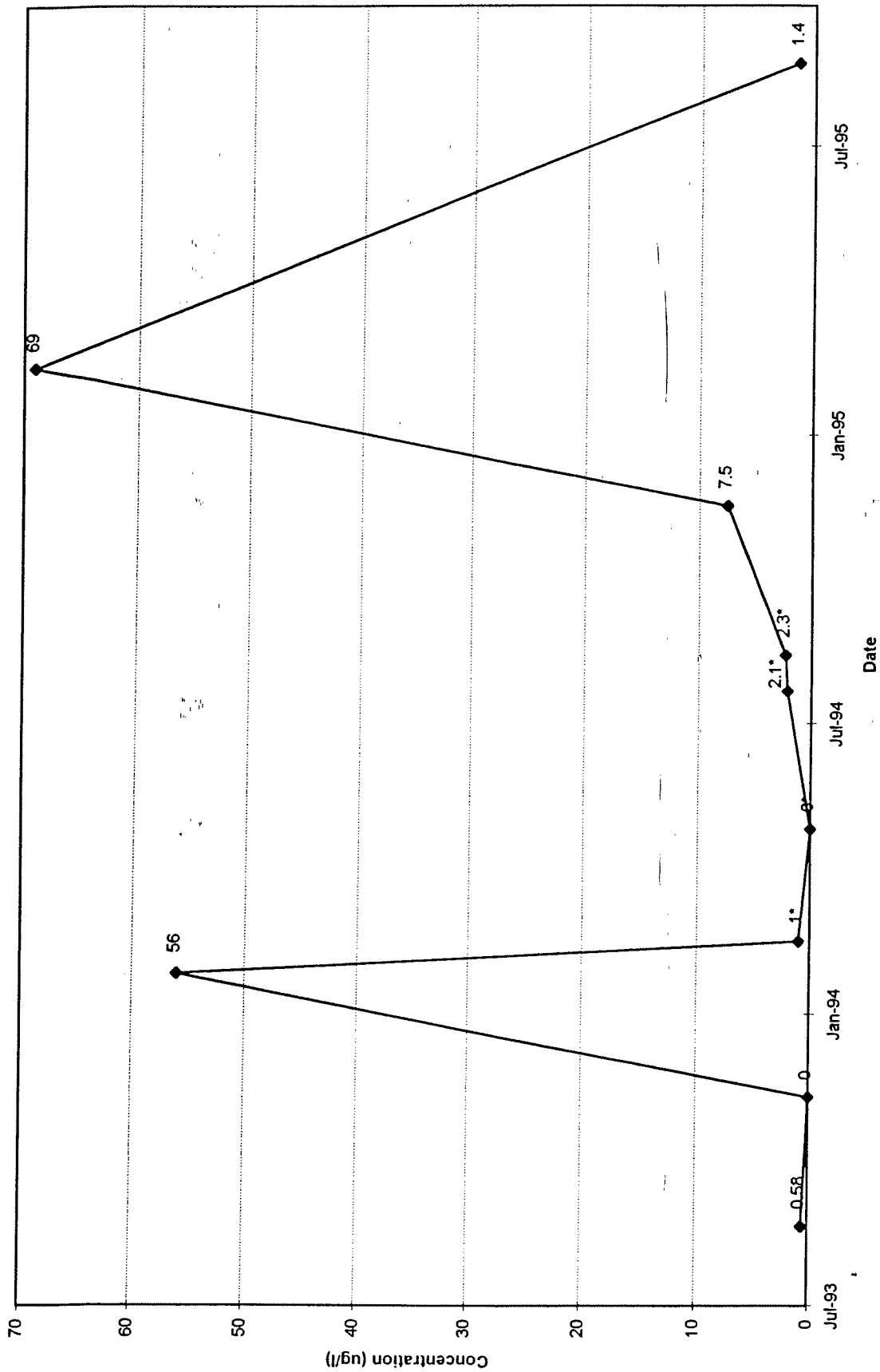


Figure 35
Historic TCE Concentrations in GW-7



* Underestimated and invalid due to ruptured bladder of the dedicated bladder pump.

Figure 36
 Historic CIS-1,2-DCE Concentrations in GW-7



* Underestimated and invalid due to ruptured bladder of the dedicated bladder pump.

Figure 37
Historic Groundwater Elevations in GW-8

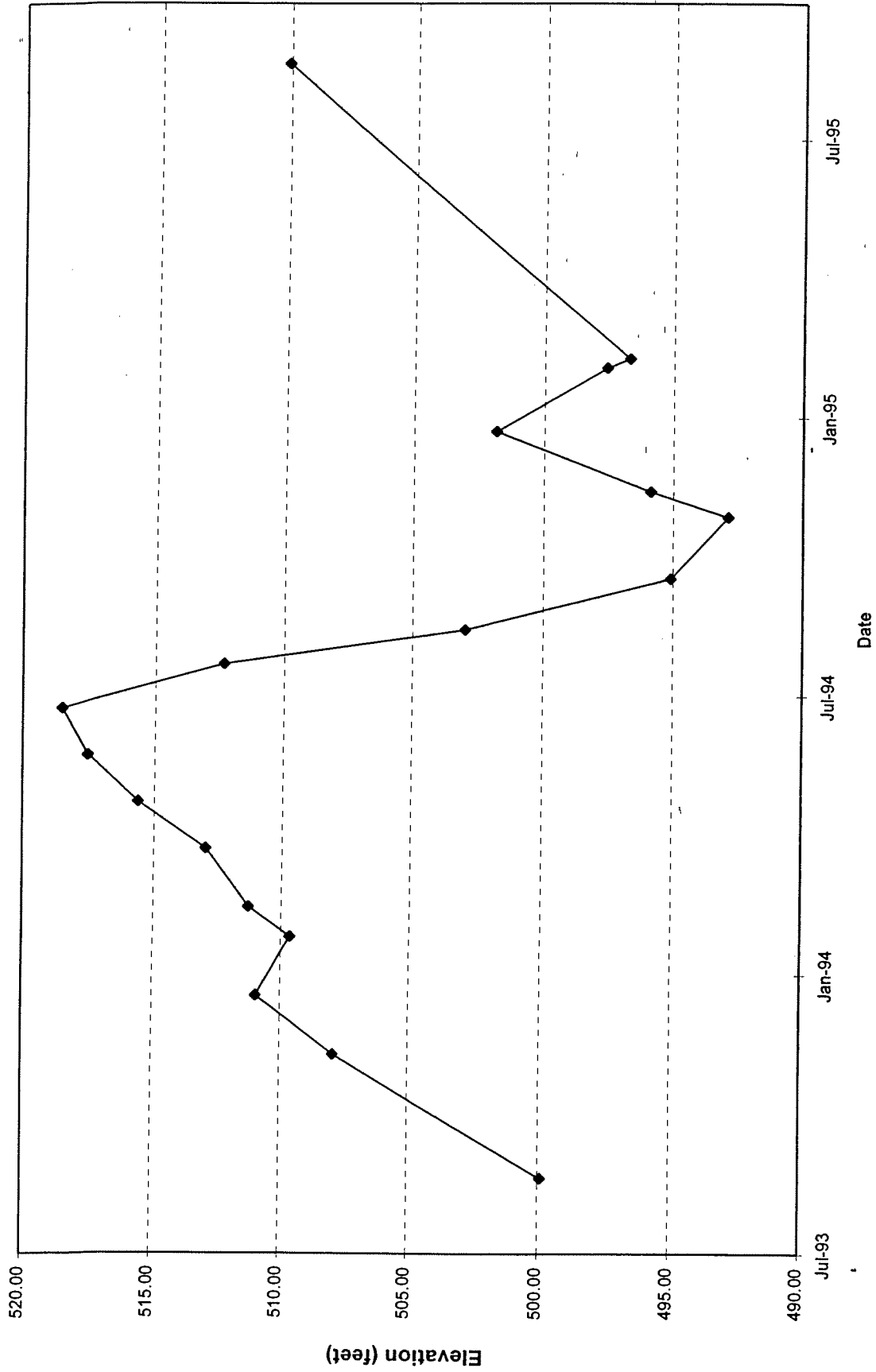


Figure 38
Historic Nitrate Concentrations in GW-8

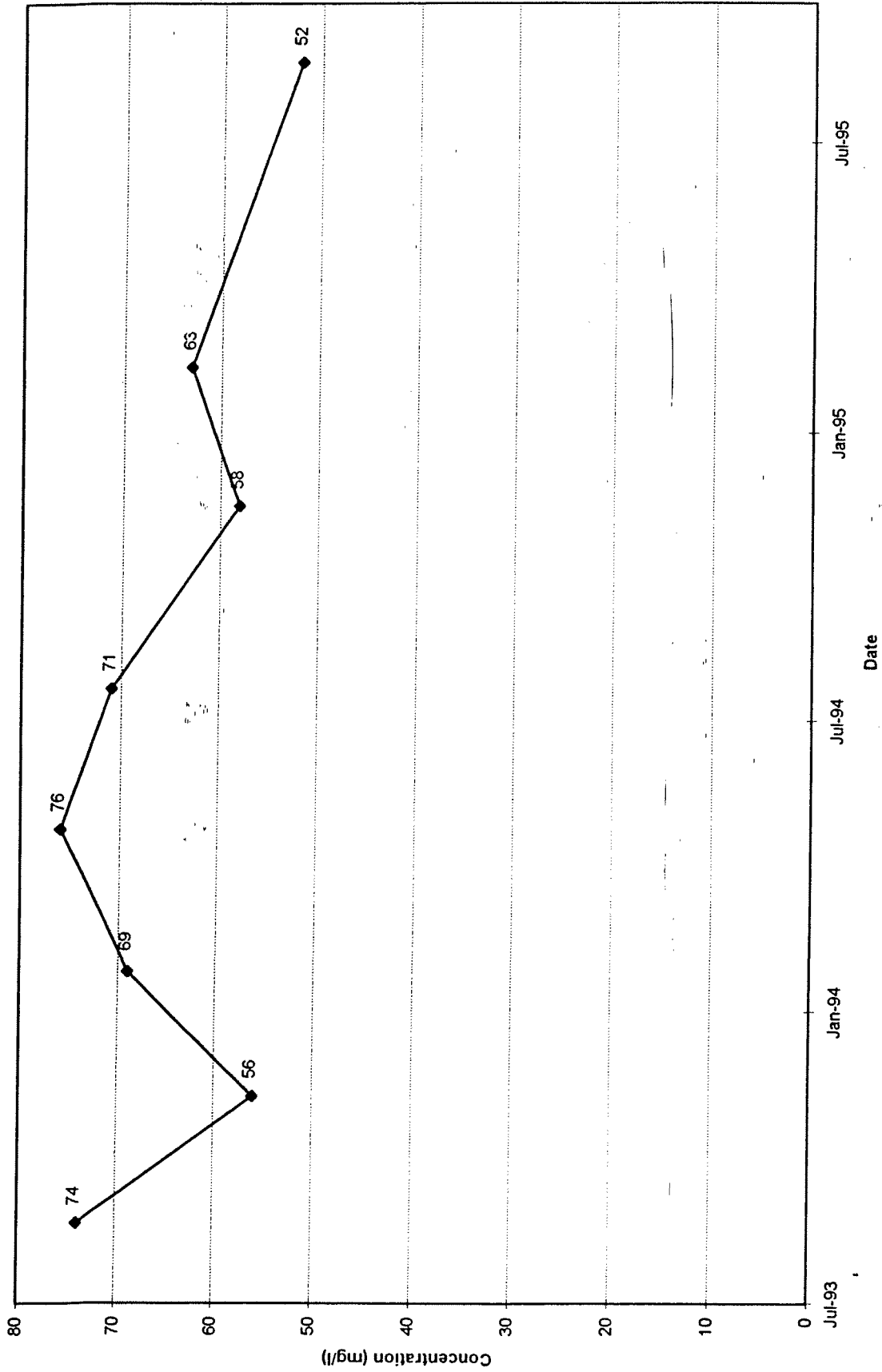


Figure 39
Historic TCE Concentrations in GW-8

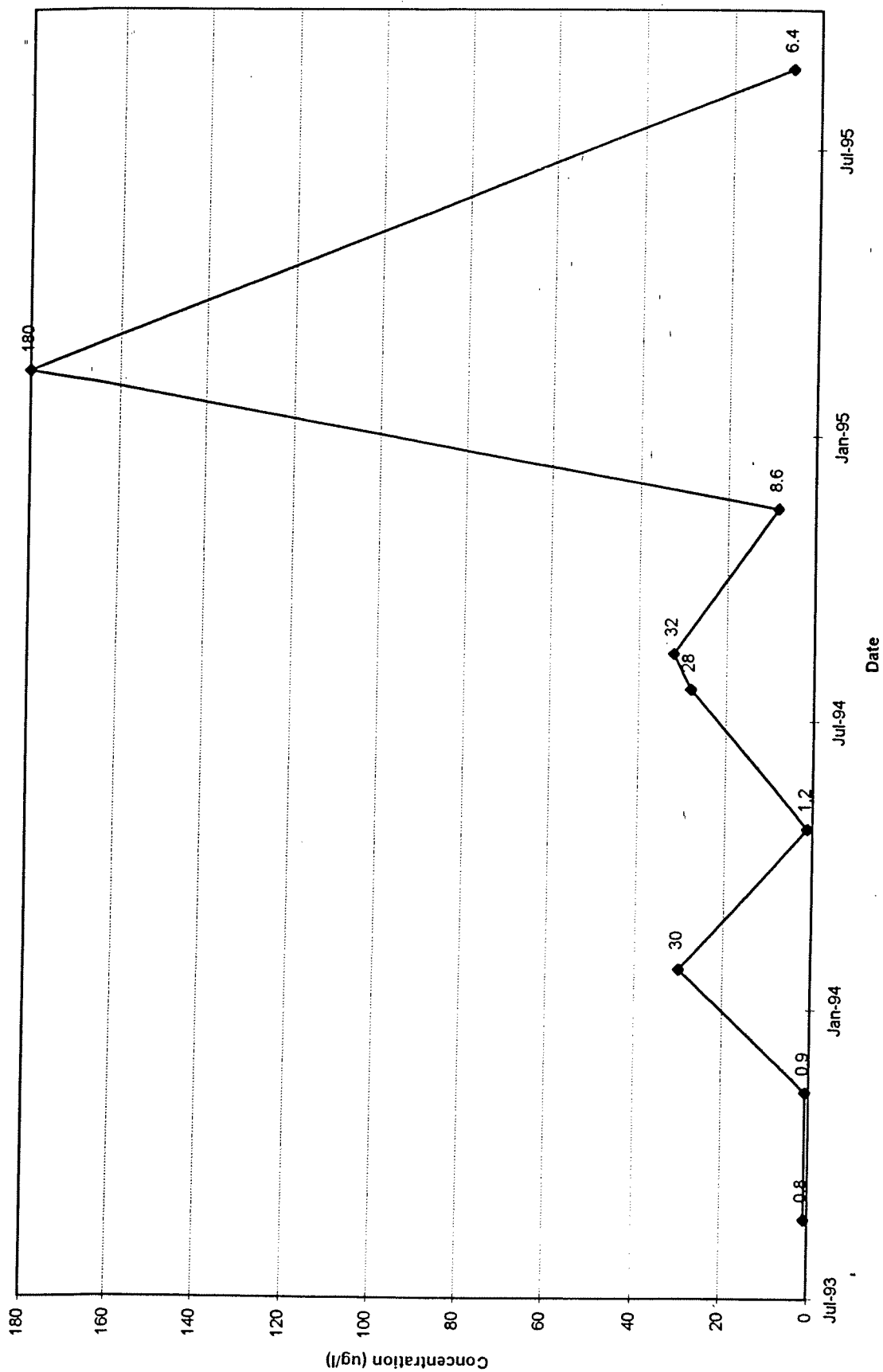


Figure 40
Historic PCE Concentrations in GW-8

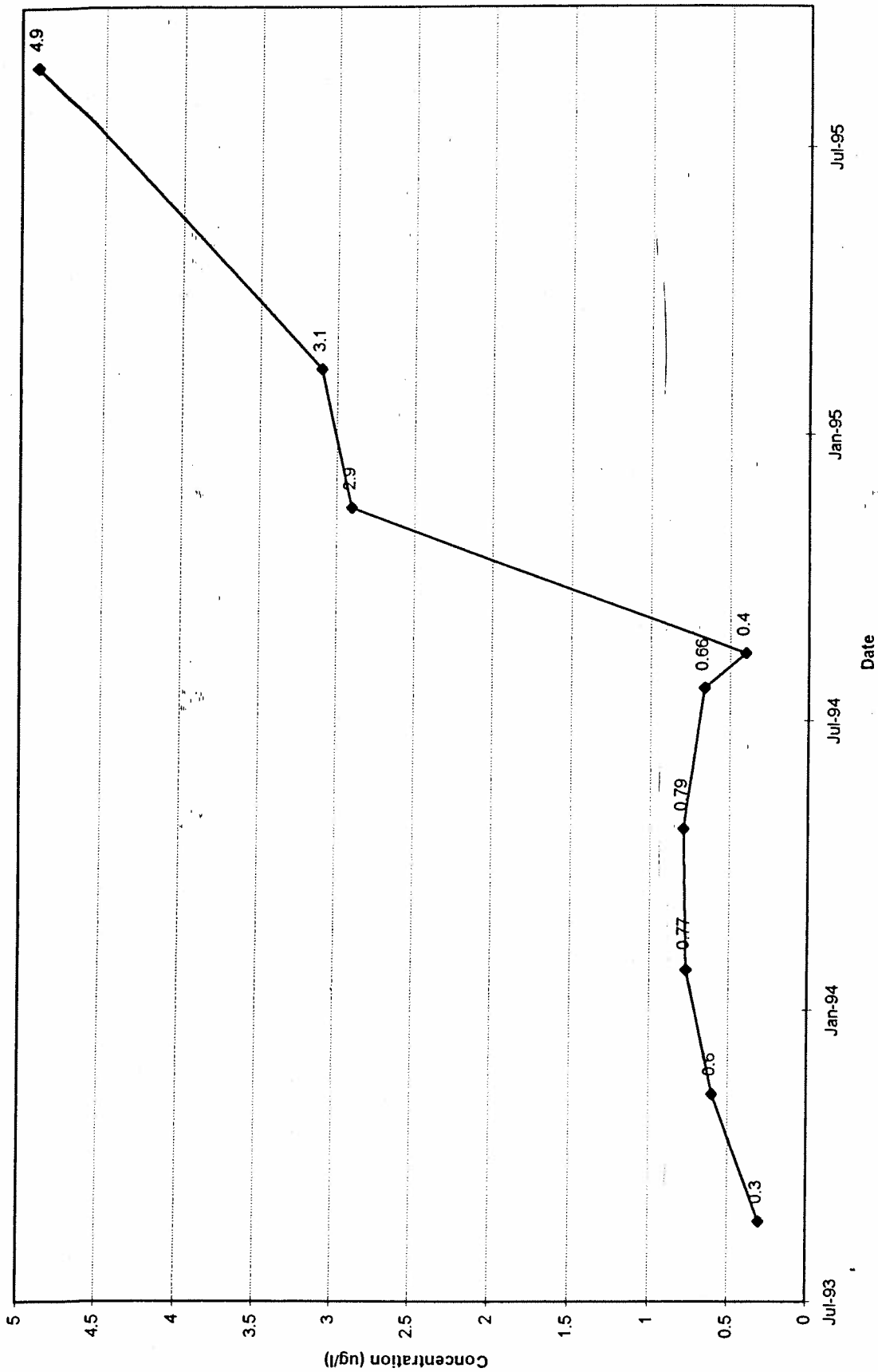


Figure 41
Historic CIS-1,2-DCE Concentrations in GW-8

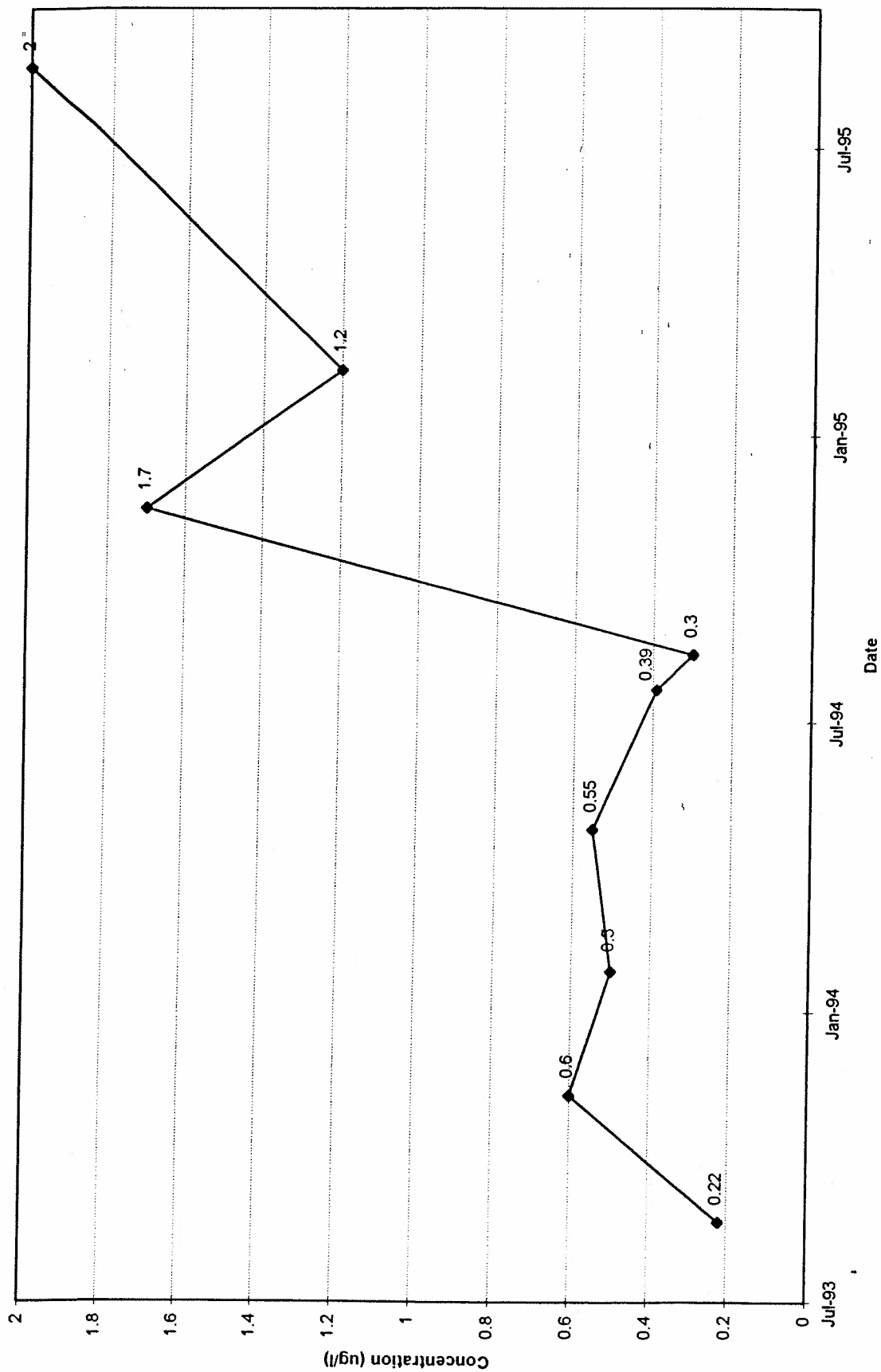


Figure 42
Historic Groundwater Elevations In GW-9

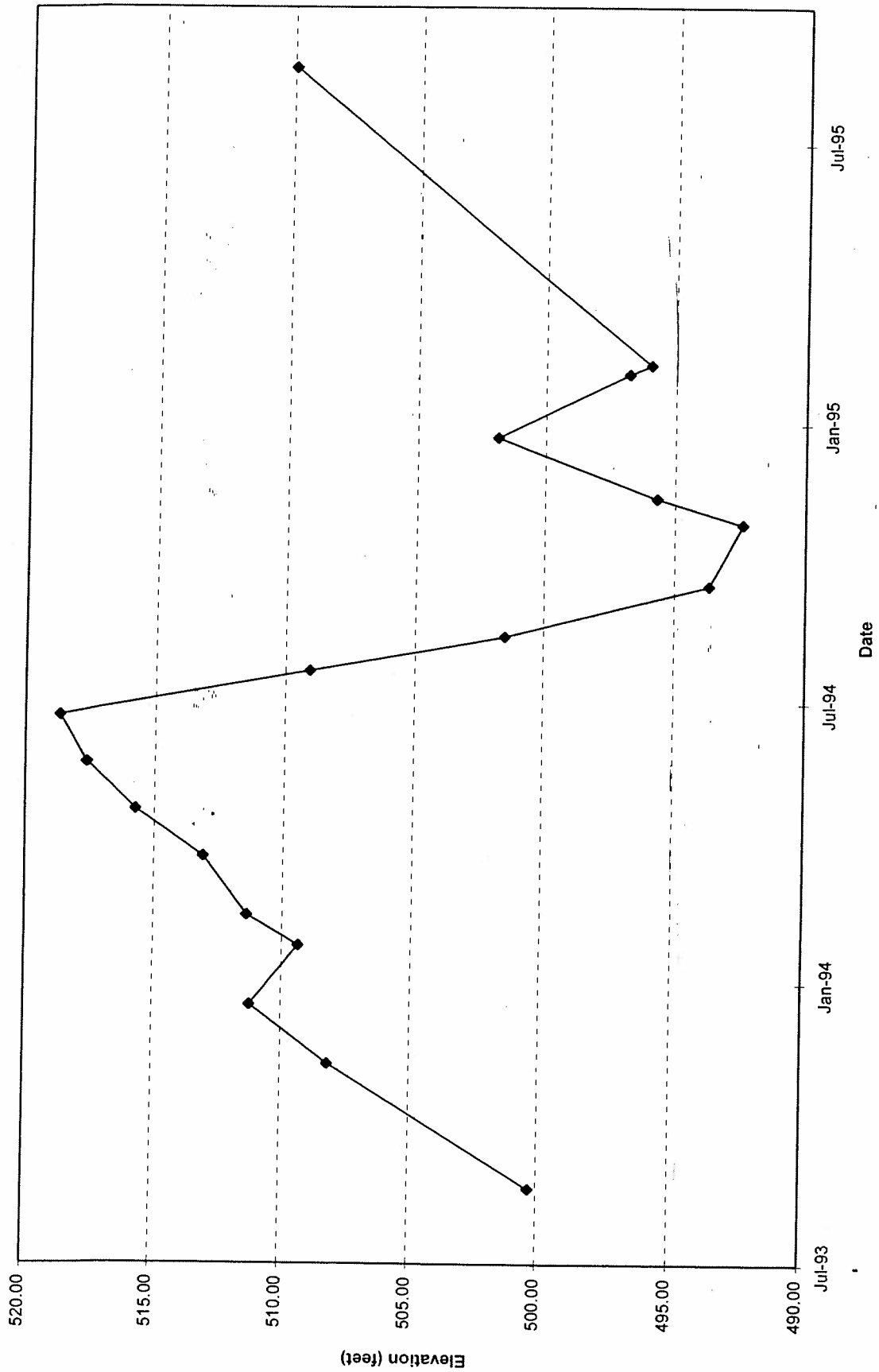


Figure 43
Historic Nitrate Concentrations in GW-9

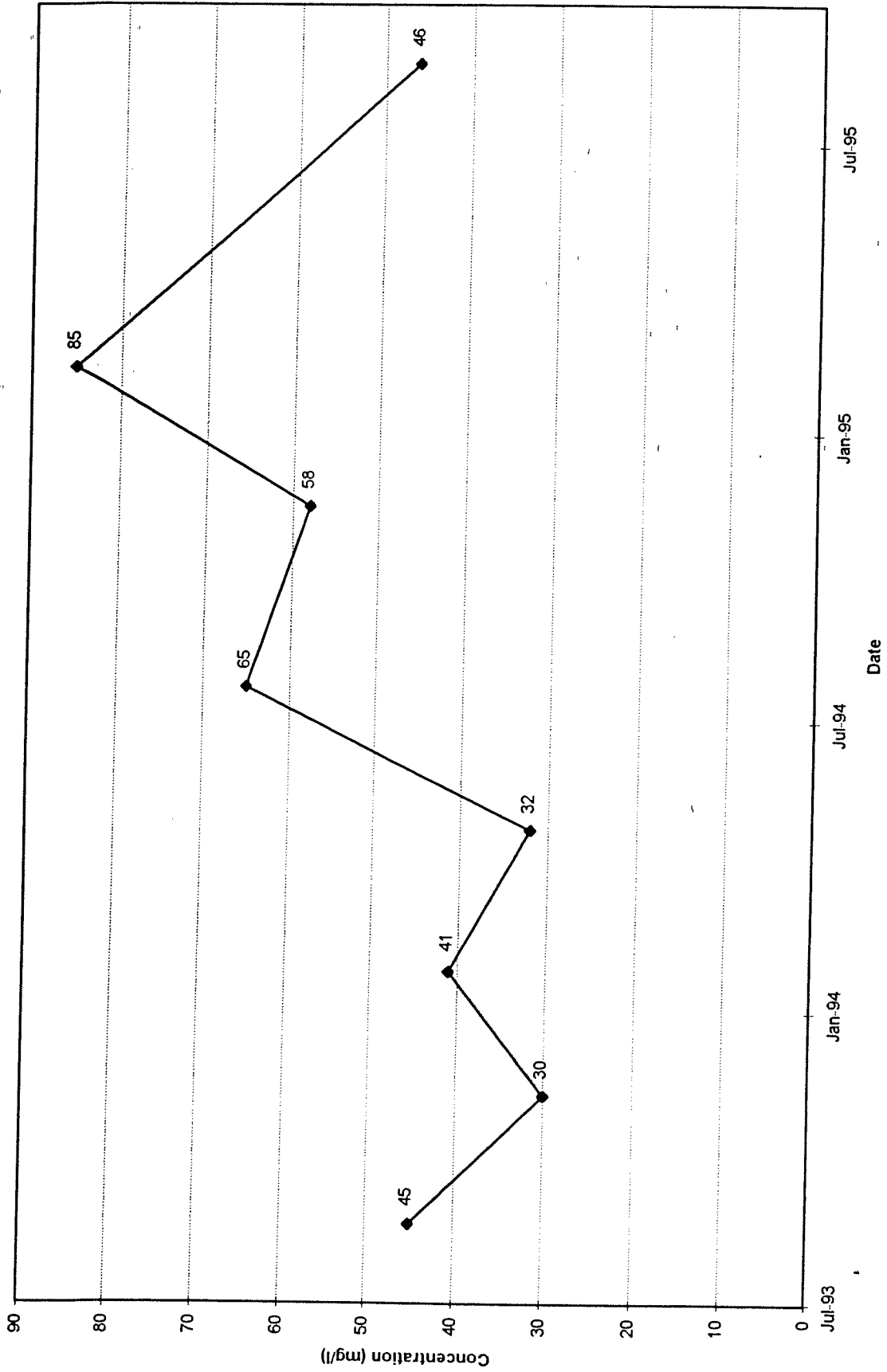


Figure 44
Historic 1,1,1-TCA Concentrations in GW-9

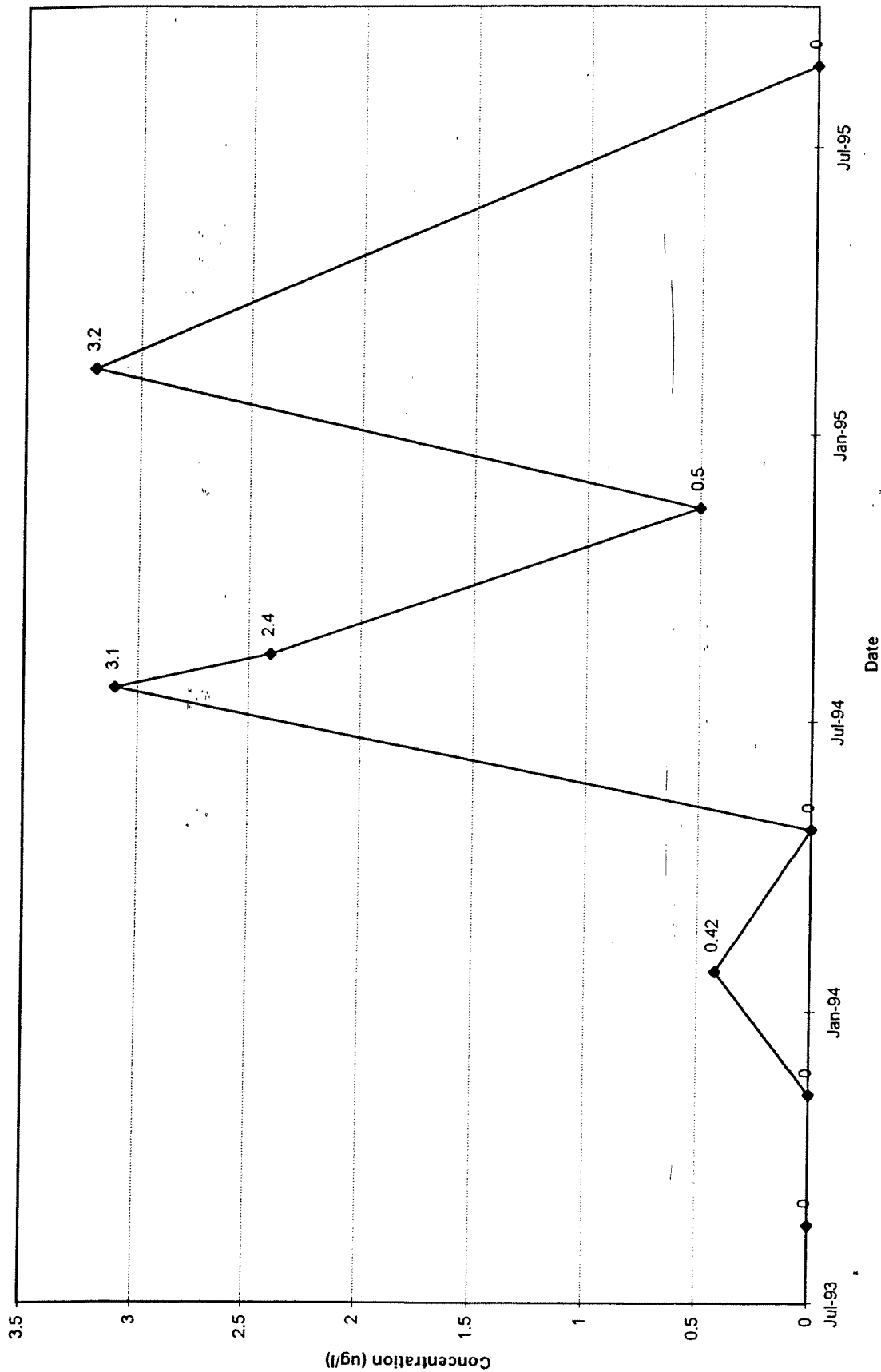


Figure 45
Historic 1,1-DCE Concentrations in GW-9

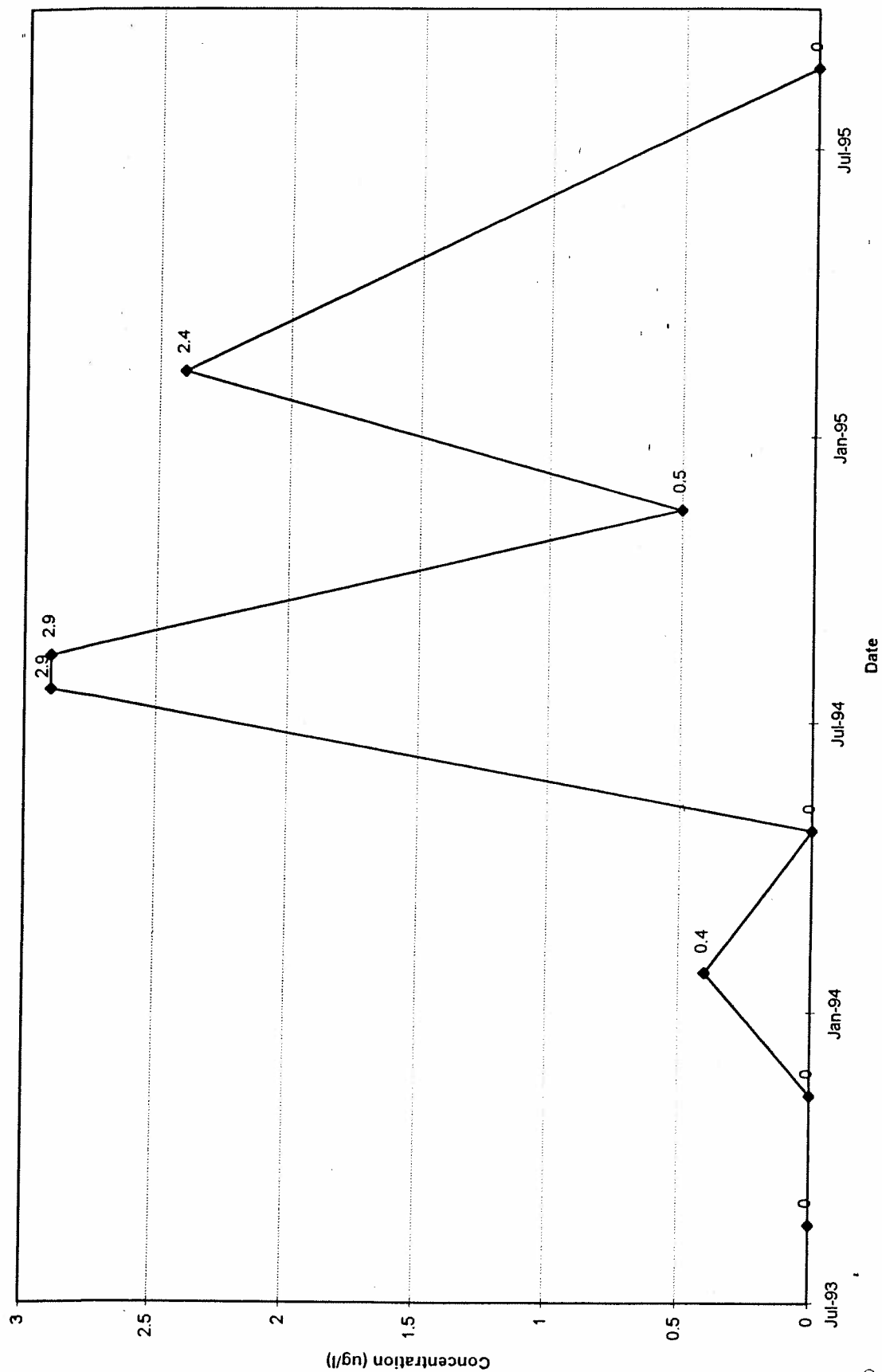


Figure 46
Historic TCE Concentrations in GW-9

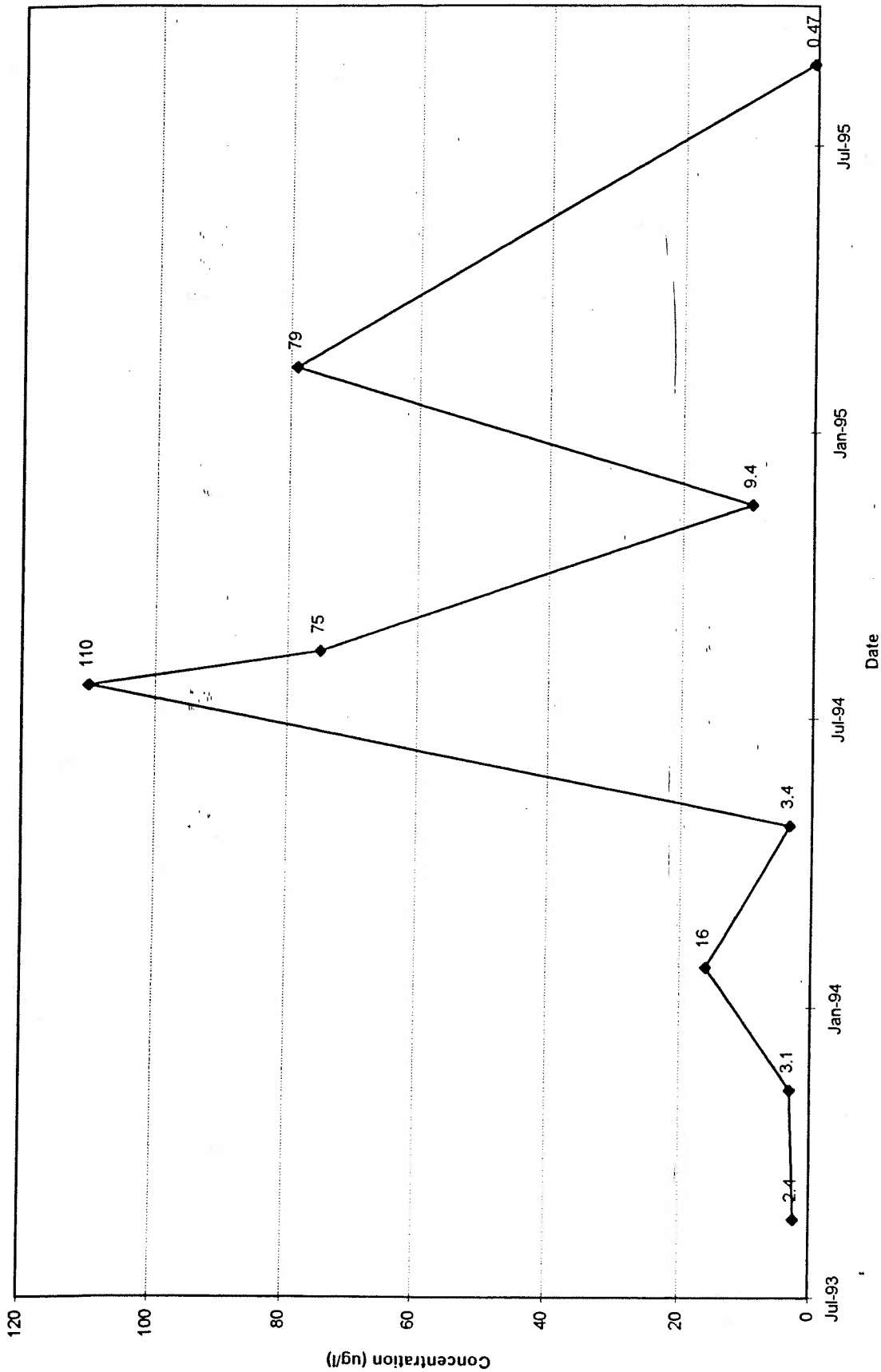


Figure 47
Historic PCE Concentrations in GW-9

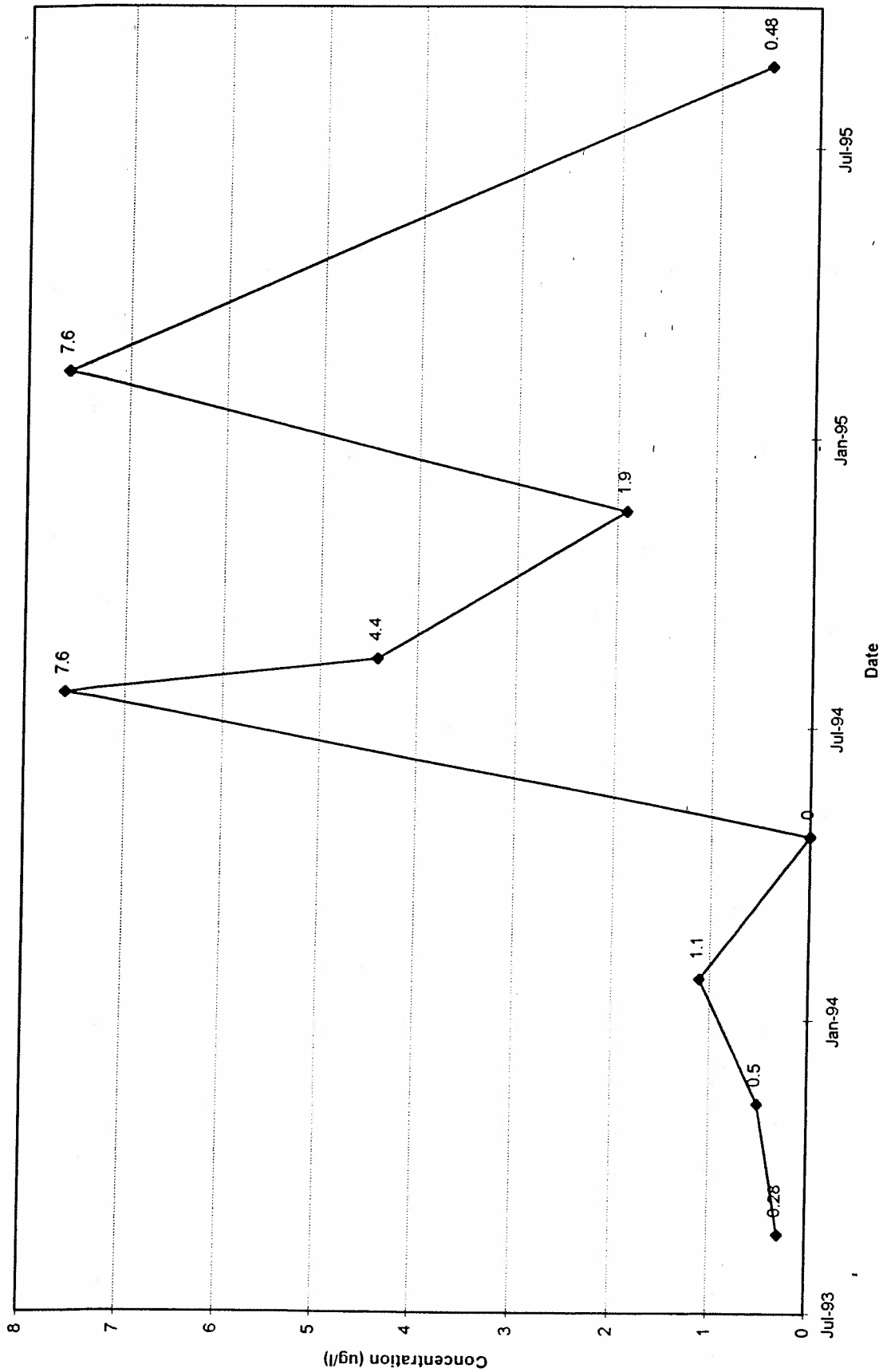


Figure 48
Historic Groundwater Elevations in GW-10

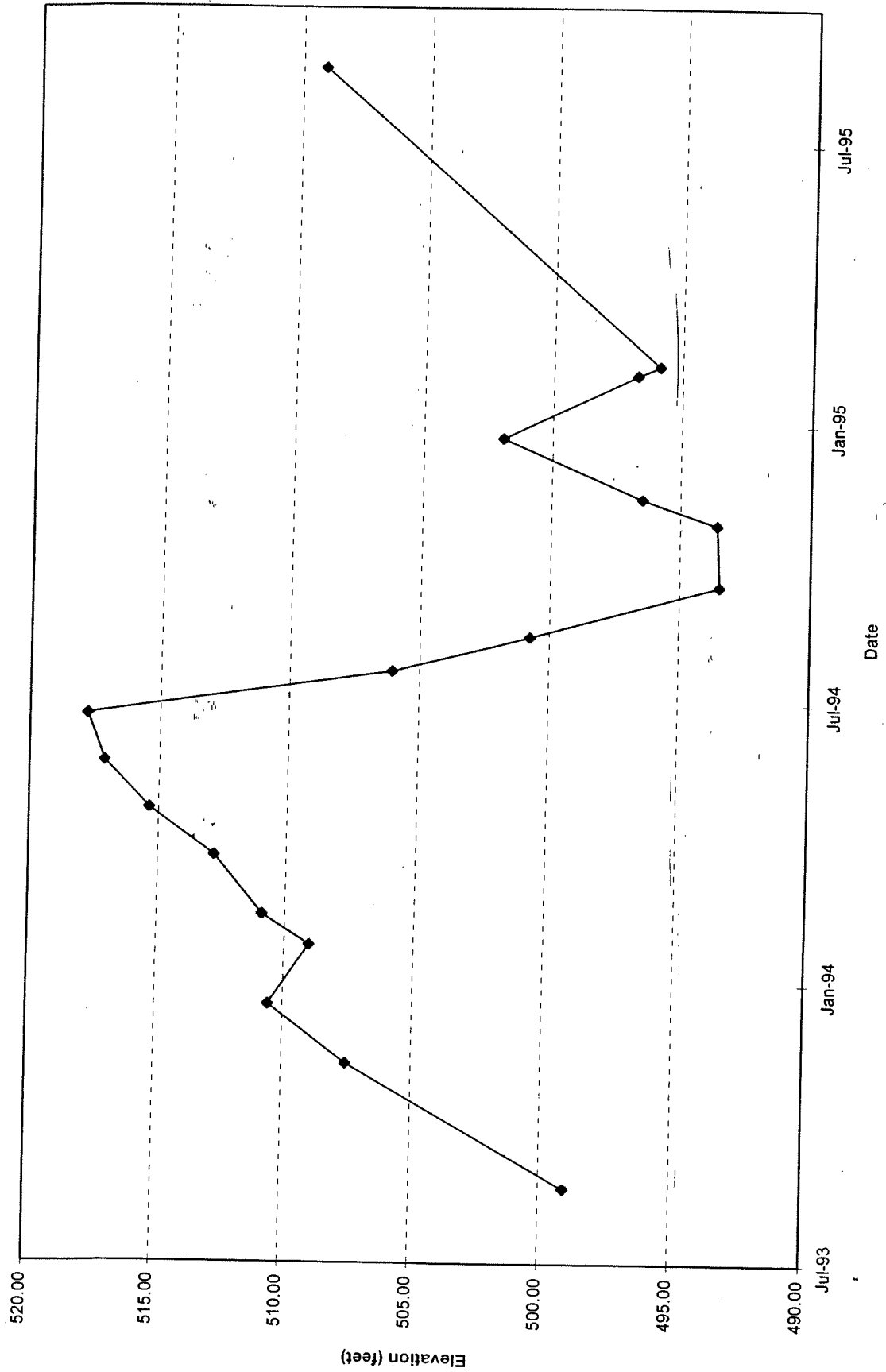
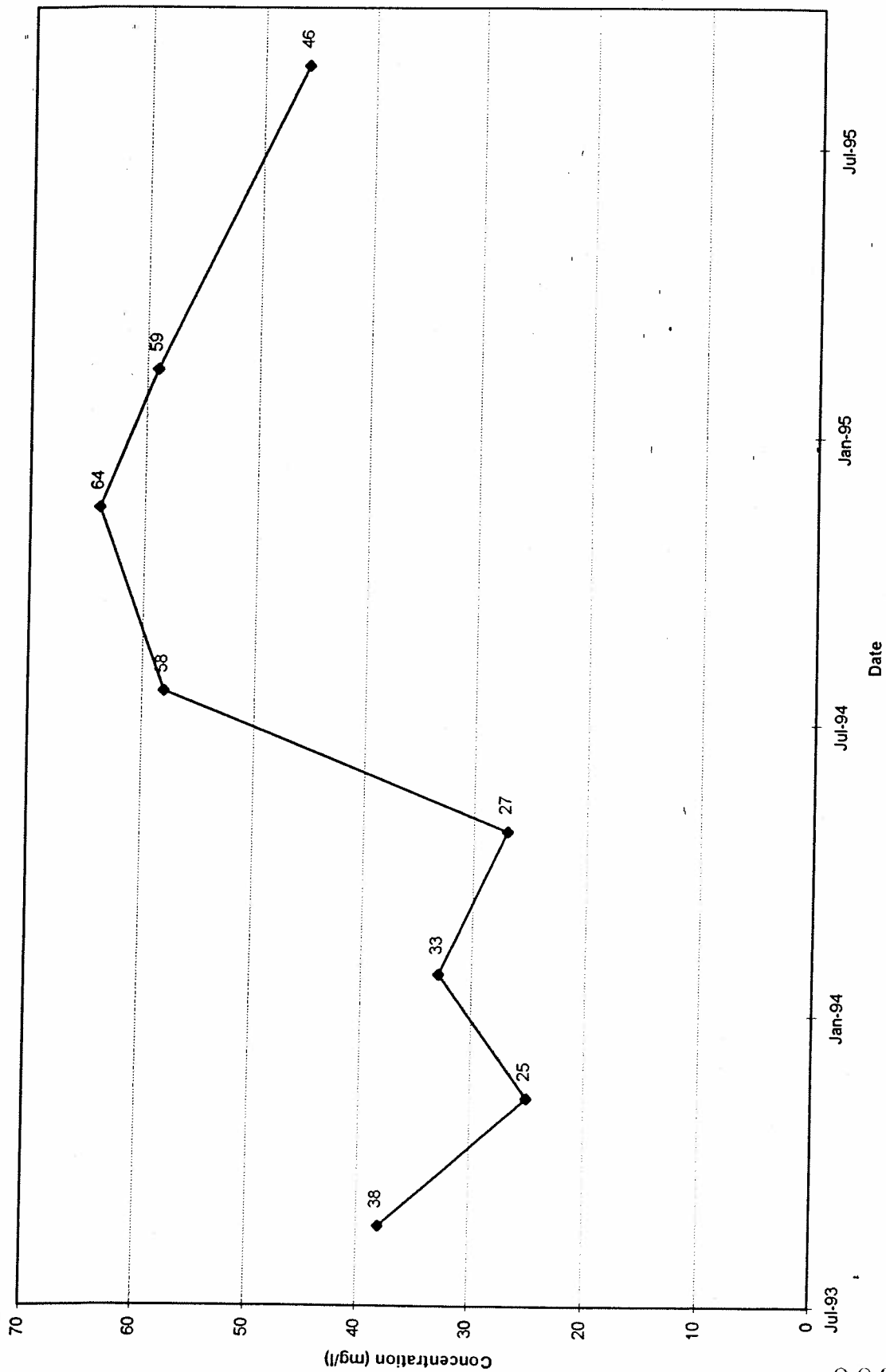


Figure 49
Historic Nitrate Concentrations in GW-10



003290

Figure 50
Historic TCE Concentrations in GW-10

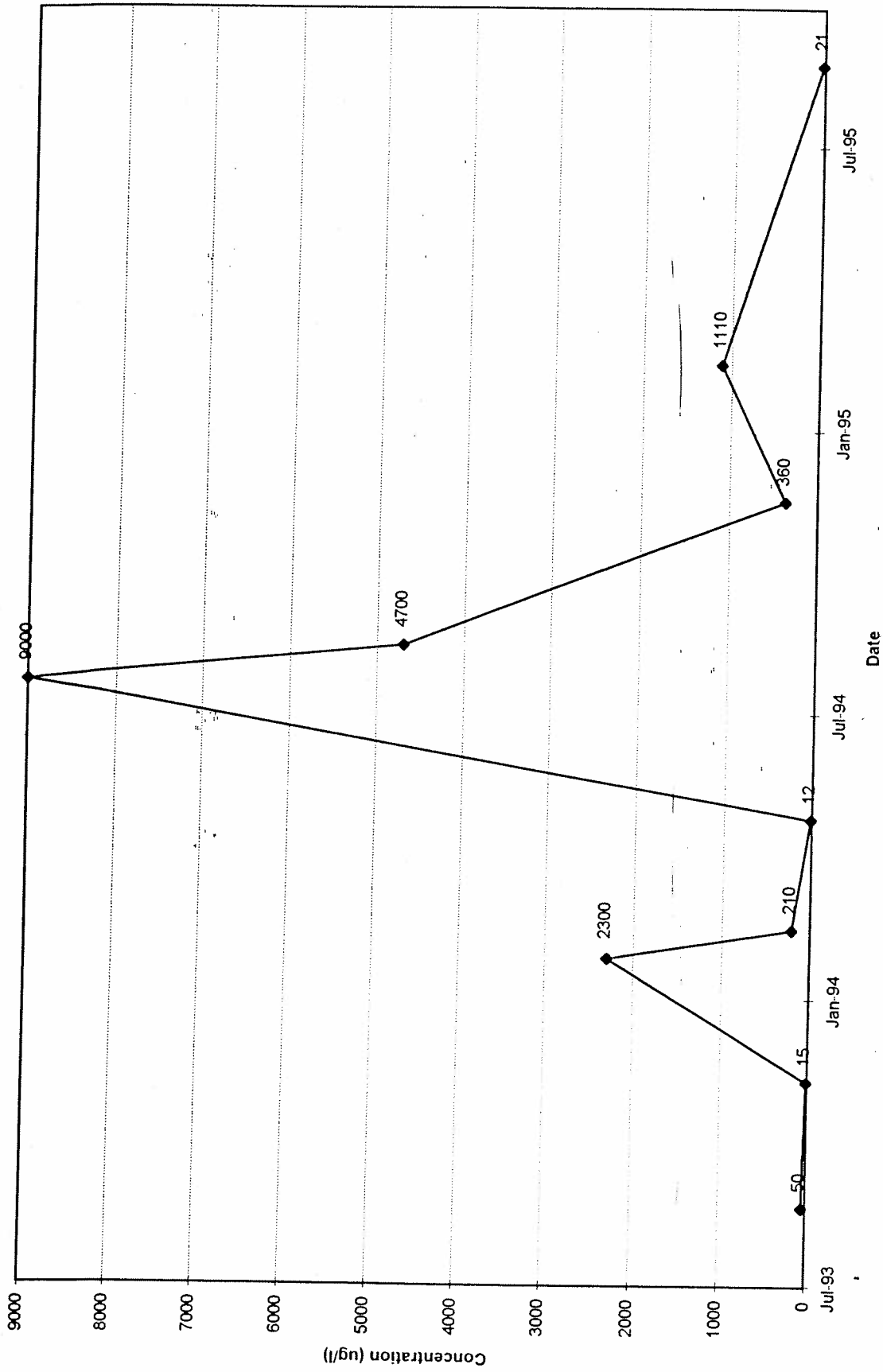
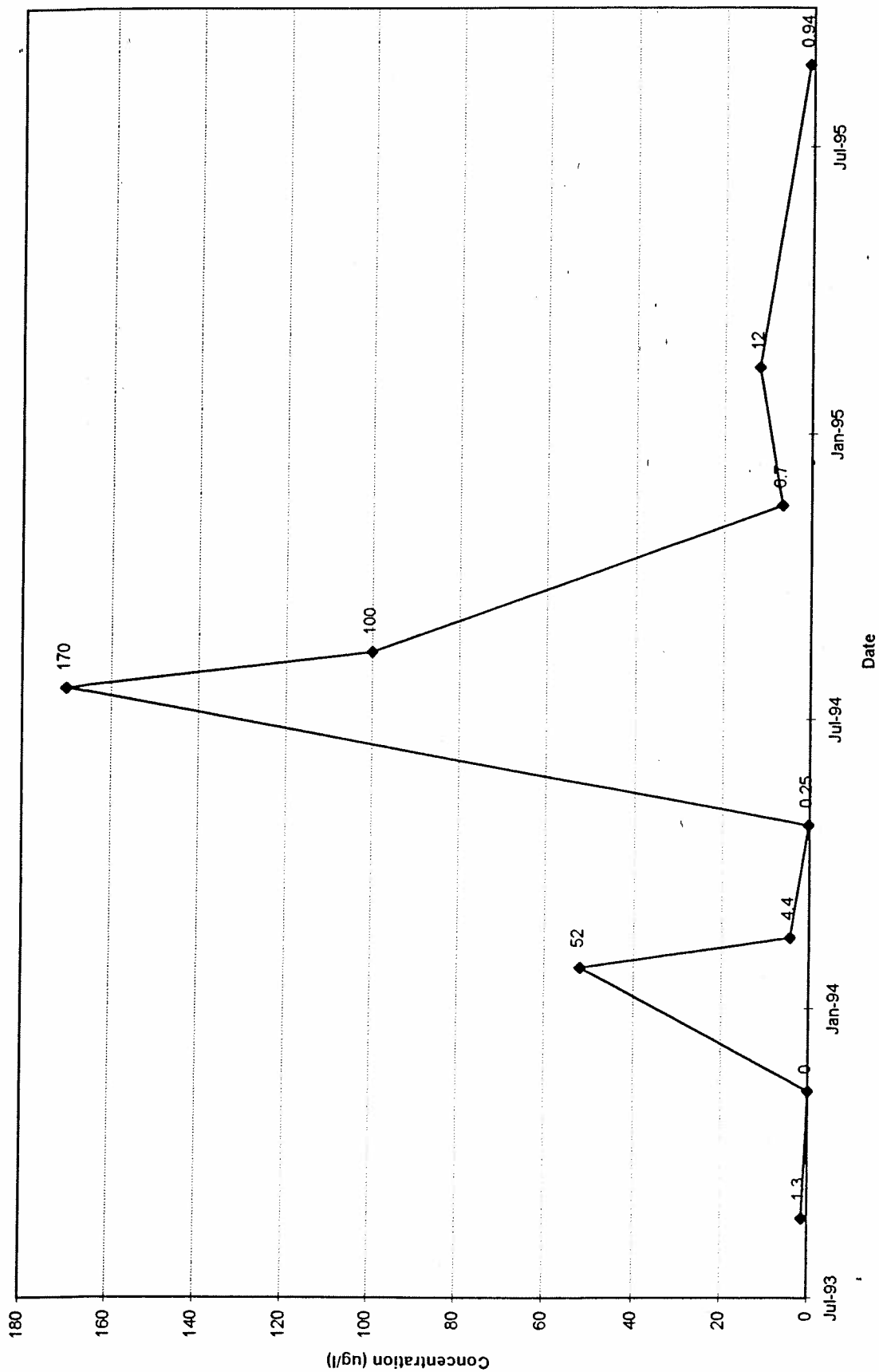


Figure 51
Historic CIS-1,2-DCE Concentrations in GW-10



APPENDIX A

STANDARD OPERATING PROCEDURES

GROUNDWATER LEVEL MEASUREMENT PROTOCOL

Prior to purging and sampling of groundwater monitoring wells, an Environmental Instruments Company (EI) water level meter was used to measure the depth to the water surface inside each groundwater monitoring well. Water level measurements were collected from the groundwater monitoring wells in the shortest time-frame possible, in order to obtain an accurate representation of the groundwater potentiometric surface. Initially, the meter was lowered down the groundwater monitoring well until the water surface within the groundwater monitoring well was encountered. The depth to the water surface was measured from a designated point on the well casing to the nearest 0.01 foot and recorded on a standard *SECOR* field data form. This procedure was repeated a second time to confirm the accuracy of the first measurement. The water level meter probe and associated measuring tape were washed in a solution of de-ionized water and a non-phosphate detergent and rinsed with de-ionized water prior to, and between groundwater monitoring wells to reduce the possibility of cross-contamination.

GROUNDWATER PURGING AND SAMPLING PROTOCOL WITH SUBMERSIBLE ELECTRIC PUMP AND BAILER

Groundwater monitoring wells were sampled in order from least contaminated to most contaminated across the Site. A minimum of 3 to 5 well casing volumes of water was purged prior to sampling. Measurements of pH, temperature, and electric conductivity were recorded on a standard *SECOR* field data form during well purging. Stabilization of the physical parameters indicated that water in the monitoring well was representative of water from the formation, and a groundwater sample was collected. All groundwater samples were collected using a 2-inch diameter Teflon™ bailer. Sample bottles provided by BCA were filled and placed on ice for transport to the laboratory.

All purging and sampling equipment was decontaminated prior to and between groundwater monitoring wells to reduce the possibility of cross-contamination. The Grundfos™ pumping system was decontaminated by placing the pump in a 35-gallon drum containing a solution of bottled water and a non-phosphate cleanser followed by a 35-gallon drum containing purified bottled water. Once the submersible pump had displaced the water from the drums, the pump was rinsed with de-ionized water. This procedure was performed to ensure the interior of PVC tubing attached to the pump was properly decontaminated. The exterior of the PVC tubing and the reel were also washed with a pressure washer, followed by a rinse with de-ionized water between groundwater monitoring wells. As a final precautionary measure, the bottom of the submersible pump was opened and the water within the pump was replaced with de-ionized water.

APPENDIX B

LABORATORY RESULTS

Western Avenue
Sunnyvale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-03-173

Received: 09 MAR 95

Mailed: APR - 5 1995

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
03-173-1	GW 2	09 MAR 95			
03-173-2	GW 3	09 MAR 95			
03-173-3	GW 8	09 MAR 95			
03-173-4	GW 9	09 MAR 95			
PARAMETER	03-173-1	03-173-2	03-173-3	03-173-4	
Ammonia (350.1), mg/L	<0.1	<0.1	<0.1	<0.1	
Chloride (300.0/9056), mg/L	25	39	36	38	
Nitrate (300.0/9056), mg/L	35	70	63	85	
Nitrite (300.0/9056), mg/L	<0.1	<0.1	<0.1	<0.1	
Sulfate (300.0/9056), mg/L	60	77	62	67	
Turbidity (180.1), NTU	23	2.3	2.3	21	
Dissolved Solids (160.1), mg/L	460	550	500	510	
Alkalinity (310.1)					
Carbonate Alk (as CaCO ₃), mg/L	<1	<1	<1	<1	
Bicarbonate Alk (as CaCO ₃), mg/L	250	290	250	230	
Hydroxide Alk (as CaCO ₃), mg/L	<1	<1	<1	<1	
Total Alkalinity (as CaCO ₃), mg/L	250	290	250	230	
Calcium (6010/200.7), mg/L	93	110	130	100	
Magnesium (6010/200.7), mg/L	20	24	29	23	
Potassium (6010/200.7), mg/L	4.0	5.1	5.8	4.6	
Sodium (6010/200.7), mg/L	23	27	35	29	
Digestion (3010), Date	03/16/95	03/16/95	03/16/95	03/16/95	

B C Analytical

Western Avenue
Cudahy, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-03-173

Received: 09 MAR 95

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES				DATE SAMPLED
03-173-1	GW 2				09 MAR 95
03-173-2	GW 3				09 MAR 95
03-173-3	GW 8				09 MAR 95
03-173-4	GW 9				09 MAR 95
PARAMETER	03-173-1	03-173-2	03-173-3	03-173-4	
PH (8015M)					
Date Analyzed	03/18/95	03/18/95	03/18/95	03/18/95	
Date Extracted	03/14/95	03/14/95	03/14/95	03/14/95	
Dilution Factor, Times	1	1	1	1	
TPH (total), mg/L	<1	<1	<1	<1	
Other TPH (8015M)	---	---	---	---	

B C Analytical

Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-03-173

Received: 09 MAR 95

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
03-173-1	GW 2			09 MAR 95	
03-173-2	GW 3			09 MAR 95	
03-173-3	GW 8			09 MAR 95	
03-173-4	GW 9			09 MAR 95	
PARAMETER	03-173-1	03-173-2	03-173-3	03-173-4	
E524.2/VOC					
Date Analyzed	03/16/95	03/16/95	03/16/95	03/16/95	
Dilution Factor, Times	25	50	10	5	
1,1,1,2-Tetrachloroethane, ug/L	<5	<10	<2	<1	
1,1,1-Trichloroethane, ug/L	11	30	<2	3.1	
1,1,2,2-Tetrachloroethane, ug/L	<5	<10	<2	<1	
1,1,2-Trichloroethane, ug/L	<5	<10	<2	<1	
1,1-Dichloroethane, ug/L	<5	12	<2	<1	
1,1-Dichloroethene, ug/L	10	22	<2	2.2	
1,1-Dichloropropene, ug/L	<5	<10	<2	<1	
1,2,3-Trichlorobenzene, ug/L	<5	<10	<2	<1	
1,2,3-Trichloropropane, ug/L	<20	<30	<5	<3	
1,2,4-Trichlorobenzene, ug/L	<5	<10	<2	<1	
1,2,4-Trimethylbenzene, ug/L	<5	<10	<2	<1	
1,2-Dibromo-3-chloropropane, ug/L	<20	<30	<5	<3	
1,2-Dibromoethane, ug/L	<5	<10	<2	<1	
1,2-Dichloroethane, ug/L	<5	<10	<2	<1	
1,2-Dichlorobenzene, ug/L	<5	<10	<2	<1	
1,2-Dichloropropane, ug/L	<5	<10	<2	<1	
1,3,5-Trimethylbenzene, ug/L	<5	<10	<2	<1	
1,3-Dichlorobenzene, ug/L	<5	<10	<2	<1	
1,3-Dichloropropane, ug/L	<5	<10	<2	<1	
1,4-Dichlorobenzene, ug/L	<5	<10	<2	<1	
2,2-Dichloropropane, ug/L	<5	<10	<2	<1	

B C Analytical

Western Avenue
Gardale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-03-173

Received: 09 MAR 95

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
03-173-1	GW 2	09 MAR 95			
03-173-2	GW 3	09 MAR 95			
03-173-3	GW 8	09 MAR 95			
03-173-4	GW 9	09 MAR 95			
PARAMETER	03-173-1	03-173-2	03-173-3	03-173-4	
2-Chlorotoluene, ug/L	<5	<10	<2	<1	
4-Chlorotoluene, ug/L	<5	<10	<2	<1	
Bromobenzene, ug/L	<5	<10	<2	<1	
Bromochloromethane, ug/L	<5	<10	<2	<1	
Bromodichloromethane, ug/L	<5	<10	<2	<1	
Bromomethane, ug/L	<20	<30	<5	<3	
Benzene, ug/L	<5	<10	<2	<1	
Bromoform, ug/L	<20	<30	<5	<3	
Chlorobenzene, ug/L	<5	<10	<2	<1	
Carbon Tetrachloride, ug/L	<5	<10	<2	1.4	
Chloroethane, ug/L	<5	<10	<2	<1	
Chloroform, ug/L	<5	10	<2	1.1	
Chloromethane, ug/L	<20	<30	<5	<3	
Dibromochloromethane, ug/L	<5	<10	<2	<1	
Dibromomethane, ug/L	<5	<10	<2	<1	
Dichlorodifluoromethane, ug/L	<20	<30	<5	<3	
Ethylbenzene, ug/L	<5	<10	<2	<1	
Freon 113, ug/L	<5	<10	<2	<1	
Hexachlorobutadiene, ug/L	<5	<10	<2	<1	
Isopropylbenzene, ug/L	<5	<10	<2	<1	
Methylene chloride, ug/L	<5	<10	<2	<1	
N-Butylbenzene, ug/L	<5	<10	<2	<1	
N-Propylbenzene, ug/L	<5	<10	<2	<1	
Naphthalene, ug/L	<30	<50	<10	<5	

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES				DATE SAMPLED
03-173-1	GW 2				09 MAR 95
03-173-2	GW 3				09 MAR 95
03-173-3	GW 8				09 MAR 95
03-173-4	GW 9				09 MAR 95
PARAMETER	03-173-1	03-173-2	03-173-3	03-173-4	
Styrene, ug/L	<5	<10	<2	<1	
Trichloroethene, ug/L	250	1300	190	71	
Trichlorofluoromethane, ug/L	<5	<10	<2	<1	
Toluene, ug/L	<5	<10	<2	<1	
Tetrachloroethene, ug/L	<5	<10	2.5	6.0	
Vinyl chloride, ug/L	<5	<10	<2	<1	
cis-1,2-Dichloroethene, ug/L	<5	13	<2	<1	
cis-1,3-Dichloropropene, ug/L	<5	<10	<2	<1	
m- and p-Xylene Isomers, ug/L	<5	<10	<2	<1	
o-Xylene, ug/L	<5	<10	<2	<1	
p-Isopropyl toluene, ug/L	<5	<10	<2	<1	
sec-Butylbenzene, ug/L	<5	<10	<2	<1	
trans-1,2-Dichloroethene, ug/L	<5	<10	<2	<1	
trans-1,3-Dichloropropene, ug/L	<5	<10	<2	<1	
tert-Butylbenzene, ug/L	<5	<10	<2	<1	
Other E524.2/VOC	---	---	---	---	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
03-173-5	EB	09 MAR 95
PARAMETER	03-173-5	
Ammonia (350.1), mg/L	<0.1	
Chloride (300.0/9056), mg/L	<0.05	
Nitrate (300.0/9056), mg/L	<0.1	
Nitrite (300.0/9056), mg/L	<0.1	
Sulfate (300.0/9056), mg/L	<0.1	
Turbidity (180.1), NTU	<0.1	
Dissolved Solids (160.1), mg/L	<10	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	<10	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	<10	
Calcium (6010/200.7), mg/L	<0.5	
Magnesium (6010/200.7), mg/L	<0.1	
Potassium (6010/200.7), mg/L	<0.5	
Sodium (6010/200.7), mg/L	<0.5	
Digestion (3010), Date	03/16/95	
TPH (8015M)		
Date Analyzed	03/31/95	
Date Extracted	03/14/95	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
03-173-5	EB	09 MAR 95
PARAMETER	03-173-5	
E524.2/VOC		
Date Analyzed	03/15/95	
Date Extracted		
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
03-173-5	EB	09 MAR 95
PARAMETER	03-173-5	
Bromobenzene, ug/L	<0.2	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	<0.2	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	<0.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
03-173-5	EB	09 MAR 95
PARAMETER	03-173-5	
Vinyl chloride, ug/L	<0.2	
cis-1,2-Dichloroethene, ug/L	<0.2	
is-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
03-185-3	Trip Blank	10 MAR 95
PARAMETER	03-185-3	
TPH (8015M)		
Date Analyzed	03/18/95	
Date Extracted	03/14/95	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
03-185-3	Trip Blank	10 MAR 95
PARAMETER	03-185-3	
E524.2/VOC		
Date Analyzed	03/15/95	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
03-185-3	Trip Blank	10 MAR 95
PARAMETER	03-185-3	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	<0.2	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	<0.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	<0.2	
Vinyl chloride, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
03-185-3	Trip Blank	10 MAR 95
PARAMETER	03-185-3	
cis-1,2-Dichloroethene, ug/L	<0.2	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-173-6	GW-2	09 MAR 95
03-173-7	GW-3	09 MAR 95
03-173-8	GW-8	09 MAR 95
03-173-9	GW-9	09 MAR 95

PARAMETER	03-173-6	03-173-7	03-173-8	03-173-9
24.2/VOC				
Date Analyzed	03/15/95	03/15/95	03/15/95	03/15/95
Dilution Factor, Times	1	5	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<1	<0.2	<0.2
1,1,1-Trichloroethane, ug/L	10	21	1.6	3.2
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<1	<0.2	<0.2
1,1,2-Trichloroethane, ug/L	<0.2	<1	<0.2	<0.2
1,1-Dichloroethane, ug/L	0.9	9.3	<0.2	<0.2
1,1-Dichloroethene, ug/L	8.5	15	2.0	2.6
1,1-Dichloropropene, ug/L	<0.2	<1	<0.2	<0.2
1,2,3-Trichlorobenzene, ug/L	<0.2	<1	<0.2	<0.2
1,2,3-Trichloropropane, ug/L	<0.5	<3	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.2	<1	<0.2	<0.2
1,2,4-Trimethylbenzene, ug/L	<0.2	<1	<0.2	<0.2
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<3	<0.5	<0.5
1,2-Dibromoethane, ug/L	<0.2	<1	<0.2	<0.2
1,2-Dichloroethane, ug/L	<0.2	<1	<0.2	<0.2
1,2-Dichlorobenzene, ug/L	<0.2	<1	<0.2	<0.2
1,2-Dichloropropane, ug/L	<0.2	<1	<0.2	<0.2
1,3,5-Trimethylbenzene, ug/L	<0.2	<1	<0.2	<0.2
1,3-Dichlorobenzene, ug/L	<0.2	<1	<0.2	<0.2
1,3-Dichloropropane, ug/L	<0.2	<1	<0.2	<0.2
1,4-Dichlorobenzene, ug/L	<0.2	<1	<0.2	<0.2
2,2-Dichloropropane, ug/L	<0.2	<1	<0.2	<0.2

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
03-173-6	GW-2	09 MAR 95			
03-173-7	GW-3	09 MAR 95			
03-173-8	GW-8	09 MAR 95			
03-173-9	GW-9	09 MAR 95			
PARAMETER	03-173-6	03-173-7	03-173-8	03-173-9	
2-Chlorotoluene, ug/L	<0.2	<1	<0.2	<0.2	
4-Chlorotoluene, ug/L	<0.2	<1	<0.2	<0.2	
Bromobenzene, ug/L	<0.2	<1	<0.2	<0.2	
Bromochloromethane, ug/L	<0.2	<1	<0.2	<0.2	
Bromodichloromethane, ug/L	0.3	<1	<0.2	<0.2	
Bromomethane, ug/L	<0.5	<3	<0.5	<0.5	
Benzene, ug/L	<0.2	<1	<0.2	<0.2	
Bromoform, ug/L	<0.5	<3	<0.5	<0.5	
Chlorobenzene, ug/L	<0.2	<1	<0.2	<0.2	
Carbon Tetrachloride, ug/L	3.7	2.8	2.0	1.6	
Chloroethane, ug/L	<0.2	<1	<0.2	<0.2	
Chloroform, ug/L	2.3	5.7	1.0	0.7	
Chloromethane, ug/L	<0.5	<3	<0.5	<0.5	
Dibromochloromethane, ug/L	<0.2	<1	<0.2	<0.2	
Dibromomethane, ug/L	<0.2	<1	<0.2	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	<3	<0.5	<0.5	
Ethylbenzene, ug/L	<0.2	<1	<0.2	<0.2	
Freon 113, ug/L	<0.2	<1	<0.2	<0.2	
Hexachlorobutadiene, ug/L	<0.2	<1	<0.2	<0.2	
Isopropylbenzene, ug/L	<0.2	<1	<0.2	<0.2	
Methylene chloride, ug/L	<0.2	<1	<0.2	<0.2	
N-Butylbenzene, ug/L	<0.2	<1	<0.2	<0.2	
N-Propylbenzene, ug/L	<0.2	<1	<0.2	<0.2	
Naphthalene, ug/L	<1	<5	<1	<1	

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-173-6	GW-2	09 MAR 95
03-173-7	GW-3	09 MAR 95
03-173-8	GW-8	09 MAR 95
03-173-9	GW-9	09 MAR 95

PARAMETER	03-173-6	03-173-7	03-173-8	03-173-9
2-Chlorotoluene, ug/L	<0.2	<1	<0.2	<0.2
4-Chlorotoluene, ug/L	<0.2	<1	<0.2	<0.2
Bromobenzene, ug/L	<0.2	<1	<0.2	<0.2
Bromochloromethane, ug/L	<0.2	<1	<0.2	<0.2
Bromodichloromethane, ug/L	0.3	<1	<0.2	<0.2
Bromomethane, ug/L	<0.5	<3	<0.5	<0.5
Benzene, ug/L	<0.2	<1	<0.2	<0.2
Bromoform, ug/L	<0.5	<3	<0.5	<0.5
Chlorobenzene, ug/L	<0.2	<1	<0.2	<0.2
Carbon Tetrachloride, ug/L	3.7	2.8	2.0	1.6
Chloroethane, ug/L	<0.2	<1	<0.2	<0.2
Chloroform, ug/L	2.3	5.7	1.0	0.7
Chloromethane, ug/L	<0.5	<3	<0.5	<0.5
Dibromochloromethane, ug/L	<0.2	<1	<0.2	<0.2
Dibromomethane, ug/L	<0.2	<1	<0.2	<0.2
Dichlorodifluoromethane, ug/L	<0.5	<3	<0.5	<0.5
Ethylbenzene, ug/L	<0.2	<1	<0.2	<0.2
Freon 113, ug/L	<0.2	<1	<0.2	<0.2
Hexachlorobutadiene, ug/L	<0.2	<1	<0.2	<0.2
Isopropylbenzene, ug/L	<0.2	<1	<0.2	<0.2
Methylene chloride, ug/L	<0.2	<1	<0.2	<0.2
N-Butylbenzene, ug/L	<0.2	<1	<0.2	<0.2
N-Propylbenzene, ug/L	<0.2	<1	<0.2	<0.2
Naphthalene, ug/L	<1	<5	<1	<1

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LOG NO: G95-03-173

Received: 09 MAR 95

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3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

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Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 12

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
03-173-6	GW-2	09 MAR 95			
03-173-7	GW-3	09 MAR 95			
03-173-8	GW-8	09 MAR 95			
03-173-9	GW-9	09 MAR 95			
PARAMETER	03-173-6	03-173-7	03-173-8	03-173-9	
Styrene, ug/L	<0.2	<1	<0.2	<0.2	
Trichloroethene, ug/L	180	810	170	87	
Trichlorofluoromethane, ug/L	<0.2	<1	<0.2	<0.2	
Toluene, ug/L	<0.2	<1	<0.2	<0.2	
Tetrachloroethene, ug/L	2.7	6.6	3.6	9.2	
Vinyl chloride, ug/L	<0.2	<1	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	1.1	9.8	1.2	<0.2	
cis-1,3-Dichloropropene, ug/L	<0.2	<1	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	<1	<0.2	<0.2	
o-Xylene, ug/L	<0.2	<1	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	<1	<0.2	<0.2	
sec-Butylbenzene, ug/L	<0.2	<1	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	<1	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<1	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<1	<0.2	<0.2	
Other E524.2/VOC	---	---	---	---	

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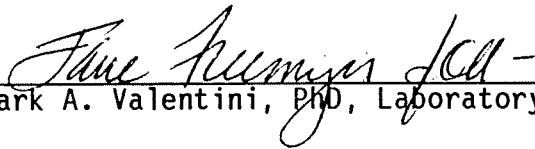
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REPORT OF ANALYTICAL RESULTS

Page 13

Samples GW-2, GW-3, GW-8, and GW-9 were reported at high and low dilutions. The level of trichloroethene found in each initial test required dilution. Both high and low dilutions are reported. -- H. Cochran 4/3/95



Mark A. Valentini, PhD, Laboratory Director

ANALYTICAL REPORT

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED	
03-185-1	GW-7	10 MAR 95	
03-185-2	GW-10	10 MAR 95	
PARAMETER	03-185-1	03-185-2	
Ammonia (350.1), mg/L	0.11	<0.1	
Chloride (300.0/9056), mg/L	41	31	
Nitrate (300.0/9056), mg/L	68	59	
Nitrite (300.0/9056), mg/L	<1	<1	
Sulfate (300.0/9056), mg/L	77	56	
Turbidity (180.1), NTU	0.80	5.3	
Dissolved Solids (160.1), mg/L	650	510	
Alkalinity (310.1)			
Carbonate Alk (as CaCO ₃), mg/L	<1	<1	
Bicarbonate Alk (as CaCO ₃), mg/L	360	270	
Hydroxide Alk (as CaCO ₃), mg/L	<1	<1	
Total Alkalinity (as CaCO ₃), mg/L	360	270	
Calcium (6010/200.7), mg/L	140	120	
Magnesium (6010/200.7), mg/L	30	24	
Potassium (6010/200.7), mg/L	4.5	4.7	
Sodium (6010/200.7), mg/L	27	28	
Digestion (3010), Date	03/17/95	03/17/95	
TPH (8015M)			
Date Analyzed	03/18/95	03/18/95	
Date Extracted	03/14/95	03/14/95	
Dilution Factor, Times	1	1	
TPH (total), mg/L	<1	<1	
Other TPH (8015M)	---	---	

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Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED	
03-185-1	GW-7	10 MAR 95	
03-185-2	GW-10	10 MAR 95	
PARAMETER	03-185-1	03-185-2	
F524.2/VOC			
Date Analyzed	03/16/95	03/15/95	
Dilution Factor, Times	200	50	
1,1,1,2-Tetrachloroethane, ug/L	<40	<10	
1,1,1-Trichloroethane, ug/L	51	<10	
1,1,2,2-Tetrachloroethane, ug/L	<40	<10	
1,1,2-Trichloroethane, ug/L	<40	<10	
1,1-Dichloroethane, ug/L	<40	<10	
1,1-Dichloroethene, ug/L	<40	<10	
1,1-Dichloropropene, ug/L	<40	<10	
1,2,3-Trichlorobenzene, ug/L	<40	<10	
1,2,3-Trichloropropane, ug/L	<100	<30	
1,2,4-Trichlorobenzene, ug/L	<40	<10	
1,2,4-Trimethylbenzene, ug/L	<40	<10	
1,2-Dibromo-3-chloropropane, ug/L	<100	<30	
1,2-Dibromoethane, ug/L	<40	<10	
1,2-Dichloroethane, ug/L	<40	<10	
1,2-Dichlorobenzene, ug/L	<40	<10	
1,2-Dichloropropane, ug/L	<40	<10	
1,3,5-Trimethylbenzene, ug/L	<40	<10	
1,3-Dichlorobenzene, ug/L	<40	<10	
1,3-Dichloropropane, ug/L	<40	<10	
1,4-Dichlorobenzene, ug/L	<40	<10	
2,2-Dichloropropane, ug/L	<40	<10	
2-Chlorotoluene, ug/L	<40	<10	
4-Chlorotoluene, ug/L	<40	<10	

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-185-1	GW-7	10 MAR 95
03-185-2	GW-10	10 MAR 95

PARAMETER	03-185-1	03-185-2
Bromobenzene, ug/L	<40	<10
Bromochloromethane, ug/L	<40	<10
Bromodichloromethane, ug/L	<40	<10
Bromomethane, ug/L	<100	<30
Benzene, ug/L	<40	<10
Bromoform, ug/L	<100	<30
Chlorobenzene, ug/L	<40	<10
Carbon Tetrachloride, ug/L	<40	<10
Chloroethane, ug/L	<40	<10
Chloroform, ug/L	64	<10
Chloromethane, ug/L	<100	<30
Dibromochloromethane, ug/L	<40	<10
Dibromomethane, ug/L	<40	<10
Dichlorodifluoromethane, ug/L	<100	<30
Ethylbenzene, ug/L	<40	<10
Freon 113, ug/L	<40	<10
Hexachlorobutadiene, ug/L	<40	<10
Isopropylbenzene, ug/L	<40	<10
Methylene chloride, ug/L	<40	<10
N-Butylbenzene, ug/L	<40	<10
N-Propylbenzene, ug/L	<40	<10
Naphthalene, ug/L	<200	<50
Styrene, ug/L	<40	<10
Trichloroethene, ug/L	4700	1100
Trichlorofluoromethane, ug/L	<40	<10
Toluene, ug/L	<40	<10

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED	
03-185-1	GW-7	10 MAR 95	
03-185-2	GW-10	10 MAR 95	
PARAMETER	03-185-1	03-185-2	
Tetrachloroethene, ug/L	<40	<10	
Vinyl chloride, ug/L	<40	<10	
cis-1,2-Dichloroethene, ug/L	70	12	
cis-1,3-Dichloropropene, ug/L	<40	<10	
m- and p-Xylene Isomers, ug/L	<40	<10	
o-Xylene, ug/L	<40	<10	
p-Isopropyl toluene, ug/L	<40	<10	
sec-Butylbenzene, ug/L	<40	<10	
trans-1,2-Dichloroethene, ug/L	<40	<10	
trans-1,3-Dichloropropene, ug/L	<40	<10	
tert-Butylbenzene, ug/L	<40	<10	
Other E524.2/VOC	---	---	

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REPORT OF ANALYTICAL RESULTS

Page 9

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-185-4	GW-7	10 MAR 95
PARAMETER	03-185-4	
E524.2/VOC		
Date Analyzed	03/15/95	
Dilution Factor, Times	100	
1,1,1,2-Tetrachloroethane, ug/L	<20	
1,1,1-Trichloroethane, ug/L	43	
1,1,2,2-Tetrachloroethane, ug/L	<20	
1,1,2-Trichloroethane, ug/L	<20	
1,1-Dichloroethane, ug/L	37	
1,1-Dichloroethene, ug/L	22	
1,1-Dichloropropene, ug/L	<20	
1,2,3-Trichlorobenzene, ug/L	<20	
1,2,3-Trichloropropane, ug/L	<50	
1,2,4-Trichlorobenzene, ug/L	<20	
1,2,4-Trimethylbenzene, ug/L	<20	
1,2-Dibromo-3-chloropropane, ug/L	<50	
1,2-Dibromoethane, ug/L	<20	
1,2-Dichloroethane, ug/L	<20	
1,2-Dichlorobenzene, ug/L	<20	
1,2-Dichloropropane, ug/L	<20	
1,3,5-Trimethylbenzene, ug/L	<20	
1,3-Dichlorobenzene, ug/L	<20	
1,3-Dichloropropane, ug/L	<20	
1,4-Dichlorobenzene, ug/L	<20	
2,2-Dichloropropane, ug/L	<20	
2-Chlorotoluene, ug/L	<20	
4-Chlorotoluene, ug/L	<20	
Bromobenzene, ug/L	<20	

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REPORT OF ANALYTICAL RESULTS

Page 10

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-185-4	GW-7	10 MAR 95
PARAMETER	03-185-4	
Bromochloromethane, ug/L	<20	
Bromodichloromethane, ug/L	<20	
Bromomethane, ug/L	<50	
Benzene, ug/L	<20	
Bromoform, ug/L	<50	
Chlorobenzene, ug/L	<20	
Carbon Tetrachloride, ug/L	<20	
Chloroethane, ug/L	<20	
Chloroform, ug/L	39	
Chloromethane, ug/L	<50	
Dibromochloromethane, ug/L	<20	
Dibromomethane, ug/L	<20	
Dichlorodifluoromethane, ug/L	<50	
Ethylbenzene, ug/L	<20	
Freon 113, ug/L	<20	
Hexachlorobutadiene, ug/L	<20	
Isopropylbenzene, ug/L	<20	
Methylene chloride, ug/L	<20	
N-Butylbenzene, ug/L	<20	
N-Propylbenzene, ug/L	<20	
Naphthalene, ug/L	<100	
Styrene, ug/L	<20	
Trichloroethene, ug/L	5500	
Trichlorofluoromethane, ug/L	<20	
Toluene, ug/L	<20	
Tetrachloroethene, ug/L	<20	
Vinyl chloride, ug/L	<20	

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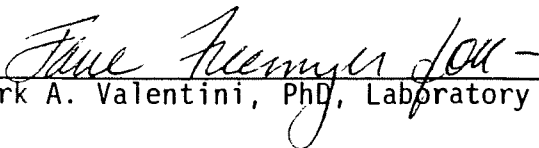
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REPORT OF ANALYTICAL RESULTS

Page 11

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-185-4	GW-7	10 MAR 95
PARAMETER	03-185-4	
cis-1,2-Dichloroethene, ug/L	67	
cis-1,3-Dichloropropene, ug/L	<20	
m- and p-Xylene Isomers, ug/L	<20	
o-Xylene, ug/L	<20	
p-Isopropyl toluene, ug/L	<20	
sec-Butylbenzene, ug/L	<20	
trans-1,2-Dichloroethene, ug/L	<20	
trans-1,3-Dichloropropene, ug/L	<20	
tert-Butylbenzene, ug/L	<20	
Other E524.2/VOC	---	

Sample GW-7 was run at both dilution 200 and dilution 100. High dilution was required because of the level of trichloroethene found. Both results are reported.
-- H. Cochran 4/3/95


Mark A. Valentini, PhD, Laboratory Director

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ANALYTICAL REPORT

LOG NO: G95-09-373

Received: 22 SEP 95

Mailed: OCT 12 1995

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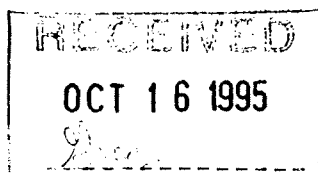
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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
09-373-1	GW-2	21 SEP 95			
09-373-2	GW-3	21 SEP 95			
09-373-3	GW-7	21 SEP 95			
09-373-4	GW-10	21 SEP 95			
PARAMETER	09-373-1	09-373-2	09-373-3	09-373-4	
Chloride (300.0), mg/L	40	29	32	27	
Nitrate (300.0), mg/L	55	48	55	46	
Nitrite (300.0), mg/L	<0.2	<0.2	<0.2	<0.2	
Sulfate (300.0), mg/L	61	49	57	60	
Turbidity (180.1), NTU	1.1	13	0.9	0.4	
Dissolved Solids (160.1), mg/L	530	430	460	440	
Alkalinity (310.1)					
Carbonate Alk (as CaCO3), mg/L	<10	<10	<10	<10	
Bicarbonate Alk (as CaCO3), mg/L	260	220	220	220	
Hydroxide Alk (as CaCO3), mg/L	<10	<10	<10	<10	
Total Alkalinity (as CaCO3), mg/L	260	220	220	220	
Calcium (6010), mg/L	110	83	89	83	
Magnesium (6010), mg/L	25	19	20	19	
Potassium (6010), mg/L	4.7	5.9	4.0	4.1	
Sodium (6010), mg/L	29	23	26	26	
Digestion (3010), Date	10/01/95	10/01/95	10/01/95	10/01/95	



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Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES				DATE SAMPLED
09-373-1	GW-2				21 SEP 95
09-373-2	GW-3				21 SEP 95
09-373-3	GW-7				21 SEP 95
09-373-4	GW-10				21 SEP 95
PARAMETER	09-373-1	09-373-2	09-373-3	09-373-4	
GRO/DRO (8015M)					
Date Analyzed	09/26/95	09/26/95	09/26/95	09/26/95	
Date Extracted	09/22/95	09/22/95	09/22/95	09/22/95	
Dilution Factor, Times	1	1	1	1	
TPH (total), mg/L	<2	<2	<2	<2	
Other GRO/DRO (8015M)	---	---	---	---	
Surrogates **					
Naphthalene Reported, mg/L	1.71	1.66	1.69	1.82	
Naphthalene Theoretical, mg/L	2.00	2.00	2.00	2.00	

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-373-1	GW-2	21 SEP 95
09-373-2	GW-3	21 SEP 95
09-373-3	GW-7	21 SEP 95
09-373-4	GW-10	21 SEP 95

PARAMETER	09-373-1	09-373-2	09-373-3	09-373-4
E524.2/VOC (524.2)				
Date Analyzed	10/05/95	10/04/95	10/05/95	10/04/95
Dilution Factor, Times	1	1	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	<0.2
1,1,1-Trichloroethane, ug/L	<0.2	<0.2	1.6	<0.2
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane, ug/L	0.59	0.33	0.67	<0.2
1,1-Dichloroethene, ug/L	<0.2	0.63	1.2	<0.2
1,1-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichloropropane, ug/L	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane, ug/L	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2
1,3-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2
1,3-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2
1,4-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2
2,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
09-373-1	GW-2	21 SEP 95			
09-373-2	GW-3	21 SEP 95			
09-373-3	GW-7	21 SEP 95			
09-373-4	GW-10	21 SEP 95			
PARAMETER	09-373-1	09-373-2	09-373-3	09-373-4	
2-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	<0.2	
4-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromochloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromodichloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromomethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Benzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromoform, ug/L	<0.5	<0.5	<0.5	<0.5	
Chlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Carbon Tetrachloride, ug/L	<0.2	0.84	1.6	<0.2	
Chloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Chloroform, ug/L	0.44	0.50	1.3	0.42	
Chloromethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Dibromochloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Dibromomethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Dichlorodifluoromethane, ug/L	3.3	1.6	0.64	1.5	
Ethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Freon 113, ug/L	<0.2	<0.2	<0.2	<0.2	
Hexachlorobutadiene, ug/L	<0.2	<0.2	<0.2	<0.2	
Isopropylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Methylene chloride, ug/L	<1	<1	<1	<1	
N-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
N-Propylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Naphthalene, ug/L	<1	<1	<1	<1	

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LOG NO: G95-09-373

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REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED			
09-373-1	GW-2	21 SEP 95			
09-373-2	GW-3	21 SEP 95			
09-373-3	GW-7	21 SEP 95			
09-373-4	GW-10	21 SEP 95			
PARAMETER	09-373-1	09-373-2	09-373-3	09-373-4	
Styrene, ug/L	<0.2	<0.2	<0.2	<0.2	
Trichloroethene, ug/L	5.1	18	110	21	
Trichlorofluoromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Toluene, ug/L	<0.2	<0.2	<0.2	<0.2	
Tetrachloroethene, ug/L	5.0	2.2	1.6	2.3	
Vinyl chloride, ug/L	<0.2	<0.2	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	3.4	1.3	1.4	0.94	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.4	<0.4	<0.4	<0.4	
o-Xylene, ug/L	<0.2	<0.2	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	0.48	0.51	<0.2	
sec-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	0.20	<0.2	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Other E524.2/VOC (524.2)	---	---	---	---	
Surrogates **					
1,2-Dichlorobenzene-d4 Rep., ug/L	5.39	5.32	5.28	4.82	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00	5.00	5.00	
4-Bromofluorobenzene Rep., ug/L	5.90	6.11	5.99	5.61	
4-Bromofluorobenzene Theo., ug/L	5.00	5.00	5.00	5.00	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-373-5	Equipment Blank	21 SEP 95
PARAMETER	09-373-5	
Chloride (300.0), mg/L	<0.5	
Nitrate (300.0), mg/L	<0.2	
Nitrite (300.0), mg/L	<0.2	
Sulfate (300.0), mg/L	<0.5	
Turbidity (180.1), NTU	<0.1	
Dissolved Solids (160.1), mg/L	<10	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<10	
Bicarbonate Alk (as CaCO3), mg/L	<10	
Hydroxide Alk (as CaCO3), mg/L	<10	
Total Alkalinity (as CaCO3), mg/L	<10	
Calcium (6010), mg/L	<0.5	
Magnesium (6010), mg/L	<0.1	
Potassium (6010), mg/L	<0.5	
Sodium (6010), mg/L	<0.5	
Digestion (3010), Date	10/01/95	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-373-5	Equipment Blank	21 SEP 95
PARAMETER	09-373-5	
GRO/DRO (8015M)		
Date Analyzed	09/26/95	
Date Extracted	09/22/95	
Dilution Factor, Times	1	
TPH (total), mg/L	<2	
Other GRO/DRO (8015M)	---	
Surrogates **		
Naphthalene Reported, mg/L	1.76	
Naphthalene Theoretical, mg/L	2.00	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-373-5	Equipment Blank	21 SEP 95
PARAMETER	09-373-5	
E524.2/VOC (524.2)		
Date Analyzed	10/05/95	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-373-5	Equipment Blank	21 SEP 95
PARAMETER	09-373-5	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.31	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	<0.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	<0.2	
Vinyl chloride, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-373-5	Equipment Blank	21 SEP 95
PARAMETER	09-373-5	
cis-1,2-Dichloroethene, ug/L	<0.2	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.4	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC (524.2)	---	
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	4.64	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	
4-Bromofluorobenzene Rep., ug/L	5.48	
4-Bromofluorobenzene Theo., ug/L	5.00	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-373-6	Trip Blank	21 SEP 95
PARAMETER	09-373-6	
GRO/DRO (8015M)		
Date Analyzed	09/26/95	
Date Extracted	09/22/95	
Dilution Factor, Times	1	
TPH (total), mg/L	<2	
Other GRO/DRO (8015M)	---	
Surrogates **		
Naphthalene Reported, mg/L	1.65	
Naphthalene Theoretical, mg/L	2.00	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-373-6	Trip Blank	21 SEP 95
PARAMETER	09-373-6	
E524.2/VOC (524.2)		
Date Analyzed	10/05/95	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-373-6	Trip Blank	21 SEP 95
PARAMETER	09-373-6	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	<0.2	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	<0.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	<0.2	
Vinyl chloride, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-373-6	Trip Blank	21 SEP 95
PARAMETER	09-373-6	
cis-1,2-Dichloroethene, ug/L	<0.2	
cis-1,3-Dichloropropene, ug/L	<0.2	
- and p-Xylene Isomers, ug/L	<0.4	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC (524.2)	---	
Surrogates **		
1,2-Dichlorobenzene-d4 Rep., ug/L	4.30	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	
4-Bromofluorobenzene Rep., ug/L	5.25	
4-Bromofluorobenzene Theo., ug/L	5.00	

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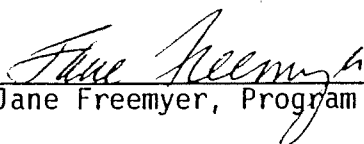
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REPORT OF ANALYTICAL RESULTS

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Jane Freemyer, Program Manager

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location

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003335

ANALYTICAL REPORT

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818/247-5737
Fax: 818/247-9797

LOG NO: G95-09-476

Received: 20 SEP 95

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
09-476-1	GW-9	20 SEP 95	
09-476-2	GW-8	20 SEP 95	
PARAMETER	09-476-1	09-476-2	
Chloride (300.0), mg/L	27	35	
Sulfate (300.0), mg/L	46	52	
Nitrite (300.0), mg/L	<0.2	<0.2	
Sulfate (300.0), mg/L	61	58	
Turbidity (180.1), NTU	13	43	
Dissolved Solids (160.1), mg/L	430	530	
Alkalinity (310.1)			
Carbonate Alk (as CaCO3), mg/L	<10	<10	
Bicarbonate Alk (as CaCO3), mg/L	210	280	
Hydroxide Alk (as CaCO3), mg/L	<10	<10	
Total Alkalinity (as CaCO3), mg/L	210	280	
Calcium (6010), mg/L	82	100	
Magnesium (6010), mg/L	19	25	
Potassium (6010), mg/L	4.7	6.2	
Sodium (6010), mg/L	28	30	
Digestion (3010), Date	10/01/95	10/01/95	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
09-476-1	GW-9	20 SEP 95	
09-476-2	GW-8	20 SEP 95	
PARAMETER	09-476-1	09-476-2	
GRO/DRO (8015M)			
ate Analyzed	09/26/95	09/26/95	
Date Extracted	09/22/95	09/22/95	
Dilution Factor, Times	1	1	
TPH (total), mg/L	<2	<2	
Other GRO/DRO (8015M)	---	---	
Surrogates **			
Naphthalene Reported, mg/L	1.92	1.93	
Naphthalene Theoretical, mg/L	2.00	2.00	

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
09-476-1	GW-9	20 SEP 95
09-476-2	GW-8	20 SEP 95

PARAMETER	09-476-1	09-476-2
F524.2/VOC (524.2)		
te Analyzed	10/01/95	10/02/95
ilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2
1,1,1-Trichloroethane, ug/L	<0.2	<0.2
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2
1,1,2-Trichloroethane, ug/L	<0.2	<0.2
1,1-Dichloroethane, ug/L	<0.2	0.40
1,1-Dichloroethene, ug/L	<0.2	<0.2
1,1-Dichloropropene, ug/L	<0.2	<0.2
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2
1,2,3-Trichloropropane, ug/L	<0.5	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5
1,2-Dibromoethane, ug/L	<0.2	<0.2
1,2-Dichloroethane, ug/L	<0.2	<0.2
1,2-Dichlorobenzene, ug/L	<0.2	<0.2
1,2-Dichloropropane, ug/L	<0.2	<0.2
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2
1,3-Dichlorobenzene, ug/L	<0.2	<0.2
1,3-Dichloropropane, ug/L	<0.2	<0.2
1,4-Dichlorobenzene, ug/L	<0.2	<0.2
2,2-Dichloropropane, ug/L	<0.2	<0.2
2-Chlorotoluene, ug/L	<0.2	<0.2
4-Chlorotoluene, ug/L	<0.2	<0.2

B C Analytical

Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G95-09-476

Received: 20 SEP 95

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Project: ALLIED.SIGNAL

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
09-476-1	GW-9	20 SEP 95	
09-476-2	GW-8	20 SEP 95	
PARAMETER	09-476-1	09-476-2	
Bromobenzene, ug/L	<0.2	<0.2	
Bromochloromethane, ug/L	<0.2	<0.2	
Bromodichloromethane, ug/L	<0.2	<0.2	
Bromomethane, ug/L	<0.5	<0.5	
Benzene, ug/L	<0.2	<0.2	
Bromoform, ug/L	<0.5	<0.5	
Chlorobenzene, ug/L	<0.2	<0.2	
Carbon Tetrachloride, ug/L	<0.2	<0.2	
Chloroethane, ug/L	<0.2	<0.2	
Chloroform, ug/L	<0.2	0.47	
Chloromethane, ug/L	<0.5	<0.5	
Dibromochloromethane, ug/L	<0.2	<0.2	
Dibromomethane, ug/L	<0.2	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	3.9	
Ethylbenzene, ug/L	<0.2	<0.2	
Freon 113, ug/L	<0.2	<0.2	
Hexachlorobutadiene, ug/L	<0.2	<0.2	
Isopropylbenzene, ug/L	<0.2	<0.2	
Methylene chloride, ug/L	<1	<1	
N-Butylbenzene, ug/L	<0.2	<0.2	
N-Propylbenzene, ug/L	<0.2	<0.2	
Naphthalene, ug/L	<1	<1	
Styrene, ug/L	<0.2	<0.2	
Trichloroethene, ug/L	0.47	6.4	
Trichlorofluoromethane, ug/L	<0.2	<0.2	
Toluene, ug/L	<0.2	<0.2	

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REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED	
09-476-1	GW-9	20 SEP 95	
09-476-2	GW-8	20 SEP 95	
PARAMETER	09-476-1	09-476-2	
Tetrachloroethene, ug/L	0.48	4.9	
vinyl chloride, ug/L	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	0.37	2.0	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.4	<0.4	
o-Xylene, ug/L	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	<0.2	
sec-Butylbenzene, ug/L	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	
Other E524.2/VOC (524.2)	---	---	
Surrogates **			
1,2-Dichlorobenzene-d4 Rep., ug/L	4.57	5.55	
1,2-Dichlorobenzene-d4 Theo, ug/L	5.00	5.00	
4-Bromofluorobenzene Rep., ug/L	5.25	6.13	
4-Bromofluorobenzene Theo., ug/L	5.00	5.00	

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LOG NO: G95-09-476

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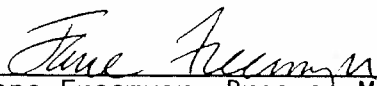
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REPORT OF ANALYTICAL RESULTS

Page 6



Jane Freemyer, Program Manager

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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APPENDIX C

CHAIN OF CUSTODY DOCUMENTS

545-0312

C ANALYTICAL
1085 Shary Circle, Concord, CA 94518 (510) 825-3894
401 Western Avenue, Glendale, CA 91201 (818) 247-5737
20000 Ave. Mar. Anaheim, CA 92805 (714) 970-0000

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client's expense
Disposal arrangements: _____

*KEY: AG---Aqueous NA---Nonaqueous SL---Sludge
GW - Groundwater SO---Soil PE - Petroleum

G45-03-185

801 Western Avenue, Glendale, CA 91201 (818) 247-5737

~~056950~~

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum
WW—Wastewater

695-09-373

BCA Log Number

[illegible]

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum
WW—Wastewater

801 Western Avenue, Glendale, CA 91201 (818) 247-5737

801 Western Avenue, Glendale, CA 91201 (818) 247-5737

[illegible]

BCA Log Number
01521-01

3 C ANALYTICAL

☐ 1095 Shary Circle, Concord, CA 94518 (510) 825-3894

☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737

☐ 1500 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum
WW—Wastewater



AlliedSignal Corp.
AEROSPACE COMPONENT SYSTEMS
2525 W. Fourth Street
Torrance, CA 90501-6099

(310) 512-2296
(310) 512-2221 FAX

September 7, 1995

Mr. Barry Foose
Kaiser Regional Laboratories
Health Environmental Safety Office
11668 Sherman Way
North Hollywood, CA 91605

RE: REQUESTED DOCUMENT

Dear Mr. Foose:

Per our agreement, one (1) copy is enclosed for the below referenced document:

RESULTS OF GROUNDWATER MONITORING
THIRD AND FOURTH QUARTERS 1994

AlliedSignal AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA
VOLUME I

dated August 17, 1995

Prepared by SECOR International Incorporated
Job Number: A0057-001/ASN40

If you have any questions or comments, please call me at (310) 512-2296

Sincerely,

James C. Long
Program Manager
Environmental Remediation
Facility Operations

(1) Enclosure

cc: K. Berke, AlliedSignal Automotive
B. Dehghi, Merit Services
J. Lambert, Kaiser Permanente
J. Stubbs, AES
A. Zimmerman, Kaiser Permanente

003348

1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the third quarter of 1994 was conducted at the AlliedSignal Aerospace property in North Hollywood, California on August 15-16 and September 7-8, 1994, and groundwater monitoring for the fourth quarter of 1994 was conducted on November 22 and December 8-13, 1994. The groundwater monitoring was conducted in accordance with the California Regional Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. Six on-site groundwater monitoring wells (GW-1 through GW-6) and four off-site groundwater monitoring wells (GW-7 through GW-10) were sampled during the August/September 1994 groundwater monitoring event. Nine groundwater monitoring wells (GW-2 through GW-10) were sampled during the November/December groundwater monitoring event.

The groundwater level measurements obtained on August 15, 1994 indicate that the instantaneous groundwater flow direction was southerly beneath the eastern portion of the Site and southwesterly beneath the central and western portions of the Site and the Kaiser property. The groundwater level measurements obtained on September 7, 1994 indicate that the instantaneous groundwater flow direction was southwesterly beneath the Site and the Kaiser property. Based on groundwater level measurements obtained on November 21, 1994, the instantaneous groundwater flow direction was westerly beneath the Site and the Kaiser property. The groundwater level measurements obtained on December 8, 1994 indicate that the instantaneous groundwater flow direction was northwesterly beneath the Site and the Kaiser property. Determination of an average groundwater flow direction based on the groundwater contours in a transient system such as the one present beneath the Site is questionable.

Nitrate was detected in the groundwater samples collected from all the groundwater monitoring wells at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL) during the August 1994 groundwater sampling event and in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3, and GW-5 through GW-10 during the December 1994 groundwater sampling episode. Although VOC concentrations in groundwater monitoring well GW-10 historically correlated with those of groundwater monitoring well GW-7, during August and September 1994, VOC concentrations in groundwater monitoring well GW-7 did not correlate with those of groundwater monitoring well GW-10. On November 22, 1994, during routine maintenance of groundwater monitoring wells, the bladder pump of groundwater monitoring well GW-7 was removed from the well and it was observed

that the bladder was ruptured. This was consistent with the low flow rate observed during purging of the groundwater monitoring well GW-7 during the August and September 1994 groundwater sampling episodes. For this reason, the VOC test results of the groundwater samples collected from groundwater monitoring well GW-7 for August and September 1994 are not valid. A comparison of historic test results of groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 indicate that VOC results of groundwater samples collected from groundwater monitoring well GW-7 may not be valid since March 1994.

Trichloroethene (TCE) was detected at concentrations above the MCL in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-5 and GW-7 through GW-10 during the August and September 1994 groundwater sampling events, in groundwater monitoring well GW-2 only during the November 1994 groundwater sampling event, and in groundwater monitoring wells GW-2 through GW-4 and GW-7 through GW-10 during the December 1994 groundwater sampling event. Only the Tetrachloroethene (PCE) concentration detected in the groundwater sample collected from groundwater monitoring well GW-9 during the August 1994 groundwater sampling event was above the MCL. The Carbon Tetrachloride (CT) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-4, GW-5 and GW-8 (August 1994), groundwater monitoring wells GW-2, GW-5, GW-8, and GW-9 (September 1994), groundwater monitoring well GW-2 (November 1994), and groundwater monitoring wells GW-2, GW-7, and GW-10 (December 1994) were above the MCL. The cis-1,2-Dichloroethene (cis-1,2-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-1 and GW-10 (August 1994), groundwater monitoring wells GW-1, GW-3, and GW-10 (September 1994), and groundwater monitoring wells GW-7 and GW-10 (December 1994) were above the MCL. The 1,1-Dichloroethene (1,1-DCE) concentrations detected in groundwater samples collected from groundwater monitoring well GW-3 (August 1994), groundwater monitoring wells GW-2, GW-3, and GW-4 (September 1994), and groundwater well GW-7 (December 1994) were above the MCL. The concentration of 1,1-Dichloroethane (1,1-DCA) detected in the groundwater sample obtained from groundwater monitoring well GW-3 during the September 7-8, 1994 groundwater sampling event was above the MCL. Groundwater samples collected from the ten groundwater monitoring wells sampled during the August 15-16, 1994, September 7-8, 1994 and the November 22, 1994 groundwater monitoring episodes and the nine groundwater monitoring wells sampled during the December 8-13, 1994 groundwater sampling event did not contain other VOCs at concentrations at or above their respective MCLs.

Several VOCs, including TCE, were detected in the equipment blank sample collected during the August and December 1994 groundwater sampling episodes. In addition, TCE was detected in the trip blank samples provided by the laboratory for the August 1994 groundwater monitoring event. Several other chemical compounds including 1,1,2-Trichloroethane (1,1,2-TCA), Naphthalene and 1,1,2,2-Tetrachloroethane (1,1,2,2-PCA), which were detected in the method blank, were also detected in the equipment blank samples. Since VOC concentrations of groundwater samples

collected from groundwater monitoring well GW-7 were not correlated with those of groundwater monitoring well GW-10 in the August 1994 groundwater sampling episode, groundwater samples were collected from groundwater monitoring wells GW-1 through GW-10 on September 7-8, 1994 and were analyzed for VOCs. During the December 1994 groundwater sampling episode, the sample bottles for the equipment blank samples, which were supplied by BCA, were filled with Arrowhead™ deionized water using a submersible pump. It appears likely that the source of the TCE and other VOCs detected in the equipment blank sample collected during the December, 1994 groundwater sampling event is either the bottled Arrowhead™ deionized water or the tubing connected to the submersible pump.

During the last six groundwater sampling events, concentrations of TCE in groundwater generally increased from November 1993 to February 1994, but subsequently decreased in several of the groundwater monitoring wells between February/March 1994 and May 1994. TCE concentrations again increased in all the groundwater monitoring wells between May 1994 and August/September 1994 and then decreased in groundwater monitoring wells GW-2 through GW-10 between August/September 1994 and November/December 1994. Groundwater monitoring well GW-1 was damaged by the treatment contractor during the on-site remediation of shallow soil impacted by Total Petroleum Hydrocarbons (TPH). Subsequently, no groundwater samples were collected from this monitoring well during the December 1994 groundwater monitoring episode. For example, the TCE concentrations detected in groundwater monitoring wells GW-1, GW-2, GW-4 and GW-7 through GW-10 increased between one and two orders of magnitude from the November 1993 to the February 1994 groundwater sampling episode, whereas the TCE concentrations in groundwater monitoring wells GW-3, GW-5 and GW-6 remained consistent during this period. However, the TCE concentrations detected in all ten groundwater monitoring wells decreased as much as two orders of magnitude from the February/March 1994 groundwater sampling episode to the May 1994 groundwater sampling event. The concentrations of TCE detected in all ten groundwater monitoring wells increased as much as three orders of magnitude from the May 1994 groundwater monitoring event to the August/September 1994 groundwater sampling episode. In addition, the concentrations of TCE detected in groundwater monitoring wells decreased up to two orders of magnitude from the August/September 1994 groundwater monitoring event to the November/December 1994 groundwater sampling episode. An off-site source together with pumping of the production wells in the North Hollywood and Rinaldi-Toluca well fields likely accounts for the fluctuation in TCE concentrations detected in groundwater monitoring wells at the Site.

7.0 DISCUSSION

Based on groundwater level measurements obtained between July 19 and November 21, 1994, groundwater elevations dropped between 20.69 feet (groundwater monitoring well GW-5) and 26.25 feet (groundwater monitoring well GW-9) beneath the Site. Between November 21 and December 8, 1994, groundwater elevations rose between 0.82 feet (groundwater monitoring well GW-6) and 3.29 feet (groundwater monitoring well GW-9) feet beneath the Site. Based on the groundwater level measurements obtained on July 19, 1994, the instantaneous groundwater flow direction was southeasterly beneath the Site and the Kaiser property. The groundwater level measurements collected on August 15 and October 11, 1994 indicated that the instantaneous groundwater flow direction was southerly beneath the eastern portion of the Site and southwesterly beneath the central and western portions of the Site and the Kaiser property. Based on the groundwater level measurements obtained on September 7, 1994, the instantaneous groundwater flow direction was southwesterly beneath the Site and the Kaiser property. The groundwater level measurements collected on November 21, 1994 indicated that the instantaneous groundwater flow direction was westerly and the groundwater level measurements obtained on December 8, 1994, indicated the instantaneous groundwater flow direction was northwesterly beneath the Site and the Kaiser property. Instantaneous groundwater flow beneath the Site is significantly impacted by pumping of aeration wells and supply wells located within the Rinaldi-Toluca and North Hollywood well fields.

TCE was detected at concentrations greater than the MCL in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-5 and GW-7 through GW-10 during the August 15-16 and September 7-8, 1994 groundwater sampling events, groundwater monitoring well GW-2 during the November 22, 1994 groundwater sampling event, and groundwater monitoring wells GW-2 through GW-4 and GW-7 through GW-10 during the December 8-13, 1994 groundwater sampling event. Historically, VOC concentration of groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 correlated. During a routine maintenance operation of groundwater monitoring wells on November 22, 1994, the bladder of the dedicated bladder pump in groundwater monitoring well GW-7 was observed to be ruptured. Additionally, the purging flow rate of groundwater monitoring well GW-7 was abnormally low. Consequently, the VOC concentration of groundwater samples collected from groundwater monitoring well GW-7 since March 1994 should be considered underestimated and invalid.

The PCE concentration detected in the groundwater samples collected during the August 15-16, 1994 groundwater sampling event from groundwater monitoring well GW-9 was above the MCL. The CT concentrations detected in the groundwater samples collected from groundwater monitoring wells GW-2, GW-4, GW-5 and GW-8 during the August 15-16, 1994 groundwater sampling event, groundwater monitoring wells GW-2, GW-5, GW-8, and GW-9 during the September 7-8, 1994

groundwater sampling event. groundwater monitoring well GW-2 during the November 22, 1994, and groundwater monitoring wells GW-2, GW-7, and GW-10 during the December 8-13, 1994 groundwater sampling event were above the MCL.

The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-1 and GW-10 during the August 15-16, 1994 groundwater sampling event, groundwater monitoring wells GW-1, GW-3, and GW-10 during the September 7-8, 1994 groundwater sampling event, and groundwater monitoring wells GW-7 and GW-10 during the December 8-13, 1994 groundwater sampling event were above the MCL. The concentration of 1,1-DCE detected in the groundwater sample collected from groundwater monitoring well GW-3 (August 15-16, 1994 groundwater sampling event), groundwater monitoring wells GW-2, GW-3, and GW-4 (September 7-8, 1994 groundwater sampling event) and groundwater monitoring well GW-7 (December 8-13, 1994 groundwater sampling event) was above the MCL. The concentration of 1,1-DCA detected in the groundwater sample obtained from groundwater monitoring well GW-3 during the September 7-8, 1994 groundwater sampling event was above the MCL. All other VOCs detected in the groundwater samples collected from the ten groundwater monitoring wells sampled during the August 15-16 and September 7-8, 1994 groundwater sampling events, and the nine groundwater monitoring wells sampled during the December 8-13, 1994 groundwater sampling event were present at concentrations below their respective MCLs.

Nitrate was detected at concentrations above the MCL in groundwater samples collected from all ten groundwater monitoring wells during the August 15-16, 1994 groundwater sampling episode, and in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3, and GW-5 through GW-10 during the December 8-13, 1994 groundwater sampling episode. The turbidity levels were above the secondary MCL in the groundwater sample collected from groundwater monitoring well GW-4 during the August 15-16, 1994 groundwater sampling event, and in the groundwater samples collected from groundwater monitoring wells GW-2 through GW-4 and GW-8 through GW-10 during the December 8-13, 1994 groundwater sampling event. No other inorganic constituents were detected above the primary or secondary MCLs during the August 15-16, or December 8-13, 1994 groundwater sampling episodes.

During the August 15-16, 1994 groundwater sampling episode, several VOCs, including TCE, were detected in the field/equipment blank sample. In addition, TCE was detected in the trip blank sample provided by BCA for the August 15-16, 1994 groundwater monitoring event. The sample bottles for the field/equipment blank samples, which were supplied by BCA, were filled with laboratory grade water provided by BCA. The presence of TCE at concentrations exceeding the MCL in equipment blank samples raises questions about the validity of the corresponding reported TCE concentrations. Taking into account the dilution factors, the reported TCE concentrations in diluted groundwater samples may be significantly exaggerated. Because the VOC concentrations in groundwater monitoring wells GW-7 and GW-10 did not correlate, groundwater samples were

collected from groundwater monitoring wells GW-1 through GW-10 on September 8, 1994, and were analyzed for VOCs.

Several VOCs, including TCE, were detected in the equipment blank sample collected during the December 8-13, 1994 groundwater sampling episode. The sample bottles for the field/equipment blank samples, which were supplied by BCA, were filled with Arrowhead™ distilled water using a submersible pump. Detection of TCE in the equipment blank sample raises concerns that the reported TCE concentrations in diluted groundwater samples may be exaggerated.

In general, the concentrations of VOCs detected in groundwater samples from all ten groundwater monitoring wells increased from the May 1994 groundwater sampling event to the August/September 1994 groundwater sampling episode. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-1 through GW-10 increased from 3.5 µg/l, 9.6 µg/l, 6.0 µg/l, 0.63 µg/l, 0.77 µg/l, 0.95 µg/l, 0.36 µg/l, 1.2 µg/l, 3.4 µg/l and 12 µg/l, respectively, during the May 1994 groundwater sampling event to 1,800 µg/l, 830 µg/l, 1,200 µg/l, 130 µg/l, 6.4 µg/l, 1.5 µg/l, 22 µg/l, 28 µg/l, 110 µg/l and 9,000 µg/l, respectively, during the August 1994 groundwater sampling event and 6,400 µg/l, 810 µg/l, 4,300 µg/l, 100 µg/l, 6.0 µg/l, 1.1 µg/l, 48 µg/l, 32 µg/l, 75 µg/l and 4,700 µg/l during the September 1994 groundwater monitoring episode.

Between the August/September 1994 and the December 1994 groundwater sampling episodes, the concentrations of VOCs decreased in the groundwater samples collected. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-2 through GW-6 and GW-8 through GW-10 decreased from 810 µg/l, 4,300 µg/l, 100 µg/l, 6.0 µg/l, 1.1 µg/l, 32 µg/l, 75 µg/l and 4,700 µg/l, respectively, during the September 1994 groundwater sampling event to 13 µg/l, 36 µg/l, 12 µg/l, 1.6 µg/l, 0.7 µg/l, 8.6 µg/l, 9.4 µg/l and 360 µg/l, respectively, during the December 1994 groundwater monitoring episode, whereas the TCE concentration increased in the groundwater samples collected from groundwater monitoring well GW-7 from 48 µg/l to 440 µg/l over the same period. However, the VOC concentration of groundwater samples collected from groundwater monitoring well GW-7 during August and September 1994 groundwater sampling episodes are underestimated because of the ruptured bladder of its dedicated bladder pump. The pumping of the production wells in the Tujunga and Rinaldi-Toluca well fields together with an off-site source likely accounts for the fluctuation in TCE concentrations detected in groundwater samples collected from certain groundwater monitoring wells at the Site.

**RESULTS OF GROUNDWATER MONITORING
THIRD AND FOURTH QUARTERS 1994**

**AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

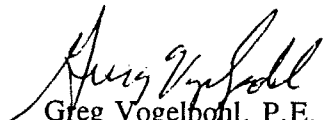
VOLUME I

Prepared for:
AlliedSignal Aerospace
2525 West 190th Street
Torrance, California 90509


Prepared by:
SECOR International Incorporated
3437 Empresa Drive, Suite A
San Luis Obispo, California 93401

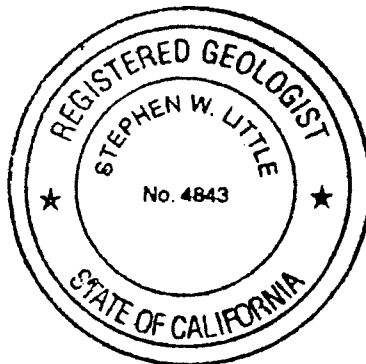
August 17, 1995
Job Number: A0057-001-01/ASN40

Prepared by:


Greg Vogelponl, P.E.
Senior Engineer

Reviewed by:


Steve Little, R.G.
Principal Geologist



**RESULTS OF GROUNDWATER MONITORING
THIRD AND FOURTH QUARTERS 1994**

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NORTH HOLLYWOOD, CALIFORNIA**

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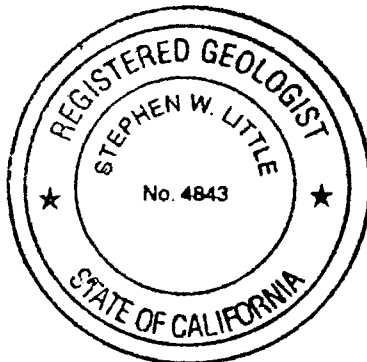
August 17, 1995
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Reviewed by:


Steve Little, R.G.
Principal Geologist



**RESULTS OF GROUNDWATER MONITORING
THIRD AND FOURTH QUARTERS 1994
AlliedSignal Aerospace
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

August 17, 1995
Job Number: A0057-001-01/ASN40

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1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the third quarter of 1994 was conducted at the AlliedSignal Aerospace property in North Hollywood, California on August 15-16 and September 7-8, 1994, and groundwater monitoring for the fourth quarter of 1994 was conducted on November 22 and December 8-13, 1994. The groundwater monitoring was conducted in accordance with the California Regional Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. Six on-site groundwater monitoring wells (GW-1 through GW-6) and four off-site groundwater monitoring wells (GW-7 through GW-10) were sampled during the August/September 1994 groundwater monitoring event. Nine groundwater monitoring wells (GW-2 through GW-10) were sampled during the November/December groundwater monitoring event.

The groundwater level measurements obtained on August 15, 1994 indicate that the instantaneous groundwater flow direction was southerly beneath the eastern portion of the Site and southwesterly beneath the central and western portions of the Site and the Kaiser property. The groundwater level measurements obtained on September 7, 1994 indicate that the instantaneous groundwater flow direction was southwesterly beneath the Site and the Kaiser property. Based on groundwater level measurements obtained on November 21, 1994, the instantaneous groundwater flow direction was westerly beneath the Site and the Kaiser property. The groundwater level measurements obtained on December 8, 1994 indicate that the instantaneous groundwater flow direction was northwesterly beneath the Site and the Kaiser property. Determination of an average groundwater flow direction based on the groundwater contours in a transient system such as the one present beneath the Site is questionable.

Nitrate was detected in the groundwater samples collected from all the groundwater monitoring wells at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL) during the August 1994 groundwater sampling event and in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3, and GW-5 through GW-10 during the December 1994 groundwater sampling episode. Although VOC concentrations in groundwater monitoring well GW-10 historically correlated with those of groundwater monitoring well GW-7, during August and September 1994, VOC concentrations in groundwater monitoring well GW-7 did not correlate with those of groundwater monitoring well GW-10. On November 22, 1994, during routine maintenance of groundwater monitoring wells, the bladder pump of groundwater monitoring well GW-7 was removed from the well and it was observed

that the bladder was ruptured. This was consistent with the low flow rate observed during purging of the groundwater monitoring well GW-7 during the August and September 1994 groundwater sampling episodes. For this reason, the VOC test results of the groundwater samples collected from groundwater monitoring well GW-7 for August and September 1994 are not valid. A comparison of historic test results of groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 indicate that VOC results of groundwater samples collected from groundwater monitoring well GW-7 may not be valid since March 1994.

Trichloroethene (TCE) was detected at concentrations above the MCL in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-5 and GW-7 through GW-10 during the August and September 1994 groundwater sampling events, in groundwater monitoring well GW-2 only during the November 1994 groundwater sampling event, and in groundwater monitoring wells GW-2 through GW-4 and GW-7 through GW-10 during the December 1994 groundwater sampling event. Only the Tetrachloroethene (PCE) concentration detected in the groundwater sample collected from groundwater monitoring well GW-9 during the August 1994 groundwater sampling event was above the MCL. The Carbon Tetrachloride (CT) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-4, GW-5 and GW-8 (August 1994), groundwater monitoring wells GW-2, GW-5, GW-8, and GW-9 (September 1994), groundwater monitoring well GW-2 (November 1994), and groundwater monitoring wells GW-2, GW-7, and GW-10 (December 1994) were above the MCL. The cis-1,2-Dichloroethene (cis-1,2-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-1 and GW-10 (August 1994), groundwater monitoring wells GW-1, GW-3, and GW-10 (September 1994), and groundwater monitoring wells GW-7 and GW-10 (December 1994) were above the MCL. The 1,1-Dichloroethene (1,1-DCE) concentrations detected in groundwater samples collected from groundwater monitoring well GW-3 (August 1994), groundwater monitoring wells GW-2, GW-3, and GW-4 (September 1994), and groundwater well GW-7 (December 1994) were above the MCL. The concentration of 1,1-Dichloroethane (1,1-DCA) detected in the groundwater sample obtained from groundwater monitoring well GW-3 during the September 7-8, 1994 groundwater sampling event was above the MCL. Groundwater samples collected from the ten groundwater monitoring wells sampled during the August 15-16, 1994, September 7-8, 1994 and the November 22, 1994 groundwater monitoring episodes and the nine groundwater monitoring wells sampled during the December 8-13, 1994 groundwater sampling event did not contain other VOCs at concentrations at or above their respective MCLs.

Several VOCs, including TCE, were detected in the equipment blank sample collected during the August and December 1994 groundwater sampling episodes. In addition, TCE was detected in the trip blank samples provided by the laboratory for the August 1994 groundwater monitoring event. Several other chemical compounds including 1,1,2-Trichloroethane (1,1,2-TCA), Naphthalene and 1,1,2,2-Tetrachloroethane (1,1,2,2-PCA), which were detected in the method blank, were also detected in the equipment blank samples. Since VOC concentrations of groundwater samples

collected from groundwater monitoring well GW-7 were not correlated with those of groundwater monitoring well GW-10 in the August 1994 groundwater sampling episode, groundwater samples were collected from groundwater monitoring wells GW-1 through GW-10 on September 7-8, 1994 and were analyzed for VOCs. During the December 1994 groundwater sampling episode, the sample bottles for the equipment blank samples, which were supplied by BCA, were filled with Arrowhead™ deionized water using a submersible pump. It appears likely that the source of the TCE and other VOCs detected in the equipment blank sample collected during the December, 1994 groundwater sampling event is either the bottled Arrowhead™ deionized water or the tubing connected to the submersible pump.

During the last six groundwater sampling events, concentrations of TCE in groundwater generally increased from November 1993 to February 1994, but subsequently decreased in several of the groundwater monitoring wells between February/March 1994 and May 1994. TCE concentrations again increased in all the groundwater monitoring wells between May 1994 and August/September 1994 and then decreased in groundwater monitoring wells GW-2 through GW-10 between August/September 1994 and November/December 1994. Groundwater monitoring well GW-1 was damaged by the treatment contractor during the on-site remediation of shallow soil impacted by Total Petroleum Hydrocarbons (TPH). Subsequently, no groundwater samples were collected from this monitoring well during the December 1994 groundwater monitoring episode. For example, the TCE concentrations detected in groundwater monitoring wells GW-1, GW-2, GW-4 and GW-7 through GW-10 increased between one and two orders of magnitude from the November 1993 to the February 1994 groundwater sampling episode, whereas the TCE concentrations in groundwater monitoring wells GW-3, GW-5 and GW-6 remained consistent during this period. However, the TCE concentrations detected in all ten groundwater monitoring wells decreased as much as two orders of magnitude from the February/March 1994 groundwater sampling episode to the May 1994 groundwater sampling event. The concentrations of TCE detected in all ten groundwater monitoring wells increased as much as three orders of magnitude from the May 1994 groundwater monitoring event to the August/September 1994 groundwater sampling episode. In addition, the concentrations of TCE detected in groundwater monitoring wells decreased up to two orders of magnitude from the August/September 1994 groundwater monitoring event to the November/December 1994 groundwater sampling episode. An off-site source together with pumping of the production wells in the North Hollywood and Rinaldi-Toluca well fields likely accounts for the fluctuation in TCE concentrations detected in groundwater monitoring wells at the Site.

2.0 INTRODUCTION

On behalf of AlliedSignal Aerospace, *SECOR International Incorporated (SECOR)* has prepared this report presenting the results of the third and fourth quarter 1994 groundwater monitoring events conducted by *SECOR* at the AlliedSignal Aerospace property located at 11600 Sherman Way in North Hollywood, California (Figure 1). Groundwater sampling for the third quarter was conducted in August 1994, and groundwater sampling for the fourth quarter was conducted in December 1994. Groundwater monitoring and sampling of groundwater monitoring wells GW-1 through GW-6 at the Site and groundwater monitoring wells GW-7 through GW-10 at the adjacent Kaiser property (Figure 2) were conducted in accordance with the RWQCB WIP guidelines. Groundwater monitoring well GW-1 was damaged as a result of activities conducted as a part of remediation of shallow soil impacted by TPH and was not sampled in the fourth quarter groundwater monitoring episode.

Groundwater monitoring activities commenced at the Site with the installation of a two-level groundwater monitoring well, Well W-1, in 1987. Well W-1 was located near the southwestern corner of the AlliedSignal property (Figure 2). After two monitoring events were conducted, the groundwater monitoring well was abandoned at the request of the RWQCB by *SECOR* in June 1993 in accordance with a work plan approved by the RWQCB.

Quarterly groundwater monitoring at the Site has been conducted regularly since the third quarter of 1991. Historical groundwater elevations and analytical results from the most recent and previous groundwater monitoring events are presented in Tables 6 through 27 and Figures 12 through 71.

3.0 GROUNDWATER LEVEL MEASUREMENTS

During the third quarter of 1994, depth to groundwater was measured in the six on-site groundwater monitoring wells and the four off-site groundwater monitoring wells on July 19, August 15, and September 7, 1994. During the fourth quarter of 1994, depth to groundwater was measured in the ten groundwater monitoring wells on October 11, November 21 and December 8, 1994. The groundwater level measurements were taken using an Environmental Instruments Company (EI) water level meter according to the protocol described in Appendix A. Groundwater level data obtained during the third and fourth quarters of 1994 are presented in Table 1.

The data indicate that groundwater levels beneath the Site have decreased between 20.69 feet (GW-5) and 26.25 feet (GW-9) during the period between July 19 and November 21, 1994. Between November 21 and December 8, 1994, groundwater elevations increased between 0.82 feet (GW-6) and 3.29 feet (GW-9) beneath the Site. Historic groundwater elevations are presented in Table 6.

The groundwater level measurements obtained on July 19, 1994 indicate that the instantaneous groundwater flow direction was southeasterly at a gradient of 0.0023 beneath the site and the Kaiser property. Based on groundwater level measurements obtained August 15, 1994, the instantaneous groundwater flow direction was southerly at a gradient of 0.0096 beneath the eastern portion of the Site and southwesterly at a gradient of 0.0078 beneath the central and western portions of the Site and the Kaiser property. The groundwater level measurements obtained on September 7, 1994 indicate that the instantaneous groundwater flow direction was southwesterly at a gradient of 0.0071 beneath the Site and the Kaiser property. The groundwater level measurements obtained on October 11, 1994 indicate that the instantaneous groundwater flow direction was southerly at a gradient of 0.018 beneath the eastern portion of the Site and southwesterly at a gradient of 0.0078 beneath the central and western portions of the Site and the Kaiser property. Based on groundwater level measurements obtained November 21, 1994, the instantaneous groundwater flow direction was westerly at a gradient of 0.0022 beneath the Site and northwesterly beneath the Kaiser property. The groundwater level measurements obtained on December 8, 1994 indicate that the instantaneous groundwater flow direction was northwesterly at a gradient of 0.0013 beneath the Site and the Kaiser property. Figures 3 through 8 present groundwater elevation contour maps which were prepared based on the third quarter (July 19, August 15, and September 7) and fourth quarter (October 11, November 21, and December 8) 1994 groundwater surface elevations.

The groundwater flow direction beneath, and in the vicinity of the Site, appears to be strongly influenced by groundwater extraction from aeration wells and from supply wells in the North Hollywood and Rinaldi-Toluca well fields located south and northwest of the Site, respectively. Although groundwater elevation contour maps have been prepared based on groundwater elevations

measured at the Site, the groundwater flow direction(s) are not representative of average groundwater flow direction, due to the influence of regional pumping. Under transient conditions, groundwater pathlines and streamlines are not coincidental.

4.0 GROUNDWATER SAMPLING AND ANALYSIS

During the third quarter of 1994, groundwater monitoring wells GW-1 through GW-10 were purged and were sampled on August 15-16 according to the protocol described in Appendix A. Prior to purging, the bladder pump intakes in the groundwater monitoring wells were placed approximately 8 feet to 10 feet below the top of the screened intervals and the packers were inflated. This enabled the upper 8 feet to 10 feet of groundwater below the top of the screened interval in the groundwater monitoring wells to be isolated during sampling. On September 7-8, 1994 groundwater monitoring wells GW-1 through GW-10 were again purged and sampled according to the protocol described in Appendix A. These groundwater monitoring wells were sampled at their normal sampling depths.

The flow rate of the dedicated bladder pump in groundwater monitoring well GW-7 during pumping activities was abnormally low in comparison with the other dedicated bladder pumps located in the groundwater monitoring wells on the Kaiser property during the August and September 1994 groundwater sampling episodes. On November 22, 1994, groundwater monitoring well GW-2 was purged and was sampled with a dedicated bladder pump and packer system according to the protocol described in Appendix A. However, it was not possible to purge and sample other groundwater monitoring wells due to ongoing remedial activities at the Site. Groundwater monitoring wells GW-2 through GW-10 were purged with a submersible electric pump and were sampled with a Teflon™ bailer on December 8-13, 1994 according to the protocol described in Appendix A, since the bladder pumps were removed from these groundwater monitoring wells to install new dedicated pumps as well as pressure transducers and data loggers for the purpose of continuous groundwater level measurement. The dedicated bladder pumps of all groundwater monitoring wells were removed and were inspected on December 6 through 10, 1994. It was observed that the bladder of the dedicated bladder pump in groundwater monitoring well GW-7 was ruptured. Groundwater monitoring well GW-1 was damaged during excavation and remediation of shallow soil impacted by TPH by the remedial contractor. Consequently, this groundwater monitoring well was not sampled during the fourth quarter 1994 groundwater sampling episode.

All groundwater analyses were conducted by BC Analytical (BCA) in Glendale, California. For Quality Assurance/Quality Control (QA/QC) purposes, field blank and trip blank samples were collected during the third quarter on August 15-16 and September 7-8, 1994, and during the fourth quarter on December 8-13, 1994. All the groundwater samples collected from groundwater monitoring wells GW-1 through GW-10 on September 7-8, 1994 were delivered to BCA in Glendale and were analyzed for VOCs in accordance with EPA Test Method 524.2. The groundwater samples collected from groundwater monitoring well GW-2 on November 22, 1994 were delivered to BCA in Glendale and were analyzed for VOCs and Total Extractable Petroleum Hydrocarbons (TEPH) in accordance with EPA Test Method 524.2 and Modified EPA Method 8015 (8015M), respectively.

The primary groundwater samples collected from groundwater monitoring wells GW-1 through GW-10 on August 15-16, 1994 and from groundwater monitoring wells GW-2 through GW-10 on December 8-13, 1994 were delivered to BCA in Glendale and were analyzed for the following:

- Method 524.2 - Volatile Organic Compounds;
- Method 8015M - Total Extractable Petroleum Hydrocarbons;
- Method 300.0-L - Sulfates, Chlorides;
- Method 310.1-L - Alkalinity - total, Hydroxyl, Carbonate, Bicarbonate;
- Method 6010-L - Calcium, Magnesium, Potassium, Sodium;
- Method 160.1 and 180.1 - Total Dissolved Solids and Turbidity;
- Method 300.0-N - Nitrate and Nitrite;
- Method 350.1-L - Ammonia Nitrogen

All samples were immediately placed on ice following collection. Individual samples were collected in pre-cleaned, analysis-specific containers supplied by the laboratory with the appropriate preservative and clearly marked and dated for identification. Samples were securely packed and were delivered to the laboratory via courier. All groundwater samples were preserved and stored for analysis no longer than the maximum allowable holding time. The following table presents the appropriate sample containers, holding time, container size and preservative for each analytical method used in this project.

TABLE 4.1 - SAMPLING GUIDE			
ANALYSIS	HOLDING TIME	CONTAINER SIZE	PRESERVATIVE
Volatile Organics-EPA Test Method 524.2	14 days	2-40 ml (glass) with septum	Cool, No HS, HCL
Total Petroleum Hydrocarbons-EPA Test Method 8015M	14 days	4 oz (amber glass) with septum	Cool, No HS, HCL
Sulfates & Chlorides-EPA Test Method 300.0	28 days	4 oz (plastic)	Cool
Alkalinity (total, hydroxyl, carbonate, bicarbonate)-EPA Test Method 310.1	14 days	4 oz (plastic)	Cool
Calcium, Magnesium, Potassium, Sodium-EPA Test Method 6010	6 months	16 oz (plastic)	Cool, HNO ₃
Total Dissolved Solids-EPA Test Method 160.1	7 days	16 oz (plastic)	Cool

TABLE 4.1 - SAMPLING GUIDE			
ANALYSIS	HOLDING TIME	CONTAINER SIZE	PRESERVATIVE
Turbidity-EPA Test Method 180.1	2 days	4 oz (plastic)	Cool
Nitrate & Nitrite-EPA Test Method 300.0	48 hours	4 oz (plastic)	Cool
Ammonia Nitrogen-EPA Test Method 350.1	28 days	4 oz (plastic)	Cool, H ₂ SO ₄

Note: HS - Headspace
 HCL - Hydrochloric Acid
 H₂SO₄ - Sulfuric Acid
 HNO₃ - Nitric Acid

Laboratory reports and chain-of-custody documents for the third and fourth quarter 1994 groundwater monitoring events are presented in Appendices B and C, respectively.

5.0 DATA QUALITY ASSURANCE/QUALITY CONTROL

BCA, of Glendale, California, performed all the laboratory analyses for the third and fourth quarters of 1994. BCA followed the details of the data reporting process outlined in the Laboratory Requirements for Data Validation (EPA Document Control Number 9QA-07-90) and the RWQCB Quality Assurance/Quality Control Guidance Document for Well Investigation Program - San Gabriel and San Fernando Basins.

During the third quarter of 1994, field/equipment and trip blank samples were analyzed along with the groundwater samples collected on August 15-16, and September 7-8, 1994. The field/equipment blank sample was used to determine whether the sample bottle and/or the sampling procedures were contaminating the sample. Deionized water supplied by the laboratory was transported to one of the groundwater monitoring wells and a sample of the deionized water was collected using, to the extent feasible, the same sampling protocol and equipment used to obtain the groundwater samples. A trip blank sample, supplied by BCA, was used to provide a measure of the positive interferences introduced by the sample preservation, transportation, storage, and analysis.

The compounds TCE, 1,1,2,2-PCA, 1,1,2-TCA, Chloroform and Naphthalene were detected at concentrations of 9.2 micrograms per liter ($\mu\text{g}/\ell$), 1.2 $\mu\text{g}/\ell$, 1.4 $\mu\text{g}/\ell$, 1.5 $\mu\text{g}/\ell$ and 1.3 $\mu\text{g}/\ell$, respectively, in the equipment blank samples transported to the Site on August 15-16, 1994. In addition, TCE was detected at a concentration of 0.58 $\mu\text{g}/\ell$ in the trip blank samples collected on August 15-16, 1994. Several other chemical compounds including 1,1,2,2-PCA, Naphthalene and 1,1,2-TCA, which were detected in the method blank, were also detected in the equipment blank samples.

During the fourth quarter of 1994, a field/equipment and trip blank samples were analyzed along with the groundwater samples collected on December 8-13, 1994. Distilled water supplied by Arrowhead™ was transported to one of the groundwater monitoring wells and a sample of the distilled water was collected using the submersible electric pump. Trip blank samples were supplied by BCA.

The compounds TCE, 1,2,4-Trimethylbenzene (1,2,4-TMB), Benzene, Chloroform, Toluene, PCE, m- and p-Xylene isomers, o-Xylene, p-isopropyl Toluene and Tert-butylbenzene were detected at concentrations of 15 $\mu\text{g}/\ell$, 0.4 $\mu\text{g}/\ell$, 0.4 $\mu\text{g}/\ell$, 0.3 $\mu\text{g}/\ell$, 0.5 $\mu\text{g}/\ell$, 0.3 $\mu\text{g}/\ell$, 0.4 $\mu\text{g}/\ell$, 0.3 $\mu\text{g}/\ell$, 0.9 $\mu\text{g}/\ell$ and 0.3 $\mu\text{g}/\ell$, respectively, in the equipment blank samples collected at the Site on

December 12, 1994. No VOCs were detected in the trip blank samples collected on December 8-13, 1994. Arrowhead™ distilled water and the submersible pump were inadvertently used to collect the equipment blank samples instead of laboratory grade water and the Teflon™ bailer.

The presence of TCE at concentrations exceeding the MCL in equipment blank samples raises some questions about the validity of the results from samples analyzed with high dilution factors.

A case summary describing the data Quality Assurance/Quality Control (QA/QC) for the third quarter of 1994 is presented in Volume II, Appendix B and for the fourth quarter of 1994 is presented in Volume III, Appendix B.

6.0 GROUNDWATER ANALYTICAL RESULTS

6.1 INORGANIC COMPOUNDS

Chloride, Sulfate, Alkalinity, Calcium, Magnesium, Potassium, Sodium, TDS, Turbidity, Nitrate and Ammonia Nitrogen were detected in the ten groundwater monitoring wells (GW-1 through GW-10) sampled during the third quarter of 1994, and the nine monitoring wells (GW-2 through GW-10) sampled during the fourth quarter of 1994. The following table presents the low and high concentration of each inorganic constituent detected during the third and fourth quarters of 1994, and the corresponding groundwater monitoring well in which these values were measured:

TABLE 6.1 - INORGANIC COMPOUNDS DETECTED (all results in milligrams per liter, except turbidity)				
Constituent	Low (Third Quarter)	High (Third Quarter)	Low (Fourth Quarter)	High (Fourth Quarter)
Chloride	30 (GW-9)	44 (GW-6)	22 (GW-4)	42 (GW-6)
Sulfate	64 (GW-2)	130 (GW-7)	37 (GW-4)	74 (GW-6)
Total Alkalinity	220 (GW-8, GW-9)	420 (GW-10)	150 (GW-4)	250 (GW-2, GW-8)
Calcium	87 (GW-9)	180 (GW-7)	62 (GW-4)	110 (GW-3, GW-6)
Magnesium	19 (GW-8, GW-9)	39 (GW-7)	14 (GW-4)	26 (GW-6)
Potassium	4.1 (GW-8)	5.7 (GW-7)	2.6 (GW-4)	4.7 (GW-9)
Sodium	25 (GW-8)	35 (GW-7)	16 (GW-4)	29 (GW-9)
TDS	410 (GW-9)	750 (GW-7)	300 (GW-4)	510 (GW-6)
Turbidity*	<0.1 (GW-1)	14 (GW-4)	1.2 (GW-6)	130 (GW-2)
Nitrate	55 (GW-2)	100 (GW-7)	44 (GW-4)	67 (GW-6)

*: Turbidity measured in Nephelometric Turbidity Units.

Nitrite was not detected in groundwater samples from any of the ten groundwater monitoring wells collected during the third quarter of 1994 above a detection limit of 0.2 milligrams per liter (mg/l), nor was it detected above a detection limit of 0.5 mg/l in groundwater samples from any of the nine groundwater monitoring wells sampled during the fourth quarter of 1994. During the third quarter of 1994, Ammonia Nitrogen was detected at concentrations ranging from 0.10 mg/l to 0.63 mg/l

in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-7 and GW-10. Ammonia Nitrogen was not detected in the groundwater samples collected from groundwater monitoring wells GW-8 and GW-9 above a detection limit of 0.1 mg/l. In the groundwater samples collected during the fourth quarter of 1994, Ammonia Nitrogen was detected at concentrations ranging from 0.12 mg/l to 7.0 mg/l in the groundwater samples collected from groundwater monitoring wells GW-3, GW-4, GW-5, GW-8 and GW-9. Ammonia Nitrogen was not detected in the groundwater samples collected during the fourth quarter of 1994 from groundwater monitoring wells GW-2, GW-6 and GW-7 above a detection limit of 0.1 mg/l.

Sodium was detected in groundwater samples collected from all ten groundwater monitoring wells sampled during the third quarter of 1994, and from all nine groundwater monitoring wells sampled during the fourth quarter of 1994 at concentrations above the EPA Suggested No-Adverse-Response Level (SNARL) of 2 mg/l for Sodium. The turbidity levels detected in the groundwater samples collected from groundwater monitoring well GW-4 during the third quarter of 1994, and in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3, GW-4, GW-8, GW-9 and GW-10 were above the Department of Health Services (DHS) Secondary MCL of 5 NTU. The concentrations of nitrate detected in the groundwater samples collected from all ten groundwater monitoring wells during the third quarter of 1994, and from all groundwater monitoring wells sampled, except groundwater monitoring well GW-4, during the fourth quarter of 1994 were above the DHS MCL of 45 mg/l.

TDS, Turbidity and Ammonia Nitrogen were detected in the equipment blank sample collected during the third quarter of 1994 at concentrations of 1.3 mg/l, 0.81 NTU and 0.12 mg/l, respectively. Sodium was detected in the equipment blank sample collected during the fourth quarter of 1994 at a concentration of 0.72 mg/l. No other inorganic compounds were detected in the equipment blank samples above their respective detection limits.

Inorganic compound analytical results for the third and fourth quarter 1994 monitoring events are presented in Table 2. Historic inorganic compound analytical results are presented in Tables 7 through 16. Please note that nitrate values reported prior to January 1993 were quantified as N, whereas recent data reported nitrate as NO₃ in accordance with the Sampling and Analysis Plan approved by the RWQCB. Nitrate concentrations detected in groundwater samples collected during the third quarter 1994 groundwater monitoring event are shown on Figure 9 and during the fourth quarter 1994 groundwater monitoring event on Figure 10.

6.2 VOLATILE ORGANIC COMPOUNDS

6.2.1 Groundwater Sample Results (August 15-16, 1994)

TCE was detected at concentrations ranging from 1.5 $\mu\text{g}/\ell$ (GW-6) to 9,000 $\mu\text{g}/\ell$ (GW-10) in the groundwater samples collected from the ten groundwater monitoring wells. The highest concentrations of TCE were detected in on-site groundwater monitoring wells GW-1, GW-2, GW-3 and off-site groundwater monitoring well GW-10. Because of the malfunction of the dedicated pump in groundwater monitoring well GW-7, the VOC results of this well are not representative and should be considered invalid since March 1994. The concentrations of TCE detected in groundwater monitoring wells GW-1 through GW-5 and GW-7 through GW-10 were above the DHS MCL of 5 $\mu\text{g}/\ell$.

PCE was detected at concentrations ranging from 0.66 $\mu\text{g}/\ell$ (GW-8) to 7.6 $\mu\text{g}/\ell$ (GW-9) in the groundwater samples collected from groundwater monitoring wells GW-5, GW-6, GW-8 and GW-9. PCE was not detected in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-4, GW-7 and GW-10 above detection limits of 0.2 $\mu\text{g}/\ell$ to 100 $\mu\text{g}/\ell$. The concentration of PCE detected in the groundwater samples collected from groundwater monitoring well GW-9 was above the DHS MCL of 5 $\mu\text{g}/\ell$.

TEPH was not present above a detection limit of 1,000 $\mu\text{g}/\ell$ in any of the ten groundwater samples.

1,1,1-Trichloroethane (1,1,1-TCA) was detected at concentrations ranging from 0.96 $\mu\text{g}/\ell$ to 21 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-5 and GW-9. 1,1,1-TCA was not detected above detection limits of 0.2 $\mu\text{g}/\ell$ to 100 $\mu\text{g}/\ell$ in the other four groundwater samples. All 1,1,1-TCA concentrations were below the DHS MCL of 200 $\mu\text{g}/\ell$.

1,1-DCE was detected at concentrations of 22 $\mu\text{g}/\ell$, 0.79 $\mu\text{g}/\ell$ and 2.9 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-3, GW-5 and GW-9, respectively. 1,1-DCE was not detected above detection limits of 0.2 $\mu\text{g}/\ell$ to 100 $\mu\text{g}/\ell$ in the other seven groundwater samples. The concentration of 1,1-DCE detected in the groundwater sample collected from groundwater monitoring well GW-3 was above the DHS MCL of 6 $\mu\text{g}/\ell$.

Carbon Tetrachloride (CT) was detected at concentrations of 12 $\mu\text{g}/\ell$, 2.1 $\mu\text{g}/\ell$, 0.67 $\mu\text{g}/\ell$ and 0.58 $\mu\text{g}/\ell$ in the groundwater samples obtained from groundwater monitoring wells GW-2, GW-4, GW-5 and GW-8, respectively. CT was not detected in the other six groundwater samples above detection limits of 0.2 $\mu\text{g}/\ell$ to 100 $\mu\text{g}/\ell$. All the concentrations of CT detected were above the DHS MCL of 0.5 $\mu\text{g}/\ell$.

Naphthalene was detected for the first time at a concentration of 150 $\mu\text{g}/\ell$ in the groundwater

samples obtained from groundwater monitoring well GW-3. Naphthalene was not detected in the other nine groundwater samples above detection limits of 1 $\mu\text{g}/\ell$ to 500 $\mu\text{g}/\ell$.

Toluene was detected at a concentration of 0.25 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring well GW-5. Toluene was not detected above detection limits of 0.2 $\mu\text{g}/\ell$ to 100 $\mu\text{g}/\ell$ in the other nine groundwater samples.

Chloroform was detected at concentrations ranging from 0.33 $\mu\text{g}/\ell$ to 100 $\mu\text{g}/\ell$ in the groundwater samples obtained from groundwater monitoring wells GW-1 and GW-5 through GW-10. Chloroform was not detected in the other three groundwater samples above detection limits of 2 $\mu\text{g}/\ell$ to 20 $\mu\text{g}/\ell$. The concentrations of Chloroform detected were below or at the DHS MCL of 100 $\mu\text{g}/\ell$ for total trihalomethanes (THMs).

The compound cis-1,2-DCE was detected at concentrations ranging from 0.39 $\mu\text{g}/\ell$ to 170 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-1, GW-5, GW-6, GW-7, GW-8 and GW-10. Cis-1,2-DCE was not detected in the other four groundwater samples above detection limits of 1 $\mu\text{g}/\ell$ to 20 $\mu\text{g}/\ell$. The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-1 and GW-10 were above the DHS MCL of 6 $\mu\text{g}/\ell$.

No other VOCs were detected in the ten groundwater samples above detection limits of 0.2 $\mu\text{g}/\ell$ to 500 $\mu\text{g}/\ell$.

TCE, 1,1,2,2-PCA, 1,1,2-TCA, Chloroform and Naphthalene were detected at concentrations of 9.2 $\mu\text{g}/\ell$, 1.2 $\mu\text{g}/\ell$, 1.4 $\mu\text{g}/\ell$, 1.5 $\mu\text{g}/\ell$ and 1.3 $\mu\text{g}/\ell$, respectively, in the equipment blank sample. No other VOCs were detected in the equipment blank samples above their respective detection limits. TCE was detected in the trip blank sample at a concentration of 0.58 $\mu\text{g}/\ell$. No other VOCs were detected in the trip blank sample above their respective detection limits.

VOC analytical results for the groundwater samples collected from the groundwater monitoring wells during the August 15-16, 1994 groundwater monitoring event are presented in Table 3 and Figure 9. Historical VOC analytical results are presented in Tables 17 through 27. Historical groundwater surface elevations, nitrate and VOC concentrations for wells GW-1 through GW-10 are presented in Figures 12 through 71.

6.2.2 Groundwater Sample Results (September 7-8, 1994)

TCE was detected at concentrations ranging from 1.1 $\mu\text{g}/\ell$ (GW-6) to 6,400 $\mu\text{g}/\ell$ (GW-1) in the groundwater samples collected from the ten groundwater monitoring wells. The highest concentrations of TCE were detected in groundwater monitoring wells GW-1, GW-2, GW-3 and

GW-10. The concentrations of TCE detected in groundwater monitoring wells GW-1 through GW-5 and GW-7 through GW-10 were above the DHS MCL of 5 µg/l. Due to the problem associated with the dedicated bladder pump in groundwater monitoring well GW-7, VOC concentrations in groundwater monitoring well GW-7 are underestimated since March 1994 and they should be considered invalid.

PCE was detected at concentrations of 0.70 µg/l, 0.70 µg/l, 0.40 µg/l and 4.4 µg/l in the groundwater samples obtained from groundwater monitoring wells GW-5, GW-6, GW-8 and GW-9, respectively. PCE was not detected above detection limits of 1 µg/l to 100 µg/l in the other six groundwater samples. All the concentrations of PCE detected were below the DHS MCL of 5 µg/l.

The compound 1,1,1-TCA was detected at concentrations ranging from 0.70 µg/l to 140 µg/l in the groundwater samples obtained from groundwater monitoring wells GW-1 through GW-5 and GW-9. 1,1,1-TCA was not detected above detection limits of 0.2 µg/l to 100 µg/l in the other four groundwater samples. All the concentrations of 1,1,1-TCA detected were below the DHS MCL of 200 µg/l.

The compound 1,1-DCA was detected at a concentration of 51 µg/l in the groundwater samples collected from groundwater monitoring well GW-3. 1,1-DCA was not detected in the other nine groundwater samples above detection limits of 0.2 µg/l to 100 µg/l. The concentration of 1,1-DCA detected in the groundwater samples obtained from groundwater monitoring well GW-3 was above the DHS MCL of 5 µg/l.

1,1-DCE was detected at concentrations ranging from 0.90 µg/l to 59 µg/l in the groundwater samples obtained from groundwater monitoring wells GW-2 through GW-5 and GW-9. 1,1-DCE was not detected in the other five groundwater samples above detection limits of 0.2 µg/l to 100 µg/l. The concentrations of 1,1-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-2, GW-3 and GW-4 were above the DHS MCL of 6 µg/l.

The compound CT was detected at concentrations ranging from 0.40 µg/l to 14 µg/l in the groundwater samples collected from groundwater monitoring wells GW-2, GW-5, GW-6, GW-8 and GW-9. CT was not detected above detection limits of 0.2 µg/l to 100 µg/l in the other five groundwater samples. The concentrations of CT detected in the groundwater samples obtained from groundwater monitoring wells GW-2, GW-5, GW-8 and GW-9 were at or above the DHS MCL of 0.5 µg/l.

Chloroform was detected at concentrations ranging from 0.30 µg/l to 2.2 µg/l in the groundwater samples obtained from groundwater monitoring wells GW-5 through GW-9. Chloroform was not detected in the other five groundwater samples above detection limits of 10 µg/l to 100 µg/l. The concentrations of chloroform detected were below the DHS MCL of 100 µg/l for THMs.

The compound cis-1,2-DCE was detected at concentrations ranging from 0.30 $\mu\text{g}/\ell$ to 160 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-1, GW-3, GW-5, GW-6, GW-7, GW-8 and GW-10. Cis-1,2-DCE was not detected above detection limits of 0.2 $\mu\text{g}/\ell$ to 10 $\mu\text{g}/\ell$ in the other three groundwater samples. The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-1, GW-3 and GW-10 were above the DHS MCL of 6.0 $\mu\text{g}/\ell$.

No other VOCs were detected in the ten groundwater samples above detection limits of 0.2 $\mu\text{g}/\ell$ to 500 $\mu\text{g}/\ell$.

Chloroform and Freon 113 were detected at concentrations of 0.80 $\mu\text{g}/\ell$ and 0.30 $\mu\text{g}/\ell$, respectively, in the equipment blank sample. No other VOCs were detected in the equipment blank sample above their respective detection limits. No VOCs were detected in the trip blank sample above their respective detection limits.

VOC analytical results for the groundwater samples collected from the groundwater monitoring wells during the September 7-8, 1994 groundwater monitoring event are presented in Table 4 and Figure 11.

6.2.3 Groundwater Sample Results (November 22, 1994)

On November 22, 1994, *SECOR* attempted to collect groundwater samples from on-site groundwater monitoring wells, however, after collection of groundwater samples from groundwater monitoring well GW-2, groundwater sampling was postponed to a later date in December 1994 due to ongoing TPH soil remediation at the Site. The compounds 1,1,1-TCA, 1,1-DCA, 1,1-DCE, CT, Chloroform, TCE, PCE and cis-1,2-DCE were detected in the groundwater samples collected from groundwater monitoring well GW-2 at concentrations of 1.5 $\mu\text{g}/\ell$, 0.5 $\mu\text{g}/\ell$, 1.3 $\mu\text{g}/\ell$, 1.6 $\mu\text{g}/\ell$, 0.7 $\mu\text{g}/\ell$, 43 $\mu\text{g}/\ell$, 2.1 $\mu\text{g}/\ell$ and 1.7 $\mu\text{g}/\ell$, respectively. No other VOCs were detected in the groundwater samples collected from groundwater monitoring well GW-2 above their respective detection limits. TEPH was not present above a detection limit of 1,000 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring well GW-2. The concentration of CT detected was above the DHS MCL of 0.5 $\mu\text{g}/\ell$. The concentration of TCE detected was above the DHS MCL of 5 $\mu\text{g}/\ell$.

VOC analytical results for the groundwater samples collected from groundwater monitoring well GW-2 during the November 22, 1994 groundwater monitoring event are presented in Table 5.

6.2.4 Groundwater Sample Results (December 8-13, 1994)

TCE was detected at concentrations ranging from 0.7 $\mu\text{g}/\ell$ (GW-6) to 440 $\mu\text{g}/\ell$ (GW-7) in the

groundwater samples collected from the nine groundwater monitoring wells (GW-2 through GW-10). The highest concentrations of TCE were detected in wells GW-7 and GW-10 (at 440 $\mu\text{g}/\ell$ and 360 $\mu\text{g}/\ell$, respectively) located within the southeast portion of the Kaiser property. This represents a ten fold decrease in concentration compared to the TCE concentration detected in the groundwater samples obtained from groundwater monitoring well GW-10 during the previous groundwater sampling episode. The correlation of TCE concentrations in groundwater monitoring wells GW-7 and GW-10 during this sampling period together with the historical trends confirms that TCE concentrations in groundwater samples collected from groundwater monitoring well GW-7 from March 1994 to September 1994 should be considered underestimated and invalid. The concentrations of TCE detected in groundwater monitoring wells GW-2 through GW-4 and GW-7 through GW-10 were above the DHS MCL of 5 $\mu\text{g}/\ell$.

PCE was detected at concentrations ranging from 0.8 $\mu\text{g}/\ell$ to 2.9 $\mu\text{g}/\ell$ in the groundwater samples obtained from groundwater monitoring wells GW-2 through GW-6, GW-8 and GW-9. PCE was not detected above a detection limit of 5 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-7 and GW-10. All the concentrations of PCE detected were below the DHS MCL of 5 $\mu\text{g}/\ell$.

The compound 1,1,1-TCA was detected at concentrations ranging from 0.5 $\mu\text{g}/\ell$ to 8.1 $\mu\text{g}/\ell$ in the groundwater samples obtained from groundwater monitoring wells GW-2 through GW-4, GW-7, GW-9 and GW-10. 1,1,1-TCA was not detected above a detection limit of 0.2 $\mu\text{g}/\ell$ in the other three groundwater samples. All the concentrations of 1,1,1-TCA detected were below the DHS MCL of 200 $\mu\text{g}/\ell$.

1,1-DCA was detected at a concentration of 0.3 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-2 and GW-8. 1,1-DCA was not detected in the other seven groundwater samples above detection limits of 0.2 $\mu\text{g}/\ell$ to 5 $\mu\text{g}/\ell$. All the concentrations of 1,1-DCA detected were below the DHS MCL of 5 $\mu\text{g}/\ell$.

1,1-DCE was detected at concentrations ranging from 0.5 $\mu\text{g}/\ell$ to 7.7 $\mu\text{g}/\ell$ in the groundwater samples obtained from groundwater monitoring wells GW-2 through GW-4, GW-7 and GW-9. 1,1-DCE was not detected in the other four groundwater samples above detection limits of 0.2 $\mu\text{g}/\ell$ to 5 $\mu\text{g}/\ell$. The concentration of 1,1-DCE detected in the groundwater samples obtained from groundwater monitoring well GW-7 was above the DHS MCL of 6 $\mu\text{g}/\ell$.

The compound CT was detected at concentrations ranging from 0.2 $\mu\text{g}/\ell$ to 0.7 $\mu\text{g}/\ell$ in the groundwater samples collected from groundwater monitoring wells GW-2, GW-4, GW-6, GW-8 and GW-9. CT was not detected above detection limits of 0.2 $\mu\text{g}/\ell$ to 5 $\mu\text{g}/\ell$ in the other four groundwater samples. The concentration of CT detected in the groundwater samples obtained from groundwater monitoring well GW-2 was above the DHS MCL of 0.5 $\mu\text{g}/\ell$.

Chloroform was detected at concentrations ranging from 0.3 µg/l to 5.4 µg/l in the groundwater samples obtained from groundwater monitoring wells GW-2, GW-4, GW-5, GW-6, GW-8, GW-9 and GW-10. Chloroform was not detected in the other two groundwater samples above detection limits of 1 µg/l to 5 µg/l. The concentrations of chloroform detected were below the DHS MCL of 100 µg/l for THMs.

Dichlorodifluoromethane (DCDFM) was detected in the groundwater samples obtained from groundwater monitoring wells GW-2 and GW-5 at concentrations of 0.5 µg/l and 2.4 µg/l, respectively. DCDFM was not detected above detection limits of 0.5 µg/l to 20 µg/l in the other seven groundwater samples. The concentration of DCDFM detected was below the SNARL of 1,000 µg/l.

Toluene and p-isopropyl toluene were detected at concentrations of 0.4 µg/l and 0.3 µg/l, respectively, in the groundwater samples collected from groundwater monitoring well GW-4. These compounds were not detected in the other eight groundwater samples above detection limits of 0.2 µg/l to 5 µg/l.

The compound cis-1,2-DCE was detected at concentrations ranging from 0.4 µg/l to 8.9 µg/l in the groundwater samples collected from groundwater monitoring wells GW-2 through GW-10. The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-7 and GW-10 were above the DHS MCL of 6.0 µg/l.

No other VOCs were detected in the nine groundwater samples above their respective detection limits.

TCE, 1,1,1-TCA, 1,2,4-Trimethylbenzene (1,2,4-TMB), Benzene, Chloroform, Toluene, PCE, m- and p-Xylenes, o-Xylenes, p-isopropyl Toluene and Tert-butylbenzene were detected at concentrations of 15 µg/l, 0.3 µg/l, 0.4 µg/l, 0.4 µg/l, 0.3 µg/l, 0.5 µg/l, 0.3 µg/l, 0.4 µg/l, 0.3 µg/l, 0.9 µg/l and 0.3 µg/l, respectively, in the equipment blank sample. No other VOCs were detected in the equipment blank sample above their respective detection limits.

EPA Test Methods 524.2 and 8015M analytical results for the groundwater samples collected from the groundwater monitoring wells during the December 8-13, 1994 groundwater monitoring event are presented in Table 5 and Figure 10.

7.0 DISCUSSION

Based on groundwater level measurements obtained between July 19 and November 21, 1994, groundwater elevations dropped between 20.69 feet (groundwater monitoring well GW-5) and 26.25 feet (groundwater monitoring well GW-9) beneath the Site. Between November 21 and December 8, 1994, groundwater elevations rose between 0.82 feet (groundwater monitoring well GW-6) and 3.29 feet (groundwater monitoring well GW-9) feet beneath the Site. Based on the groundwater level measurements obtained on July 19, 1994, the instantaneous groundwater flow direction was southeasterly beneath the Site and the Kaiser property. The groundwater level measurements collected on August 15 and October 11, 1994 indicated that the instantaneous groundwater flow direction was southerly beneath the eastern portion of the Site and southwesterly beneath the central and western portions of the Site and the Kaiser property. Based on the groundwater level measurements obtained on September 7, 1994, the instantaneous groundwater flow direction was southwesterly beneath the Site and the Kaiser property. The groundwater level measurements collected on November 21, 1994 indicated that the instantaneous groundwater flow direction was westerly and the groundwater level measurements obtained on December 8, 1994, indicated the instantaneous groundwater flow direction was northwesterly beneath the Site and the Kaiser property. Instantaneous groundwater flow beneath the Site is significantly impacted by pumping of aeration wells and supply wells located within the Rinaldi-Toluca and North Hollywood well fields.

TCE was detected at concentrations greater than the MCL in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-5 and GW-7 through GW-10 during the August 15-16 and September 7-8, 1994 groundwater sampling events, groundwater monitoring well GW-2 during the November 22, 1994 groundwater sampling event, and groundwater monitoring wells GW-2 through GW-4 and GW-7 through GW-10 during the December 8-13, 1994 groundwater sampling event. Historically, VOC concentration of groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 correlated. During a routine maintenance operation of groundwater monitoring wells on November 22, 1994, the bladder of the dedicated bladder pump in groundwater monitoring well GW-7 was observed to be ruptured. Additionally, the purging flow rate of groundwater monitoring well GW-7 was abnormally low. Consequently, the VOC concentration of groundwater samples collected from groundwater monitoring well GW-7 since March 1994 should be considered underestimated and invalid.

The PCE concentration detected in the groundwater samples collected during the August 15-16, 1994 groundwater sampling event from groundwater monitoring well GW-9 was above the MCL. The CT concentrations detected in the groundwater samples collected from groundwater monitoring wells GW-2, GW-4, GW-5 and GW-8 during the August 15-16, 1994 groundwater sampling event, groundwater monitoring wells GW-2, GW-5, GW-8, and GW-9 during the September 7-8, 1994

groundwater sampling event, groundwater monitoring well GW-2 during the November 22, 1994, and groundwater monitoring wells GW-2, GW-7, and GW-10 during the December 8-13, 1994 groundwater sampling event were above the MCL.

The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-1 and GW-10 during the August 15-16, 1994 groundwater sampling event, groundwater monitoring wells GW-1, GW-3, and GW-10 during the September 7-8, 1994 groundwater sampling event, and groundwater monitoring wells GW-7 and GW-10 during the December 8-13, 1994 groundwater sampling event were above the MCL. The concentration of 1,1-DCE detected in the groundwater sample collected from groundwater monitoring well GW-3 (August 15-16, 1994 groundwater sampling event), groundwater monitoring wells GW-2, GW-3, and GW-4 (September 7-8, 1994 groundwater sampling event) and groundwater monitoring well GW-7 (December 8-13, 1994 groundwater sampling event) was above the MCL. The concentration of 1,1-DCA detected in the groundwater sample obtained from groundwater monitoring well GW-3 during the September 7-8, 1994 groundwater sampling event was above the MCL. All other VOCs detected in the groundwater samples collected from the ten groundwater monitoring wells sampled during the August 15-16 and September 7-8, 1994 groundwater sampling events, and the nine groundwater monitoring wells sampled during the December 8-13, 1994 groundwater sampling event were present at concentrations below their respective MCLs.

Nitrate was detected at concentrations above the MCL in groundwater samples collected from all ten groundwater monitoring wells during the August 15-16, 1994 groundwater sampling episode, and in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3, and GW-5 through GW-10 during the December 8-13, 1994 groundwater sampling episode. The turbidity levels were above the secondary MCL in the groundwater sample collected from groundwater monitoring well GW-4 during the August 15-16, 1994 groundwater sampling event, and in the groundwater samples collected from groundwater monitoring wells GW-2 through GW-4 and GW-8 through GW-10 during the December 8-13, 1994 groundwater sampling event. No other inorganic constituents were detected above the primary or secondary MCLs during the August 15-16, or December 8-13, 1994 groundwater sampling episodes.

During the August 15-16, 1994 groundwater sampling episode, several VOCs, including TCE, were detected in the field/equipment blank sample. In addition, TCE was detected in the trip blank sample provided by BCA for the August 15-16, 1994 groundwater monitoring event. The sample bottles for the field/equipment blank samples, which were supplied by BCA, were filled with laboratory grade water provided by BCA. The presence of TCE at concentrations exceeding the MCL in equipment blank samples raises questions about the validity of the corresponding reported TCE concentrations. Taking into account the dilution factors, the reported TCE concentrations in diluted groundwater samples may be significantly exaggerated. Because the VOC concentrations in groundwater monitoring wells GW-7 and GW-10 did not correlate, groundwater samples were

collected from groundwater monitoring wells GW-1 through GW-10 on September 8, 1994, and were analyzed for VOCs.

Several VOCs, including TCE, were detected in the equipment blank sample collected during the December 8-13, 1994 groundwater sampling episode. The sample bottles for the field/equipment blank samples, which were supplied by BCA, were filled with Arrowhead™ distilled water using a submersible pump. Detection of TCE in the equipment blank sample raises concerns that the reported TCE concentrations in diluted groundwater samples may be exaggerated.

In general, the concentrations of VOCs detected in groundwater samples from all ten groundwater monitoring wells increased from the May 1994 groundwater sampling event to the August/September 1994 groundwater sampling episode. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-1 through GW-10 increased from 3.5 µg/l, 9.6 µg/l, 6.0 µg/l, 0.63 µg/l, 0.77 µg/l, 0.95 µg/l, 0.36 µg/l, 1.2 µg/l, 3.4 µg/l and 12 µg/l, respectively, during the May 1994 groundwater sampling event to 1,800 µg/l, 830 µg/l, 1,200 µg/l, 130 µg/l, 6.4 µg/l, 1.5 µg/l, 22 µg/l, 28 µg/l, 110 µg/l and 9,000 µg/l, respectively, during the August 1994 groundwater sampling event and 6,400 µg/l, 810 µg/l, 4,300 µg/l, 100 µg/l, 6.0 µg/l, 1.1 µg/l, 48 µg/l, 32 µg/l, 75 µg/l and 4,700 µg/l during the September 1994 groundwater monitoring episode.

Between the August/September 1994 and the December 1994 groundwater sampling episodes, the concentrations of VOCs decreased in the groundwater samples collected. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-2 through GW-6 and GW-8 through GW-10 decreased from 810 µg/l, 4,300 µg/l, 100 µg/l, 6.0 µg/l, 1.1 µg/l, 32 µg/l, 75 µg/l and 4,700 µg/l, respectively, during the September 1994 groundwater sampling event to 13 µg/l, 36 µg/l, 12 µg/l, 1.6 µg/l, 0.7 µg/l, 8.6 µg/l, 9.4 µg/l and 360 µg/l, respectively, during the December 1994 groundwater monitoring episode, whereas the TCE concentration increased in the groundwater samples collected from groundwater monitoring well GW-7 from 48 µg/l to 440 µg/l over the same period. However, the VOC concentration of groundwater samples collected from groundwater monitoring well GW-7 during August and September 1994 groundwater sampling episodes are underestimated because of the ruptured bladder of its dedicated bladder pump. The pumping of the production wells in the Tujunga and Rinaldi-Toluca well fields together with an off-site source likely accounts for the fluctuation in TCE concentrations detected in groundwater samples collected from certain groundwater monitoring wells at the Site.

8.0 LIMITATIONS

SECOR has prepared this report for the exclusive use of AlliedSignal Aerospace, their representatives, and other authorized parties. The findings and conclusions presented herein are based primarily upon the laboratory analyses of groundwater samples collected during this study. All work has been conducted in accordance with generally accepted practices in the fields of environmental engineering, geology, and hydrogeology that exist in Los Angeles County at this time. No other warranty, either expressed or implied, is made.

TABLE 1 - GROUNDWATER SURFACE ELEVATIONS
(all elevations in feet above mean sea level)

Well ID	Wellhead Elevation	Depth to Water (07/19/94)	Groundwater Elevation (07/19/94)	Depth to Water (08/15/94)	Groundwater Elevation (08/15/94)	Depth to Water (09/07/94)	Groundwater Elevation (09/07/94)	Depth to Water (10/11/94)	Groundwater Elevation (10/11/94)	Depth to Water (11/21/94)	Groundwater Elevation (11/21/94)	Depth to Water (12/08/94)	Groundwater Elevation (12/08/94)
GW-1	734.39	217.49	516.90	225.04	509.35	231.57	502.82	238.62	495.77	240.76	493.63	238.27	496.12
GW-2	737.82	220.00	517.82	227.19	510.63	233.74	504.08	241.40	496.42	244.21	493.61	241.56	496.26
GW-3	735.53	218.12	517.41	226.14	509.39	232.96	502.57	240.34	495.19	241.84	493.69	239.12	496.41
GW-4	734.63	218.26	516.37	224.84	509.79	230.47	504.16	237.02	497.61	240.64	493.99	238.13	496.50
GW-5	735.72	219.28	516.44	226.58	509.14	232.53	503.19	239.22	496.50	239.97	495.75	237.96	497.76
GW-6	739.92	223.30	516.62	226.31	513.61	231.40	508.52	237.94	501.98	244.69	495.23	243.87	496.05
GW-7	734.48	217.10	517.38	226.09	508.39	233.06	501.42	240.28	494.20	240.64	493.84	237.94	496.54
GW-8	741.80	223.30	518.50	229.46	512.34	238.82	502.98	246.72	495.08	248.93	492.87	245.93	495.87
GW-9	740.55	221.90	518.65	231.50	509.05	239.06	501.49	246.88	493.67	248.15	492.40	244.86	495.69
GW-10	737.44	219.64	517.80	231.40	506.04	236.70	500.74	243.98	493.46	243.86	493.58	240.98	496.46

TABLE 2 - INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS

(all results in milligrams per liter, except turbidity)

Organic Constituent	GW-1 (08/16/94)	GW-2 (08/16/94)	GW-3 (08/16/94)	GW-4 (08/16/94)	GW-5 (08/16/94)	GW-6 (08/16/94)	GW-7 (08/15/94)	GW-8 (08/15/94)	GW-9 (08/16/94)	GW-10 (08/15/94)	Equipment Blank (08/16/94)
Chloride	40	36	38	40	40	44	49	40	30	32	<0.05
Sulfate	72	64	67	86	70	73	130	69	69	72	<0.1
Carbonate Alkalinity	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	250	290	260	240	240	260	330	220	220	420	<10
Hydroxide Alkalinity	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	250	290	260	240	240	260	330	220	220	420	<10
Calcium	100	110	100	100	100	110	180	90	87	140	<0.5
Magnesium	24	25	24	24	24	27	39	19	19	30	<0.1
Potassium	4.8	4.7	4.9	4.7	4.3	4.7	5.7	4.1	4.3	5.1	<0.5
Sodium	29	26	27	27	27	28	35	25	28	30	1.3
TDS	500	490	500	490	490	530	750	450	410	640	5
Turbidity	<0.1	4.5	3.4	14	0.88	0.71	0.30	0.18	0.15	0.41	<0.1
Nitrate	75	55	74	75	77	78	100	71	65	58	<0.1
Nitrite	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ammonia Nitrogen	0.36	0.63	0.61	0.60	0.22	0.10	0.28	<0.1	<0.1	0.18	0.12

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<0.1: Less than the detection limit.

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TABLE 3 - INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS

(all results in milligrams per liter, except turbidity)

Organic Constituent	GW-2 (12/12/94)	GW-3 (12/13/94)	GW-4 (12/12/94)	GW-5 (12/10/94)	GW-6 (12/08/94)	GW-7 (12/11/94)	GW-8 (12/10/94)	GW-9 (12/10/94)	GW-10 (12/11/94)	Equipment Blank (12/12/94)
Chloride	35	35	22	30	42	31	34	30	32	<0.1
Sulfate	58	57	37	59	74	58	59	58	57	<0.1
Carbonate Alkalinity	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	250	240	150	220	240	220	250	220	240	<10
Hydroxide Alkalinity	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	250	240	150	220	240	220	250	220	240	<10
Calcium	95	110	62	94	110	94	100	96	98	<0.5
Magnesium	21	22	14	21	26	21	22	21	22	<0.1
Potassium	3.9	4.3	2.6	3.8	4.3	4.0	4.5	4.7	4.4	<0.5
Sodium	23	25	16	24	26	26	27	29	28	0.72
TDS	500	490	300	450	510	460	490	440	460	<10
Turbidity	130	30	58	3.2	1.2	1.5	12	17	78	<0.1
Nitrate	65	64	44	56	67	61	58	58	64	<0.1
Nitrite	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
Ammonia Nitrogen	<0.1	0.12	0.15	7.0	<0.1	<0.1	0.17	0.12	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<0.1: Less than the detection limit.

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (August 15-16, 1994)

EPA Method 524.2

(all results in micrograms per liter)

Organic Constituent	GW-1 (08/16/94)	GW-2 (08/16/94)	GW-3 (08/16/94)	GW-4 (08/16/94)	GW-5 (08/16/94)	GW-6 (08/16/94)	GW-7* (08/16/94)	GW-8 (08/16/94)	GW-9 (08/16/94)	GW-10 (08/16/94)	Equipment Blank (08/16/94)	Trip Blank (08/16/94)
TPH	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
1,1,1,2-Tetrachloroethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,1,1-Trichloroethane	20	10	21	11	0.96	<0.2	<1	<0.2	3.1	<100	<1	<0.2
1,1,2,2-Tetrachloroethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	1.2	<0.2
1,1,2-Trichloroethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	1.4	<0.2
1,1-Dichloroethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,1-Dichloroethene	<20	<10	22	<2	0.79	<0.2	<1	<0.2	2.9	<100	<1	<0.2
1,1-Dichloropropene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,2,3-Trichlorobenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,2,3-Trichloropropane	<50	<30	<50	<5	<0.5	<0.5	<3	<0.5	<3	<300	<3	<0.5
1,2,4-Trichlorobenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,2,4-Trichloropropane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,2-Dibromo-3-chloropropane	<50	<30	<50	<5	<0.5	<0.5	<3	<0.5	<3	<300	<3	<0.5
1,2-Dibromoethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,2-Dichloroethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,2-Dichlorobenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,2-Dichloropropane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,3,5-Trimethylbenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,3-Dichlorobenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,3-Dichloropropane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
1,4-Dichlorobenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
2,2-Dichloropropane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
2-Chlorotoluene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
4-Chlorotoluene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Bromobenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2

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TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (August 15-16, 1994)
EPA Method 824.2
(all results in micrograms per liter)

Organic Constituent	GW-1 (08/16/94)	GW-2 (08/16/94)	GW-3 (08/16/94)	GW-4 (08/16/94)	GW-5 (08/16/94)	GW-6 (08/16/94)	GW-7* (08/15/94)	GW-8 (08/15/94)	GW-9 (08/16/94)	GW-10 (08/16/94)	Equipment Blank (08/16/94)	Trip Blank (08/16/94)
Bromochloromethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Bromodichloromethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Bromomethane	<50	<30	<50	<5	<0.5	<0.5	<3	<0.5	<3	<300	<3	<0.5
Benzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Bromoform	<50	<30	<50	<5	<0.5	<0.5	<3	<0.5	<3	<300	<3	<0.5
Chlorobenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Carbon Tetrachloride	<20	12	<20	2.1	0.67	<0.2	<1	0.38	<1	<100	<1	<0.2
Chloroethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Chloroform	22	<10	<20	<2	0.30	0.33	3.1	0.51	1.4	100	1.5	<0.2
Chloromethane	<50	<30	<50	<5	<0.5	<0.5	<3	<0.5	<3	<300	<3	<0.5
Dibromochloromethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Dibromomethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Dichlorodifluoromethane	<50	<30	<50	<5	<0.5	<0.5	<3	<0.5	<3	<300	<3	<0.5
Ethylbenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Freon 113	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Hexachlorobutadiene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Isopropylbenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Methylene Chloride	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
N-Butylbenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
N-Propylbenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Naphthalene	<100	<50	150	<10	<1	<1	<5	<1	<5	<500	1.3	<1
Styrene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Trichloroethene	1,800	830	1,200	130	6.4	1.5	22*	28	110	9,000	9.2	0.58
Trichlorofluoromethane	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
Toluene	<20	<10	<20	<2	0.25	<0.2	<1	<0.2	<1	<100	<1	<0.2

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (August 15-16, 1994)
EPA Method 524.2
(all results in micrograms per liter)

Organic Constituent	GW-1 (08/15/94)	GW-2 (08/16/94)	GW-3 (08/16/94)	GW-4 (08/16/94)	GW-5 (08/16/94)	GW-6 (08/16/94)	GW-7* (08/15/94)	GW-8 (08/15/94)	GW-9 (08/16/94)	GW-10 (08/15/94)	Equipment Blank (08/16/94)	Top Blank (08/16/94)
Tetrachloroethene	<20	<10	<20	<2	0.98	0.81	<1	0.66	7.6	<100	<1	<0.2
Vinyl Chloride	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
cis-1,2-Dichloroethene	36	<10	<20	<2	0.51	0.60	2.1	0.39	<1	170	<1	<0.2
cis-1,3-Dichloropropene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
m- & p-xylenes	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
o-xylene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
p-Isopropyl toluene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
sec-Butylbenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
trans-1,2-Dichloroethene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
trans-1,3-Dichloropropene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2
tert-Butylbenzene	<20	<10	<20	<2	<0.2	<0.2	<1	<0.2	<1	<100	<1	<0.2

TPH: Total Petroleum Hydrocarbons.

<0.2 Less than the detection limit of 0.2.

*: The results are underestimates because of problems associated with the ruptured bladder of the dedicated pump.

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (September 7-8, 1994)

EPA Method 524.3

(all results in micrograms per liter)

Organic Constituent	GW-1 (09/08/94)	GW-2 (09/08/94)	GW-3 (09/08/94)	GW-4 (09/08/94)	GW-5 (09/08/94)	GW-6 (09/08/94)	GW-7 (09/07/94)	GW-8 (09/07/94)	GW-9 (09/07/94)	GW-10 (09/07/94)	Equipment Blank (09/08/94)	Trip Blank (09/08/94)
1,1,1,2-Tetrachloroethane	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,1,1,1-Trichloroethane	140	12	83	8.0	0.70	<0.2	<1	<0.2	2.4	<100	<0.2	<0.2
1,1,1,2-Tetrachloroethane	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,1,1,2-Trichloroethane	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,1-Dichloroethane	<100	<10	51	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,1-Dichloroethene	<100	17	59	8.5	0.90	<0.2	<1	<0.2	2.9	<100	<0.2	<0.2
1,1-Dichloropropene	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,2,3-Trichlorobenzene	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,2,3-Trichloropropane	<300	<30	<200	<5	<0.5	<0.5	<3	<0.5	<3	<300	<0.5	<0.5
1,2,4-Trichlorobenzene	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,2,4-Trichloropropane	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<300	<30	<200	<5	<0.5	<0.5	<3	<0.5	<3	<300	<0.5	<0.5
1,2-Dibromochloroethane	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,2-Dichloroethane	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,2-Dichlorobenzene	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,2-Dichloropropane	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,3,5-Trimethylbenzene	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,3-Dichlorobenzene	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,3-Dichloropropane	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
1,4-Dichlorobenzene	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
2,2-Dichloropropane	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
2-Chlorotoluene	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
4-Chlorotoluene	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
Bromobenzene	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2
Bromochloromethane	<100	<10	<50	<2	<0.2	<0.2	<1	<0.2	<1	<100	<0.2	<0.2

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS (September 74, 1994)

EPA Method 514.1

(all results in micrograms per liter)

Organic Constituent	GW-1 (09/08/94)	GW-2 (09/08/94)	GW-3 (09/08/94)	GW-4 (09/08/94)	GW-5 (09/08/94)	GW-6 (09/08/94)	GW-7* (09/07/94)	GW-8 (09/07/94)	GW-9 (09/07/94)	GW-10 (09/07/94)	Equipment Blank (09/08/94)	Trip Blank (09/08/94)
Bromodichloromethane	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Bromomethane	< 300	< 30	< 200	< 5	< 0.5	< 0.5	< 3	< 0.5	< 3	< 300	< 0.5	< 0.5
Benzene	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Bromoform	< 300	< 30	< 200	< 5	< 0.5	< 0.5	< 3	< 0.5	< 3	< 300	< 0.5	< 0.5
Chlorobenzene	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Carbon Tetrachloride	< 100	14	< 50	< 2	0.50	0.40	< 1	1.4	1.8	< 100	< 0.2	< 0.2
Chloroethane	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Chloroform	< 100	< 10	< 50	2.1	0.50	0.30	2.2	0.60	1.1	< 100	0.80	< 0.2
Chloromethane	< 300	< 30	< 200	< 5	< 0.5	< 0.5	< 3	< 0.5	< 3	< 300	< 0.5	< 0.5
Dibromochloromethane	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Dibromomethane	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Dichlorodifluoromethane	< 300	< 30	< 200	< 5	< 0.5	< 0.5	< 3	< 0.5	< 3	< 300	< 0.5	< 0.5
Ethylbenzene	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Freon 113	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	0.30	< 0.2
Hexachlorobutadiene	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Isopropylbenzene	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Methylene Chloride	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
N-Butylbenzene	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
N-Propylbenzene	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Naphthalene	< 500	< 50	< 300	< 10	< 1	< 1	< 5	< 1	< 5	< 500	< 1	< 1
Styrene	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Trichloroethene	6,400	810	4,300	100	6.0	1.1	48*	32	75	4,700	< 0.2	< 0.2
Trichlorofluoromethane	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Toluene	< 100	< 10	< 50	< 2	< 0.2	< 0.2	< 1	< 0.2	< 1	< 100	< 0.2	< 0.2
Tetrachloroethene	< 100	< 10	< 50	< 2	0.70	0.70	< 1	0.40	4.4	< 100	< 0.2	< 0.2

TABLE 10 - HISTORIC INORGANIC COMPOUND CONCENTRATIONS AND WATER ANALYTICAL RESULTS FOR CW-4

(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date													
	08/19/91	01/15/92	03/18/92	05/19/92	08/10/92	01/16/93	03/03/93	06/02/93	08/19/93	11/20/93	02/15/94	05/17/94	08/16/94	12/12/94
Chloride	37.4	33.8/24.1	33.7	34.8	39.1/39.2	28	27	23	24	26	31	30	40	22
Sulfate	66.9	61.5/61.5	55.0	63.9	63.6/74.2	60	47	45	62	52	55	57	86	37
Carbonate Alkalinity	ND	ND/ND	ND	ND	ND/ND	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	246	216/212	225	227	240/228	220	210	190	200	210	220	240	240	150
Hydroxide Alkalinity	ND	ND/ND	ND	ND	ND/ND	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	246	216/212	225	227	240/228	220	210	190	200	210	220	240	240	150
Calcium	99.4	89.9/89.7	101	96.4	101/102	100	95	86	87	80	110	91	100	62
Magnesium	23.3	20.6/20.5	23.0	22.4	23.8/24.1	22	20	19	18	17	23	20	24	14
Potassium	ND	ND/ND	ND	ND	ND/ND	3.9	3.8	3.7	3.6	3.3	3.9	3.8	4.7	2.6
Sodium	23.0	23.4/23.3	23.2	23.9	36.0/44.2	26	24	24	23	23	25	25	27	16
TDS	495	481/481	453	485	625/535	490	440	400	400	500	440	420	490	300
Turbidity	0.40	0.40/0.50	0.80	0.20	0.2/0.1	3.1	8.5	0.58	5.2	1.1	39	6.0	14	58
Nitrate	18.1	12.6/12.5	14.8	17.5	18.6/18.4	52	64	41	52	51	64	64	75	44
Nitrite	ND	4.3/4.2	ND	ND	ND/ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	<0.2	<0.5
Ammonia Nitrogen	1.0	ND/ND	0.23	ND	ND/ND	<0.1	0.11	<0.1	<0.1	<0.1	0.11	<0.1	0.60	0.15

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

TABLE 11 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-5
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date														
	08/20/91	09/17/91	01/15/92	03/18/92	05/20/92	08/12/92	01/16/93	03/02/93	06/02/93	08/18/93	11/30/93	02/18/94	05/17/94	08/16/94	12/10/94
Chloride	38.2	37.4	30.3	27.8	40.8	38.3	33	24	26	22	26	26	28	40	30
Sulfate	67.5	65.7	66.6	55.6	68.2	62.5	58	54	51	60	56	56	63	70	59
Carbonate Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	234	232	196	205	277	243	190	190	190	200	220	210	200	240	220
Hydroxide Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	234	232	196	205	277	243	190	190	190	200	220	210	200	240	220
Calcium	94.6	106	86.9	88.3	100	108	87	81	77	85	83	96	90	100	94
Magnesium	22.8	25.2	20.1	20.2	23.7	24.3	19	17	17	18	18	20	19	24	21
Potassium	ND	ND	ND	ND	ND	ND	3.4	3.2	3.0	3.3	3.2	3.4	3.4	4.3	3.8
Sodium	22.4	24.7	22.6	21.9	24.3	22.8	23	21	21	22	23	23	22	27	24
TDS	493	519	456	397	485	720	420	370	400	400	450	390	430	490	450
Turbidity	0.50	ND	0.90	1.9	0.20	0.40	11	1.2	0.58	1.3	20	28	3.9	0.88	3.2
Nitrate	18.0	18.2	10.4	11.7	18.8	17.9	77	50	44	49	45	50	50	77	56
Nitrite	ND	ND	4.0	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	<0.2	<0.5
Ammonia Nitrogen	0.55	0.11	ND	0.34	0.11	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.21	<0.1	0.22	7.0

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 12 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-4

(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date													
	08/22/91	09/19/91	01/16/92	03/17/92	05/20/92	08/11/92	01/14/93	03/03/93	06/01/93	08/18/93	11/30/93	02/18/94	05/16/94	08/16/94
Chloride	41.3	36.2	38.2	32.7	40.3	40.1	35	31	36	30	32	36	35	44
Sulfate	65.2	70.4	68.8	54.2	67.5	65.7	60	52	54	60	54	57	59	73
Carbonate Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	ND	236	288	244	253	243	270	250	240	230	260	240	220	260
Hydroxide Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	ND	236	288	244	253	243	270	250	240	230	260	240	220	260
Calcium	101	103	101	105	105	103	110	110	110	98	97	110	110	110
Magnesium	24.3	26.3	23.6	24.4	25.1	25.4	24	24	24	21	21	25	24	27
Potassium	ND	5.1	ND	ND	ND	ND	4.2	4.0	4.0	3.6	3.6	3.9	4.3	4.7
Sodium	22.9	24.0	23.6	25.0	25.6	27.7	26	26	27	24	23	26	25	28
TDS	513	589	553	457	491	605	470	490	500	480	700	460	490	530
Turbidity	ND	96	2.2	0.50	0.20	0.4	9.5	33	2.0	1.4	34	56	37	0.71
Nitrate	19.6	19.1	13.1	13.9	18.7	19.1	74	65	71	75	63	69	69	78
Nitrite	ND	ND	4.9	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	<0.2
Ammonia Nitrogen	0.23	ND	ND	1.5	ND	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.10	<0.1	0.10

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

TABLE 13 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date					
	09/08/93	11/29/93	02/16/94	05/18/94	08/15/94	12/11/94
Chloride	27	27	27	26	49	31
Sulfate	57	53	66	62	130	58
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1
Bicarbonate Alkalinity	180	190	260	190	330	220
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1
Total Alkalinity	180	190	260	190	330	220
Calcium	96	72	120	80	180	94
Magnesium	21	18	26	17	39	21
Potassium	4	3.7	4.2	3.6	5.7	4.0
Sodium	29	26	30	27	35	26
TDS	420	860	550	350	750	460
Turbidity	7.0	<1.0	7.8	5.1	0.30	1.5
Nitrate	63	49	71	44	100	64
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5
Ammonia Nitrogen	<0.02	<1.0	0.12	<0.1	0.28	<0.1

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 14 - HISTORIC INORGANIC COMPOUND
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date					
	09/09/93	11/29/93	02/16/94	05/17/94	08/15/94	12/10/94
Chloride	34	35	34	38	40	34
Sulfate	60	56	55	62	69	59
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1
Bicarbonate Alkalinity	230	240	240	240	220	250
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1
Total Alkalinity	230	240	240	240	220	250
Calcium	110	92	110	98	90	100
Magnesium	25	23	24	21	19	22
Potassium	4.9	4.4	4.5	3.9	4.1	4.5
Sodium	29	28	28	25	25	27
TDS	500	510	500	510	450	490
Turbidity	5.0	<1.0	23	8.2	0.18	12
Nitrate	74	56	69	76	71	58
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5
Ammonia Nitrogen	0.03	<1.0	<0.1	<0.1	<0.1	0.17

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 15 - HISTORIC INORGANIC COMPOUND
(all results in milligrams per liter, except turbidity)

TABLE 15 - HISTORIC INORGANIC COMPOUND ANALYTICAL RESULTS FOR GW-9 (all results in milligrams per liter, except turbidity)						
Inorganic Constituent	Sample Date					
	09/08/93	11/29/93	02/16/94	05/17/94	08/16/94	12/10/94
Chloride	26	21	31	22	30	30
Sulfate	1,000	59	58	66	69	58
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1
Bicarbonate Alkalinity	180	190	180	190	220	220
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1
Total Alkalinity	180	190	180	190	220	220
Calcium	86	64	82	85	87	96
Magnesium	20	17	18	18	19	21
Potassium	4.4	3.9	3.8	4.1	4.3	4.7
Sodium	29	25	26	26	28	29
TDS	3,400	420	410	360	410	440
Turbidity	30	<1.0	1.9	2.9	0.15	17
Nitrate	45	30	41	32	65	58
Nitrite	ND	<1.0	<0.1	<0.2	<0.2	<0.5
Ammonia Nitrogen	<0.02	<1.0	0.11	<0.1	<0.1	0.12

Turbidity measured in Nephelometric Turbidity Units.
TDS:
Total Dissolved Solids.
<1:
Less than the detection limit of 1.
ND:
Not Detected

TABLE 16 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR QW-10
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date						
	09/09/93	11/29/93	02/16/94	05/18/94	08/15/94	12/11/94	
Chloride	21	20	22	20	32	32	
Sulfate	63	58	64	64	72	57	
Carbonate Alkalinity	<20	<2	<1	<1	<1	<1	
Bicarbonate Alkalinity	190	200	260	190	420	240	
Hydroxide Alkalinity	<20	<2	<1	<1	<1	<1	
Total Alkalinity	190	200	260	190	420	240	
Calcium	85	68	110	77	140	98	
Magnesium	20	17	23	16	30	22	
Potassium	4.1	3.6	4.4	3.8	5.1	4.4	
Sodium	30	26	33	27	30	28	
TDS	390	360	480	340	640	460	
Turbidity	10	<1.0	7.2	0.52	0.41	78	
Nitrate	38	25	33	27	58	64	
Nitrite	ND	<1.0	<0.1	<0.1	<0.2	<0.5	
Ammonia Nitrogen	0.02	<1.0	0.11	0.31	0.18	<0.1	

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 17 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR W-1
(all results in micrograms per liter)

Sample ID	Sampling Method	Date	1,1,1-TCA	1,1-DCA	1,1-DCE	TCE	Toluene	PCE
W-1 @ 290'	AL	5/14/87	<1	<1	<1	<1	<1	<1
W-1 @ 426'	AL	5/15/87	<1	<1	<1	<1	<1	<1
W-1 @ 290'	SP	6/8/87	<1	<1	<1	<1	5	<1
W-1 @ 420'	SP	6/11/87	<1	<1	<1	<1	7	<1

1,1,1-TCA: 1,1,1-Trichloroethane.
1,1-DCA: 1,1-Dichloroethane.
1,1-DCE: 1,1-Dichloroethene.
TCE: Trichloroethene.
PCE: Tetrachloroethene.
<1: Less than the detection limit of 1.
AL: Air Lift Pump.
SP: Submersible Pump.
Toluene was detected at a concentration of 2 µg/l in the trip blank samples collected on 6/8/87.

TABLE 1B - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1

(all results in micrograms per liter)

Organic Constituent	Sample Date													
	08/21/91	09/17/91	01/14/92	03/15/92	05/19/92	08/11/92	01/14/93	03/02/93	06/17/93	12/07/93	02/18/94	05/16/94	08/16/94	09/08/94
1,1,1-Trichloroethane	2.4/2.3	1.6	ND	5.1	3.1	4.3	<3	<0.5	3.0	0.3	1.4	<0.2	20	140
1,1-Dichloroethane	ND/ND	ND	ND	1.3	0.75	0.51	<3	<0.5	<3	0.3	<1	<0.2	<20	<100
1,1-Dichloroethene	3.7/3.5	2.8	ND	3.1	3.3	5.5	<3	<0.5	2.9	<0.2	1.0	<0.2	<20	<100
1,2,3-Trichlorobenzene	ND/0.75	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100
Carbon Tetrachloride	1.1/0.70	1.3	ND	ND	0.85	1.6	<3	<0.5	<3	<0.2	<1	<0.2	<20	<100
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	<3	1.4	<3	<0.2	<1	<0.2	<50	<300
Trichloroethene	40/39	27	3.6	130	58	100	54	25	91	4.4	62	3.5	1,800	6,400
Toluene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2	<20	<100
Tetrachloroethene	1.2/1.0	1.1	ND	1.7	1.4	2.1	<3	2.2	4.9	2.6	1.7	1.4	<20	<100
cis-1,2-Dichloroethene	ND/ND	ND	ND	3.0	1.6	1.4	<3	0.71	5.0	2.1	3.0	1.1	36	160
m- & p-xylenes	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2	<20	<100

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

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TABLE 19 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in micrograms per liter)

Organic Constituent	Sample Data																	
	08/21/91	09/17/91	01/15/92	03/17/92	05/20/92	08/10/92	01/14/93	03/02/93	06/18/93	08/19/93	11/20/93	02/16/94	03/09/94	05/18/94	08/16/94	09/08/94	11/22/94	12/12/94
1,1,1-Trichloroethane	6.7	5.4/5.8	ND	2.5	12	15	0.54	<0.5	<3	<1	0.37	<20	<1	<0.2	10	12	1.5	0.5
1,1-Dichloroethane	ND	ND/ND	ND	ND	0.53	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2	<10	<10	0.5	0.3
1,1-Dichloroethene	7	5.3/5.5	ND	2.4	13	17	0.64	<0.5	<3	<1	<0.2	<20	<1	<0.2	<10	17	1.3	0.5
Carbon Tetrachloride	1.7	1.8/1.9	ND	0.57	3.3	3.8	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2	12	14	1.6	0.7
Trichloroethene	50	42/44	1.6	31	83	150	24	19	48	48	29	890	60	9.6	830	810	43	13
Tetrachloroethene	1	1.0/1.0	ND	0.58	1.9	2.3	0.71	0.62	<3	<1	1.7	<20	1.4	0.99	<10	<10	2.1	1.9
Toluene	0.84	0.53/ND	ND	ND	ND	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2	<10	<10	<0.2	<0.2
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<3	<1	0.4	<20	<1	0.49	<10	<10	1.7	1.4
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	<0.5	<0.3	<3	<1	<0.2	<20	<1	<0.2	<10	<10	<0.2	0.5

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 20 - HISTORIC VOLATILE ORGANIC COMPOUNDS
GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in micrograms per liter)

Organic Constituent	Sample Date															
	08/22/91	09/17/91	01/16/92	03/16/92	05/19/92	08/12/92	01/14/93	03/02/93	06/18/93	08/19/93	11/20/93	02/16/94	05/18/94	08/16/94	09/08/94	12/13/94
1,1,1-Trichloroethane	7.3	7.9	ND/ND	22/20	7.5/7.0	13	<5	<5	<50	<1	0.6	0.31	<0.2	21	83	1.4
1,1-Dichloroethane	ND	0.55	ND/ND	6.6/ND	1.5/1.4	ND	<5	<5	<50	<1	<0.2	<4	<0.2	<20	51	<1
1,1-Dichloroethene	10	8.5	ND/ND	11/ND	6.6/5.5	13	<5	<5	<50	<1	0.4	0.31	<0.2	22	59	1.5
Carbon Tetrachloride	ND	2	ND/ND	ND/ND	1.1/ND	ND	<5	<5	<50	<1	<0.2	<4	<0.2	<20	<50	<1
Trichloroethene	110	100	4.7/6.4	620/820	100/160	240	68	47	2200	49	15	15	6.0	1,200	4,300	36
Tetrachloroethene	ND	2.7	ND/ND	ND/ND	2.0/1.8	3.3	<5	<5	<50	2.2	1.6	<4	0.71	<20	<50	2.4
cis-1,2-Dichloroethene	ND	0.8	ND/ND	13/ND	2.1/1.9	2.8	<5	<5	<50	<1	<0.2	0.26	<0.2	<20	79	1.7
Toluene	ND	ND	ND/ND	ND/ND	ND/ND	ND	<5	<5	<50	<1	0.2	<4	<0.2	<20	<50	<1
Naphthalene	ND	ND	ND/ND	ND/ND	ND/ND	ND _{F = 7}	<30	<30	<300	<5	<1	<20	<1	150	<300	<5

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 21 - HISTORIC VOLATILE ORGANIC COMPO. GROUNDWATER ANALYTICAL RESULTS FOR GW-4
(all results in micrograms per liter)

Organic Constituent	Sample Date														
	08/19/91	01/15/92	03/18/92	05/19/92	08/10/92	01/16/93	03/03/93	06/18/93	08/19/93	11/30/93	02/18/94	05/17/94	08/16/94	09/08/94	12/12/94
1,1,1-Trichloroethane	ND	ND/ND	0.59	ND	ND/ND	<0.5	<0.5	<0.5	<0.2	<0.2	5.0	<0.2	11	8.0	0.6
1,2,3-Trichlorobenzene	ND	ND/ND	ND	ND	ND/ND	0.59	<0.5	<0.5	<0.2	<0.2	<1	<0.2	<2	<2	<0.2
1,1-Dichloroethene	ND	ND/ND	1.2	1.0	0.60/0.66	<0.5	<0.5	1.7	<0.2	<0.2	6.7	<0.2	<2	8.5	1.0
Carbon Tetrachloride	ND	ND/ND	0.73	0.75	0.68/0.63	<0.5	<0.5	<0.5	<0.2	<0.2	1.2	<0.2	2.1	<2	0.2
Trichloroethene	1.5	ND/ND	10	4.7	3.9/3.8	1.4	2.5	20	1.0	0.6	65	0.63	130	100	12
Tetrachloroethene	ND	ND/ND	ND	ND	ND/ND	0.52	<0.5	0.6	0.32	0.3	1.2	0.22	<2	<2	0.8
m- & p-Xylenes	ND	ND/ND	0.69	ND	ND/ND	0.59	<0.5	<0.5	<0.2	<0.2	<1	<0.2	<2	<2	<0.2
Naphthalene	ND	ND/ND	ND	ND	ND/ND	0.59	<0.5	<0.5	<0.2	<0.2	<5	<1	<10	<10	<1
Toluene	ND	ND/ND	ND	ND	ND/ND	<0.5	<0.5	<0.5	<0.2	<0.2	<1	<0.2	<2	<2	0.4
cis-1,2-Dichloroethene	ND	ND/ND	ND	ND	ND/ND	<0.5	<0.5	<0.5	<0.2	<0.2	<1	<0.2	<2	<2	0.5
p-Isopropyl Toluene	ND	ND/ND	ND	ND	ND/ND	<0.5	<0.5	<0.5	<0.2	<0.2	<1	<0.2	<2	<2	0.3

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 23 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR CW-3
(all results in micrograms per liter)

Organic Constituent	Sample Date													
	08/20/91	09/17/91	01/15/92	03/18/92	05/20/92	08/12/92	01/16/93	03/02/93	06/18/93	08/18/93	11/30/93	02/18/94	05/17/94	08/16/94
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	0.51	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	0.96
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.2	0.25	<0.2	<0.2	<0.2
Freon 113	ND	ND	ND	ND	ND	ND	<0.5	0.66	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene	ND	ND	ND	ND	0.69	0.51	0.59	0.55	0.51	0.4	0.78	0.97	0.77	6.4
Tetrachloroethene	ND	ND	ND	ND	0.52	ND	0.85	0.9	0.69	0.77	0.97	0.66	1.0	0.98
m- & p-xylenes	ND	ND	ND	ND	ND	ND	0.63	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	ND	ND	ND	ND	ND	ND	0.53	<0.5	<0.5	<0.2	0.45	<1	<1	<1
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.2	0.63	<0.2	0.94	0.51
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	0.79
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	0.67
Toluene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	0.25
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2
														2.4

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 23 - HISTORIC VOLATILE ORGANIC COMPOUNDS GROUNDWATER ANALYTICAL RESULTS FOR GW-6
(all results in micrograms per liter)

Organic Constituent	Sample Date															
	08/22/91	09/19/91	01/16/92	03/17/92	05/20/92	08/11/92	01/14/93	03/03/93	06/17/93	08/18/93	11/20/93	02/18/94	05/16/94	08/16/94	09/08/94	12/08/94
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.4	<1	<1	<1	<1	<1
Trichloroethene	0.63	0.77	1.2	1.8	0.85	0.52	1.7	1.7	1.2	0.84	1.2	1.2	0.95	1.5	1.1	0.7
Tetrachloroethene	ND	ND	1.1	0.98	ND	ND	0.95	1.6	1.1	0.87	1.2	0.94	0.81	0.81	0.70	0.9
cis-1,2-dichloroethene	ND	ND	0.65	ND	ND	ND	<0.5	<0.5	0.50	0.36	0.4	0.56	0.33	0.60	0.40	0.4
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.40	0.3

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 24 - HISTORIC VOLATILE ORGANIC COMPOUNDS
(all results in micrograms per liter)

Organic Constituent	Sample Date							
	09/08/93	11/29/93	02/16/94	03/08/94	05/18/94	08/15/94	09/07/94	12/11/94
1,1,1-Trichloroethane	0.19	<0.5	<40	<0.4	<0.2	<1	<1	8.1
1,1,2,2-Tetrachloroethane	<0.2	<0.5	<40	0.46	<0.2	<1	<1	<5
1,2,4-Trichlorobenzene	<0.2	<0.5	<40	0.50	<0.2	<1	<1	<5
Trichloroethene	33	7.7	3100	35	0.36	22	48	440
Tetrachloroethene	0.21	<0.5	<40	0.72	<0.2	<1	<1	<5
cis-1,2-dichloroethene	0.58	<0.5	56	1.0	<0.2	2.1	2.3	8.9
Toluene	<0.2	<0.5	<40	<0.4	0.15	<1	<1	<5
1,1-Dichloroethene	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	7.7
Carbon Tetrachloride	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5
1,1-Dichloroethane	<0.2	<0.5	<40	<0.4	<0.2	<1	<1	<5

ND: Not Detected.

<3: Less than the detection limit of 3.

*: The results are underestimated because of problems associated with the ruptured bladder of the dedicated bladder pump.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 25 - HISTORIC VOLATILE ORGANIC COMPOUNDS - GROUNDWATER ANALYTICAL RESULTS FOR GW-8

(all results in micrograms per liter)

Organic Constituent	Sample Date						
	09/09/93	11/29/93	02/16/94	05/17/94	08/13/94	09/07/94	12/10/94
1,1,1-Trichloroethane	<0.2	<0.5	0.25	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichlorobenzene	<0.2	<0.5	0.29	<0.2	<0.2	<0.2	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.5	0.23	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	0.17	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride	<0.2	<0.5	0.92	<0.2	0.58	1.4	0.3
Trichloroethene	0.80	0.9	30	1.2	28	32	8.6
Tetrachloroethene	0.30	0.6	0.77	0.79	0.66	0.40	2.9
cis-1,2-dichloroethene	0.22	0.6	0.5	0.55	0.39	0.30	1.7
1,1-Dichloroethane	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	0.3

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 26 - HISTORIC VOLATILE ORGANIC COMPOUNDS - GROUNDWATER ANALYTICAL RESULTS FOR GW-9

(all results in micrograms per liter)

Organic Constituent	Sample Date						
	09/08/93	11/29/93	02/16/94	05/17/94	08/16/94	09/07/94	12/10/94
1,1,1-Trichloroethane	<0.2	<0.5	0.42	<0.2	3.1	2.4	0.5
1,1-Dichloroethene	<0.2	<0.5	0.4	<0.2	2.9	2.9	0.5
Dichlorodifluoromethane	1.0	<0.5	<0.2	<0.2	<3	<3	<0.5
Trichloroethene	2.4	3.1	16	3.4	110	75	9.4
Tetrachloroethene	0.28	0.5	1.1	<0.2	7.6	4.4	1.9
cis-1,2-dichloroethene	0.31	<0.5	<0.2	<0.2	<1	<1	0.5
1,3-Dichloropropane	<0.2	<0.5	<0.2	0.48	<1	<1	<0.2
Carbon Tetrachloride	<0.2	<0.5	<0.2	<0.2	<1	1.8	0.3

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 27 - HISTORIC VOLATILE ORGANIC COMPO. GROUNDWATER ANALYTICAL RESULTS FOR GW-10
(all results in micrograms per liter)

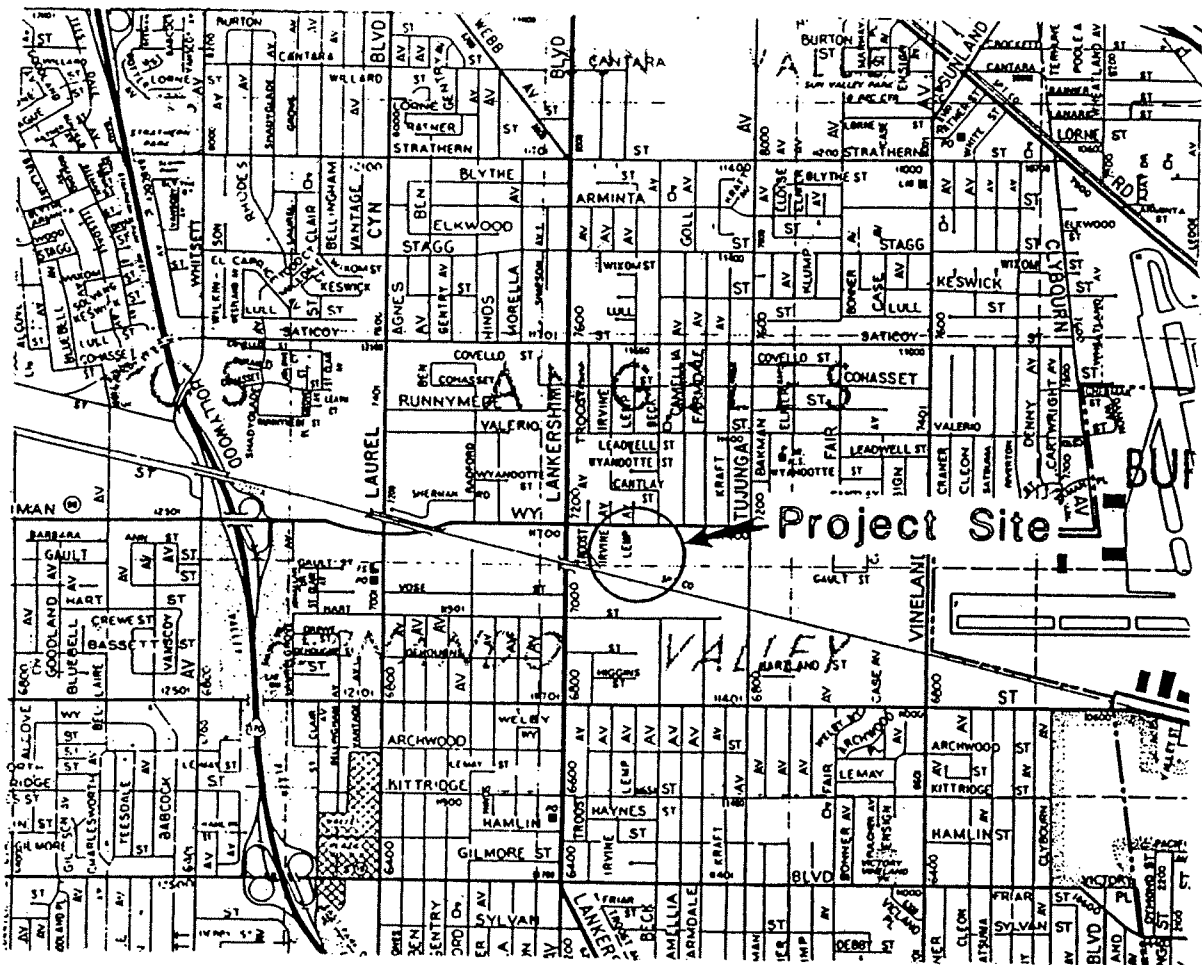
Organic Constituent	Sample Date							
	09/09/93	11/29/93	02/16/94	03/07/94	05/18/94	06/15/94	09/07/94	12/11/94
1,1-Dichloroethane	0.10	<0.5	<40	<2	<0.2	<100	<100	<5
Dichlorodifluoromethane	4.2	<0.5	<40	<2	<0.2	<300	<300	<20
1,1,1-Trichloroethane	0.14	<0.5	<40	<2	<0.2	<100	<100	7.2
Trichloroethene	50	15	2900	210	12	9,000	4,700	360
Tetrachloroethene	1.5	1.2	<40	<2	1.0	<100	<100	<5
cis-1,2-dichloroethene	1.3	<0.5	52	4.4	0.25	170	100	7.5
1,1-Dichloroethene	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5
Carbon Tetrachloride	<0.5	<0.5	<40	<2	<0.2	<100	<100	<5

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

003410



Source: The Thomas Guide, Los Angeles and Orange Counties, 1987, Page 16.

Scale: 1" = 2800'

SECOR International Incorporated

3437 Empresa Dr., Suite A. San Luis Obispo, CA 93401 (805) 546-0455

CAD FILE: AS8-A057VM

PROJECT # A0057-001-01

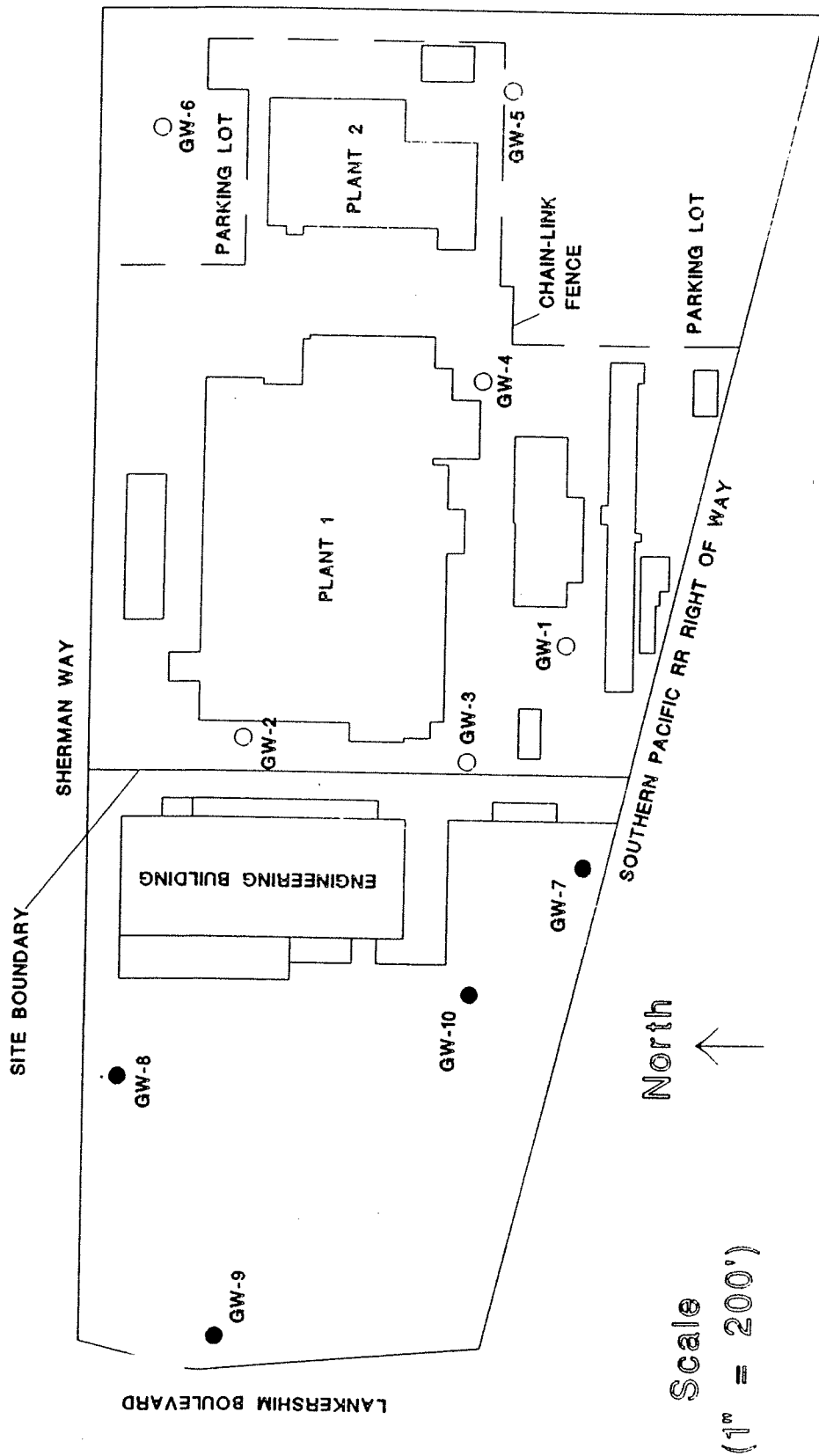
DATE: MARCH 1995

FIGURE:

1

VICINITY MAP

ALLIEDSIGNAL
AEROSPACE COMPANY 003411
NORTH HOLLYWOOD FACILITY



Legend:

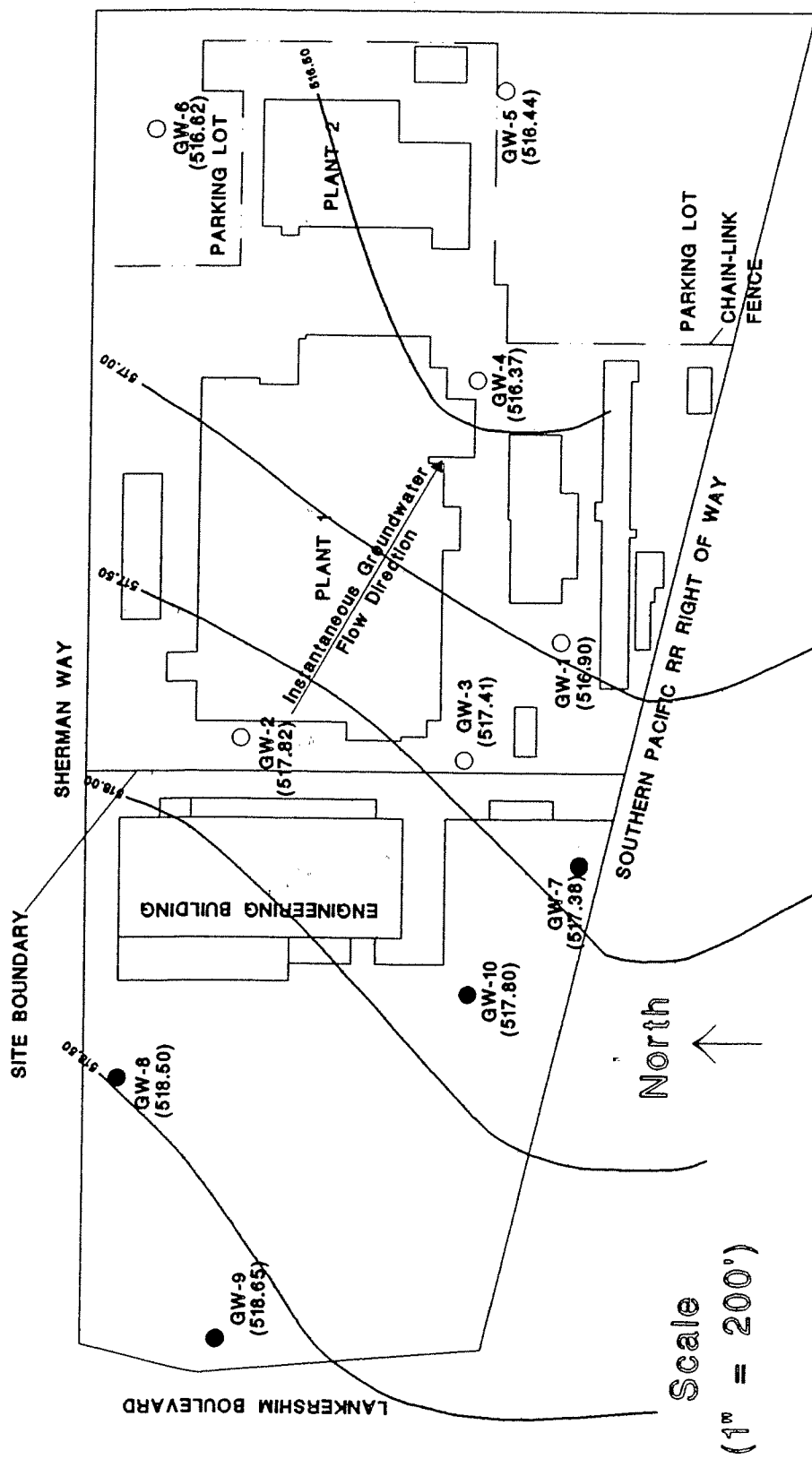
- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.

ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility

SITE MAP
FIGURE 2

File Name: AS7-A57SM22

SECOR



GROUNDWATER CONTOUR MAP (07/19/94) FIGURE 3

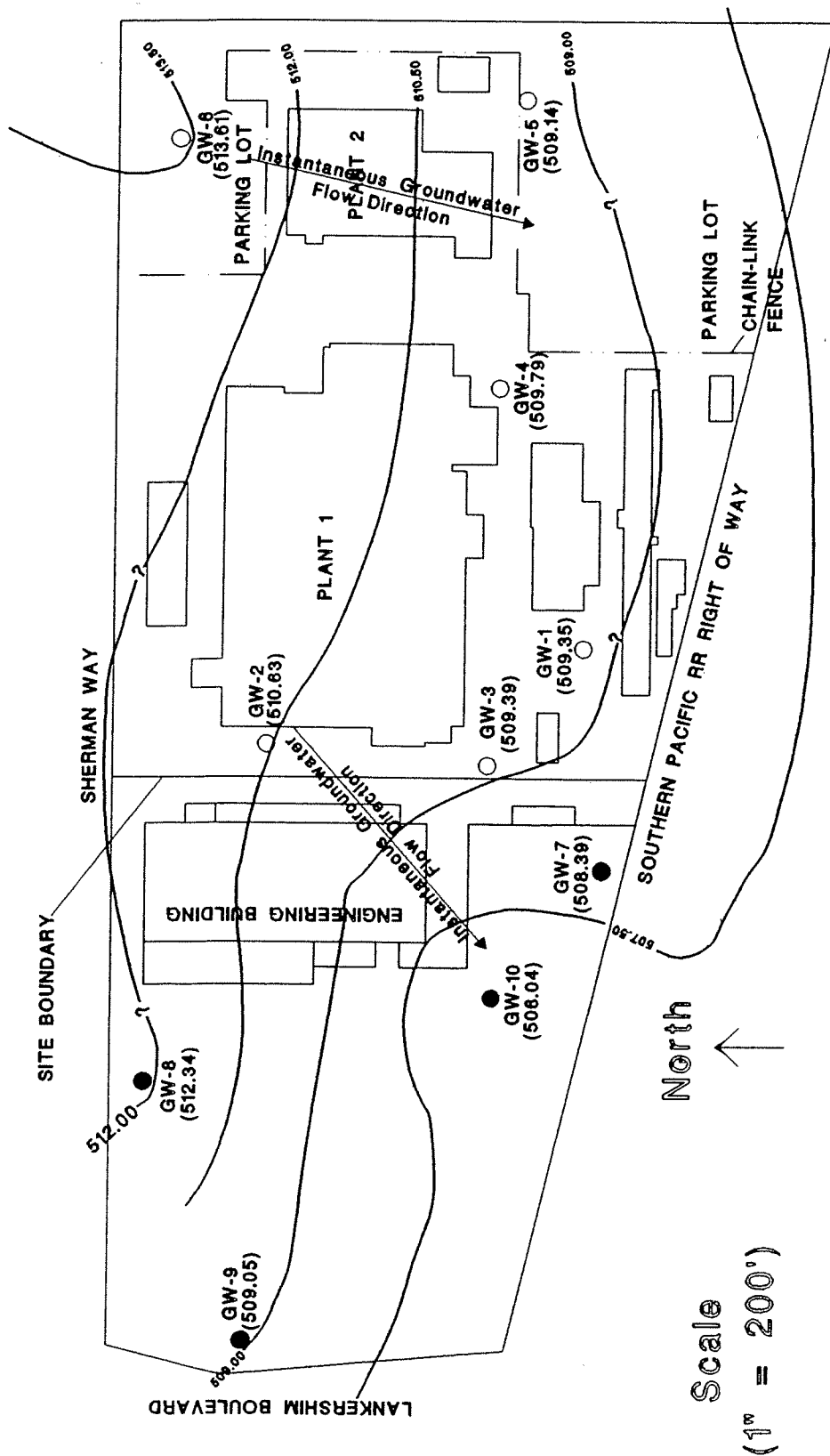
ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility

SEACOR

File Name: AS7-A57GC794

Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- (517.80) Denotes groundwater surface elevation in feet above mean sea level.
- 517.50 — Denotes groundwater contour line.



Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- (506.04) Denotes groundwater surface elevation in feet above mean sea level.
- 507.50 — Denotes groundwater contour line.

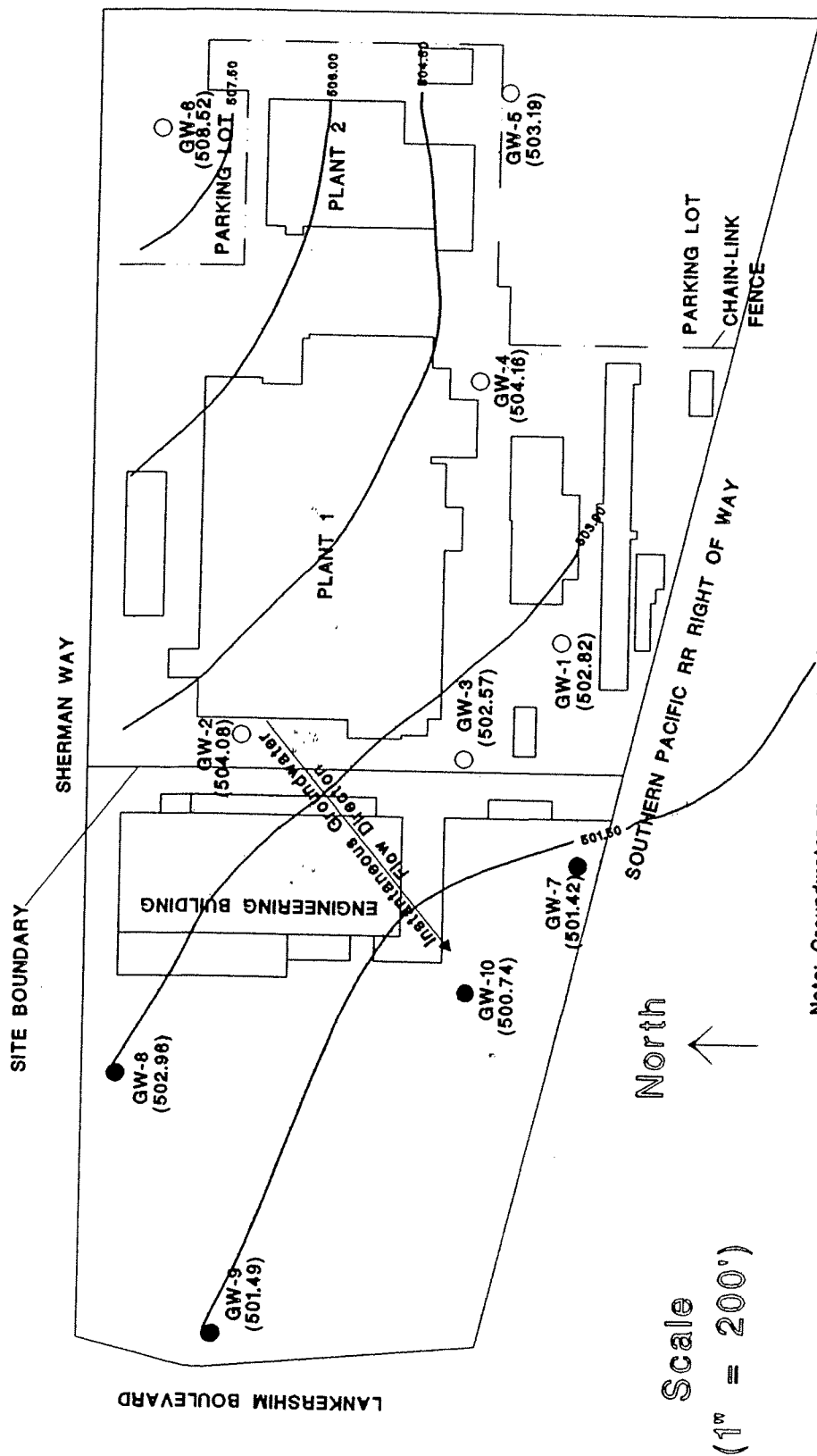
GROUNDWATER CONTOUR MAP

(08/15/94)
FIGURE 4

**ALLIEDSIGNAL
AEROSPACE COMPANY**
North Hollywood Facility

File Name: AS7-A57GC894

SEACOR



GROUNDWATER CONTOUR MAP

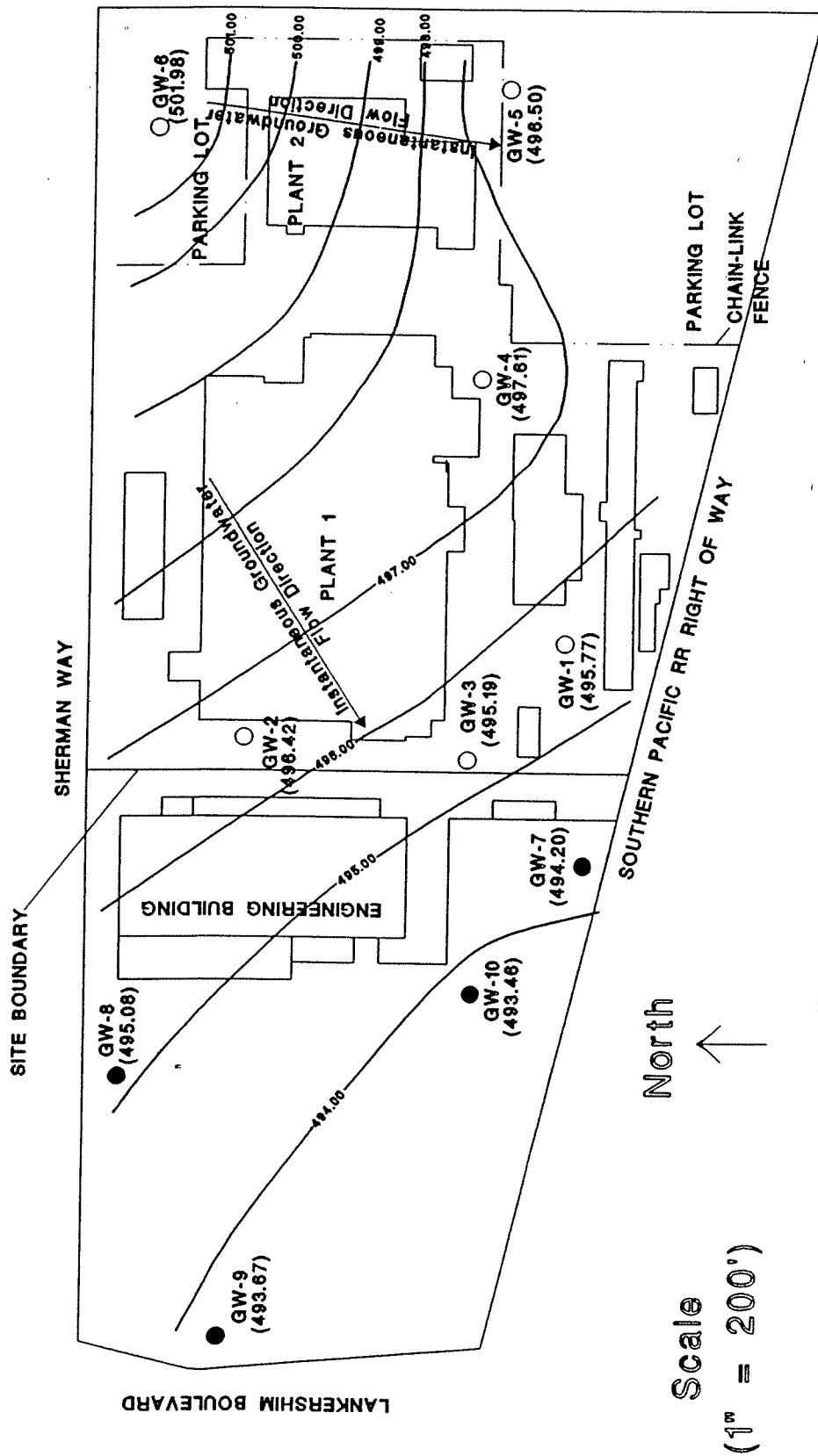
(09/07/94)

FIGURE 5

ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility

File Name: AS7-A57GC994

SEACOR



Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- (501.98) Denotes groundwater surface elevation in feet above mean sea level.
- 501.00 — Denotes groundwater contour line.

GROUNDWATER CONTOUR MAP

(10/11/94)

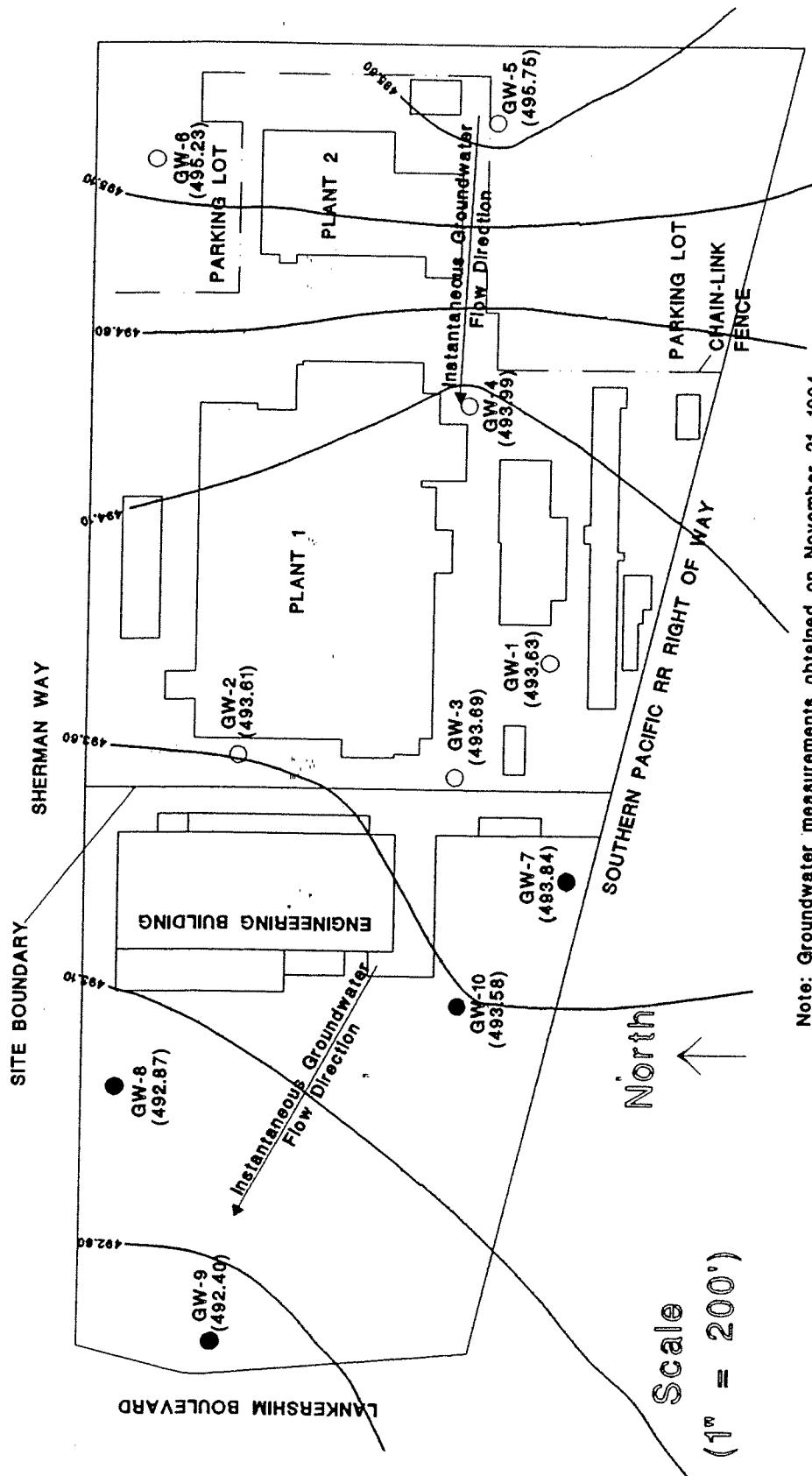
FIGURE 6

**ALLIEDSIGNAL
AEROSPACE COMPANY**
North Hollywood Facility

File Name: AS8-A57G1094

SECOR

003416



Legend:

- Denotes approximate location of on-site monitoring well.
GW-6
- Denotes approximate location of off-site monitoring well.
GW-10
- (492.40) Denotes groundwater surface elevation in feet above mean sea level.
- 492.60 — Denotes groundwater contour line.

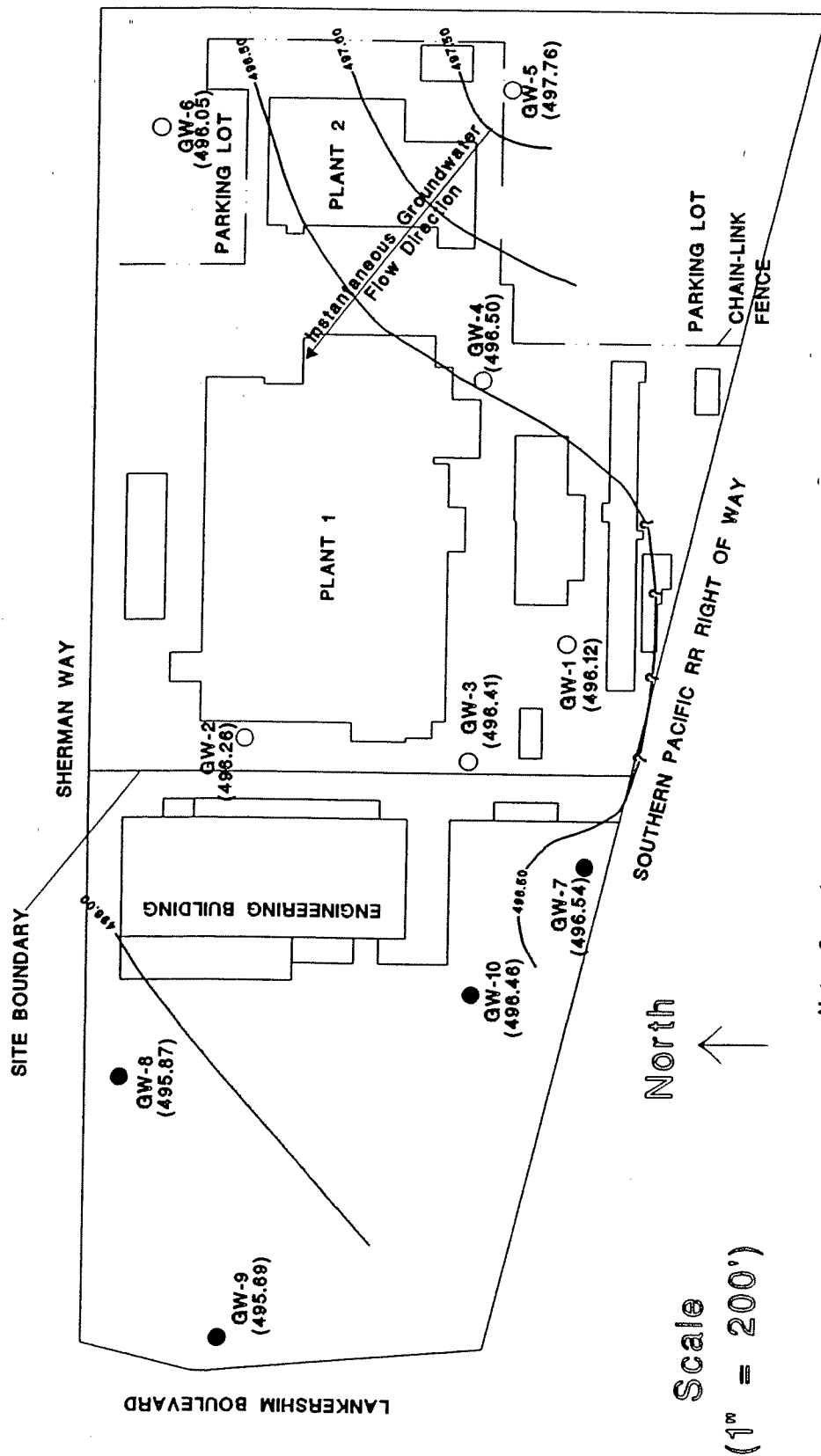
GROUNDWATER CONTOUR MAP

(11/21/94)
FIGURE 7

**ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility**

File Name: AS8-A57G1194

SECOR



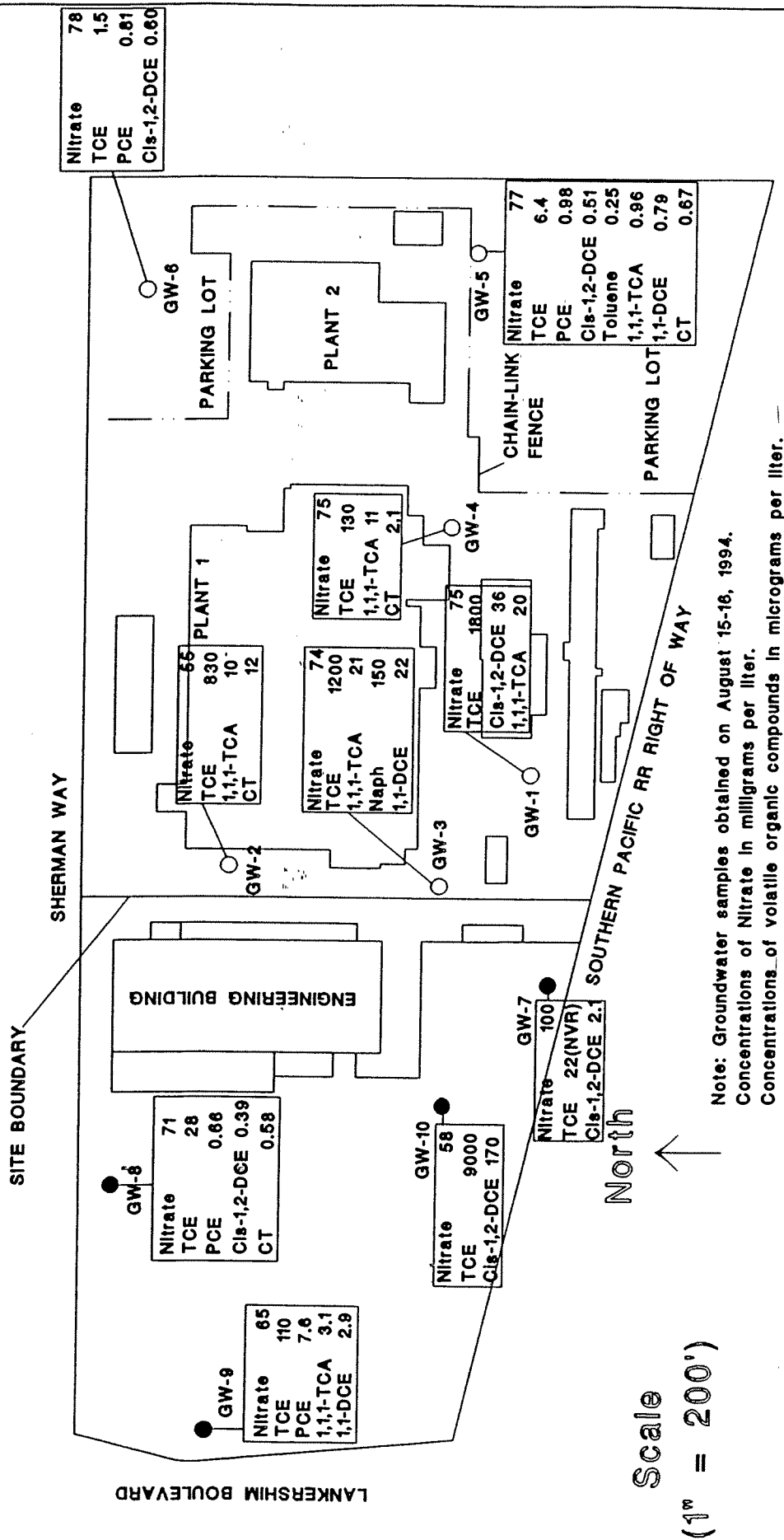
GROUNDWATER
CONTOUR MAP
(12/08/94)
FIGURE 8

**ALLIEDSIGNAL
AEROSPACE COMPANY**
North Hollywood Facility

File Name: AS8-A57G1294

Legend:

- Denotes approximate location of on-site monitoring well.
GW-6
- Denotes approximate location of off-site monitoring well.
GW-10
- Denotes groundwater surface elevation
In feet above mean sea level.
(495.87)
- 496.50 --- Denotes groundwater contour line.



Legend:

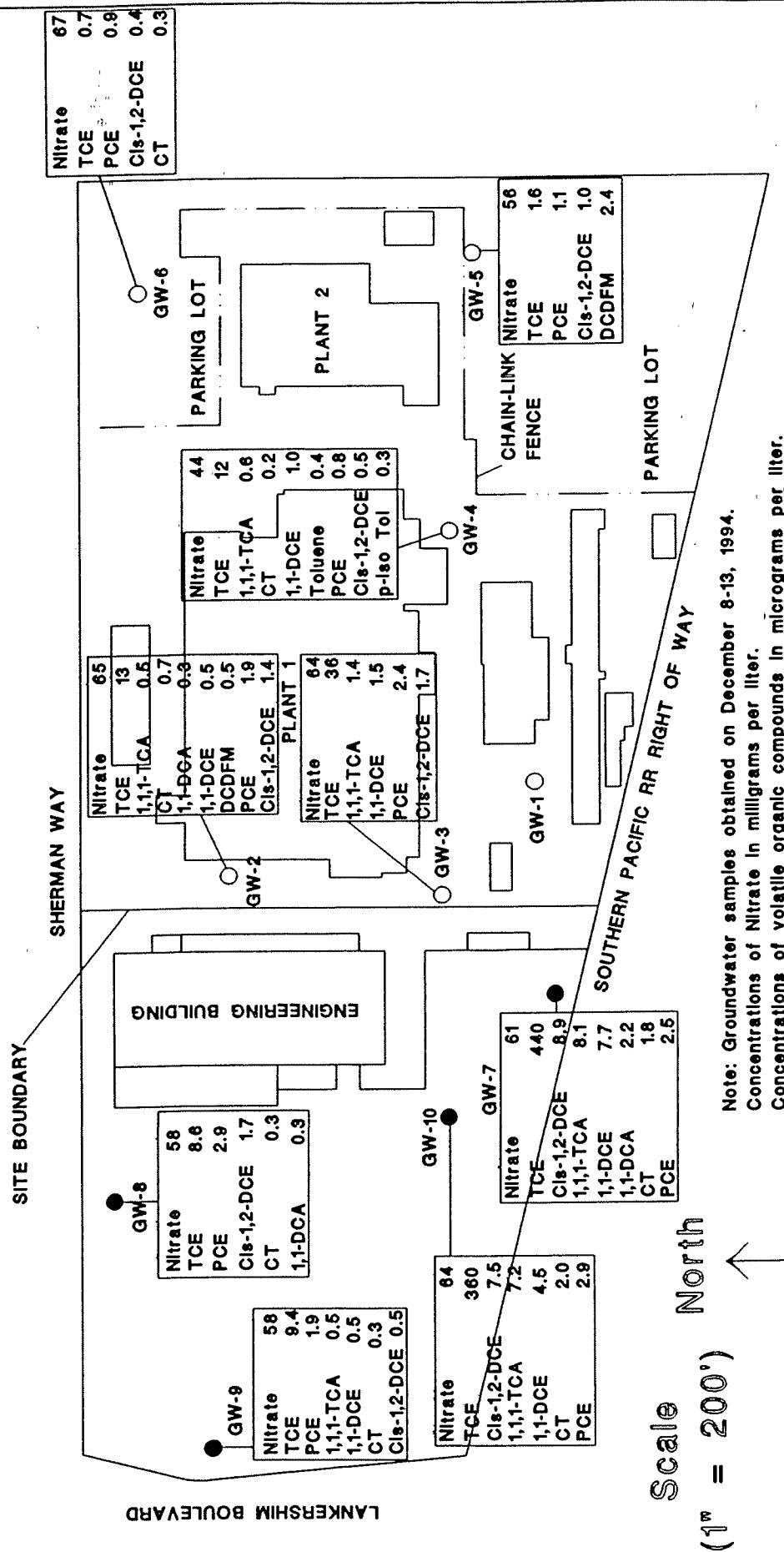
TCE	Trichloroethene
PCE	Tetrachloroethene
Cis-1,2-DCE	Cis-1,2-Dichloroethene
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCE	1,1-Dichloroethene
CT	Carbon Tetrachloride
Naph	Napthalene
NVR	Not Valid Result

ALLIEDSIGNAL AEROSPACE COMPANY North Hollywood Facility

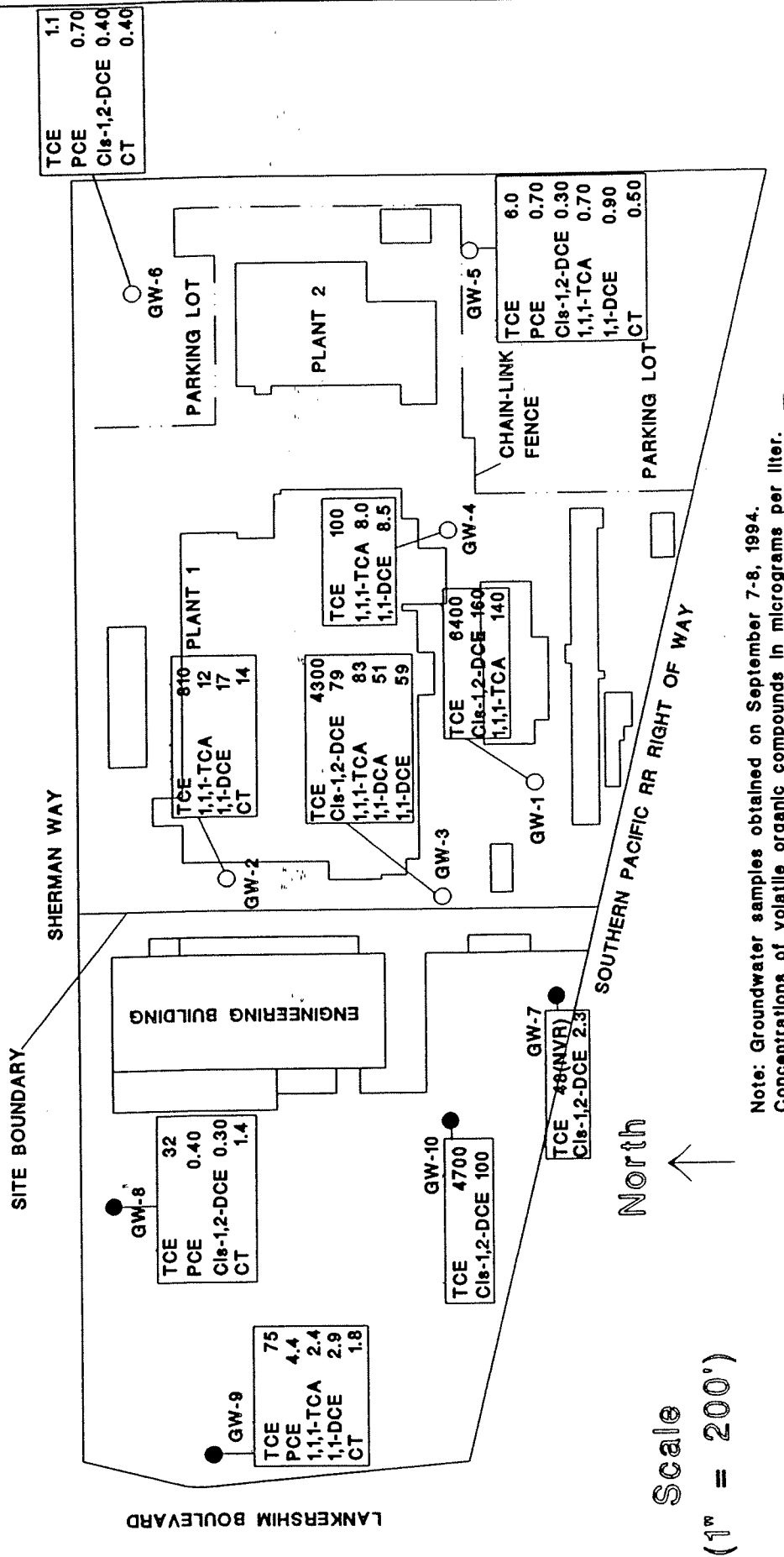
File Name: AS7-A57894VM

NITRATE AND VOC CONCENTRATION MAP (AUGUST 1994) FIGURE 9

SECOR



ROLES



VOC CONCENTRATION

MAP

(SEPTEMBER 1994)

FIGURE 11

ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility

File Name: AS8-A57994VM

SECTOR

Figure 12
Historic Groundwater Elevations in GW-1

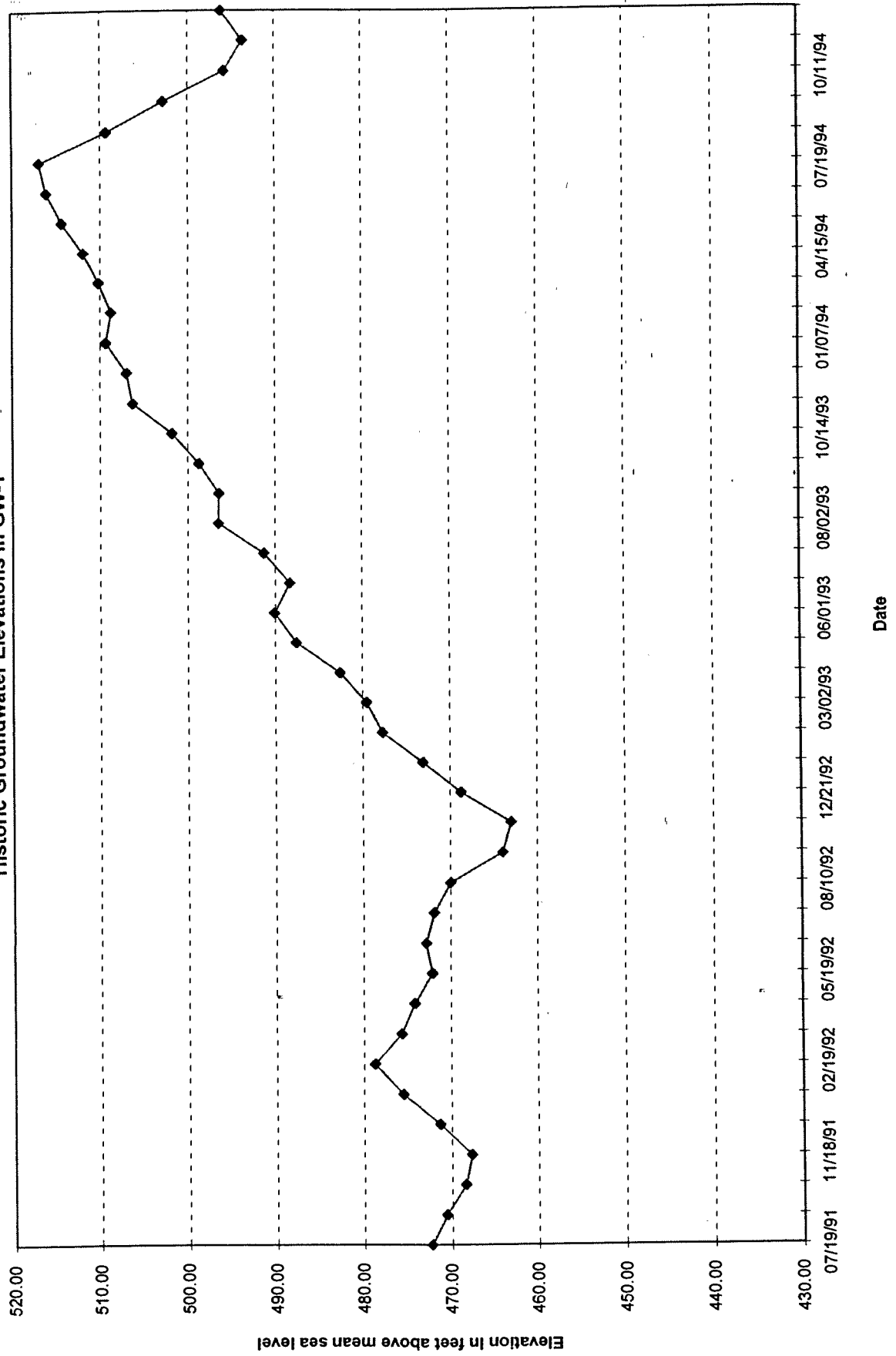


Figure 13
Historic Nitrate Concentrations in GW-1

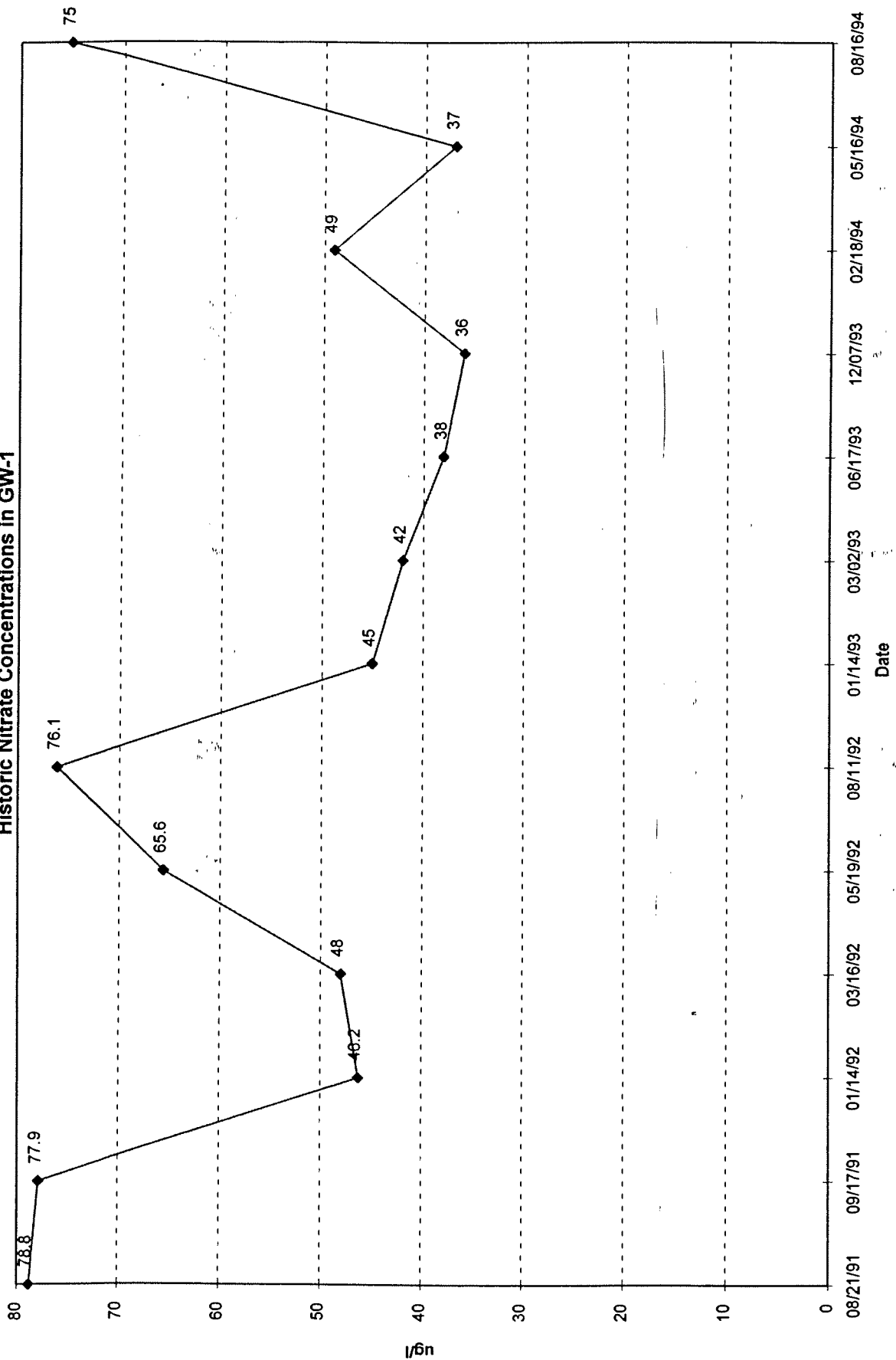


Figure 14
Historic 1,1,1-TCA Concentrations in GW-1

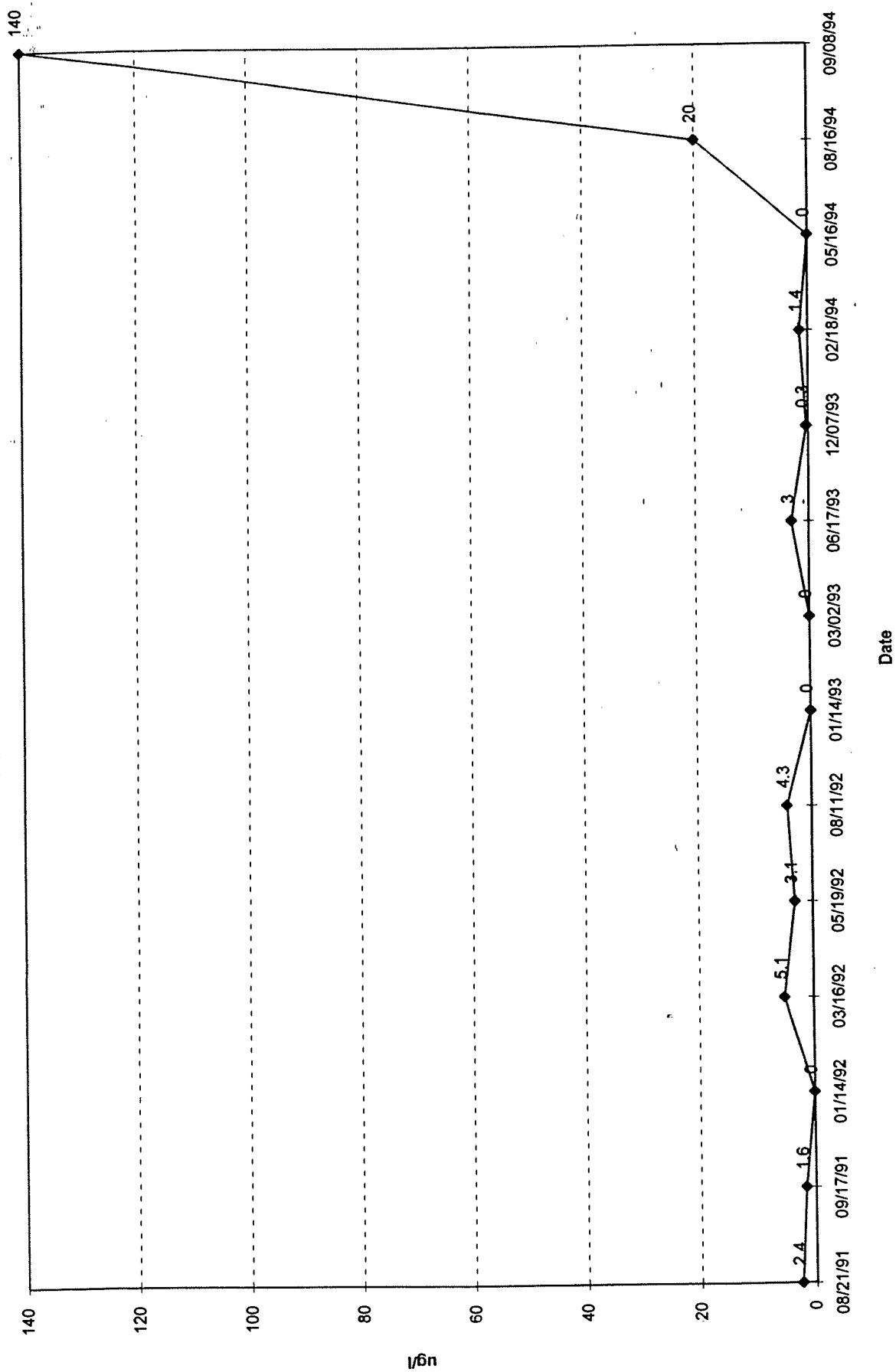


Figure 15
Historic 1,1-DCA Concentrations in GW-1

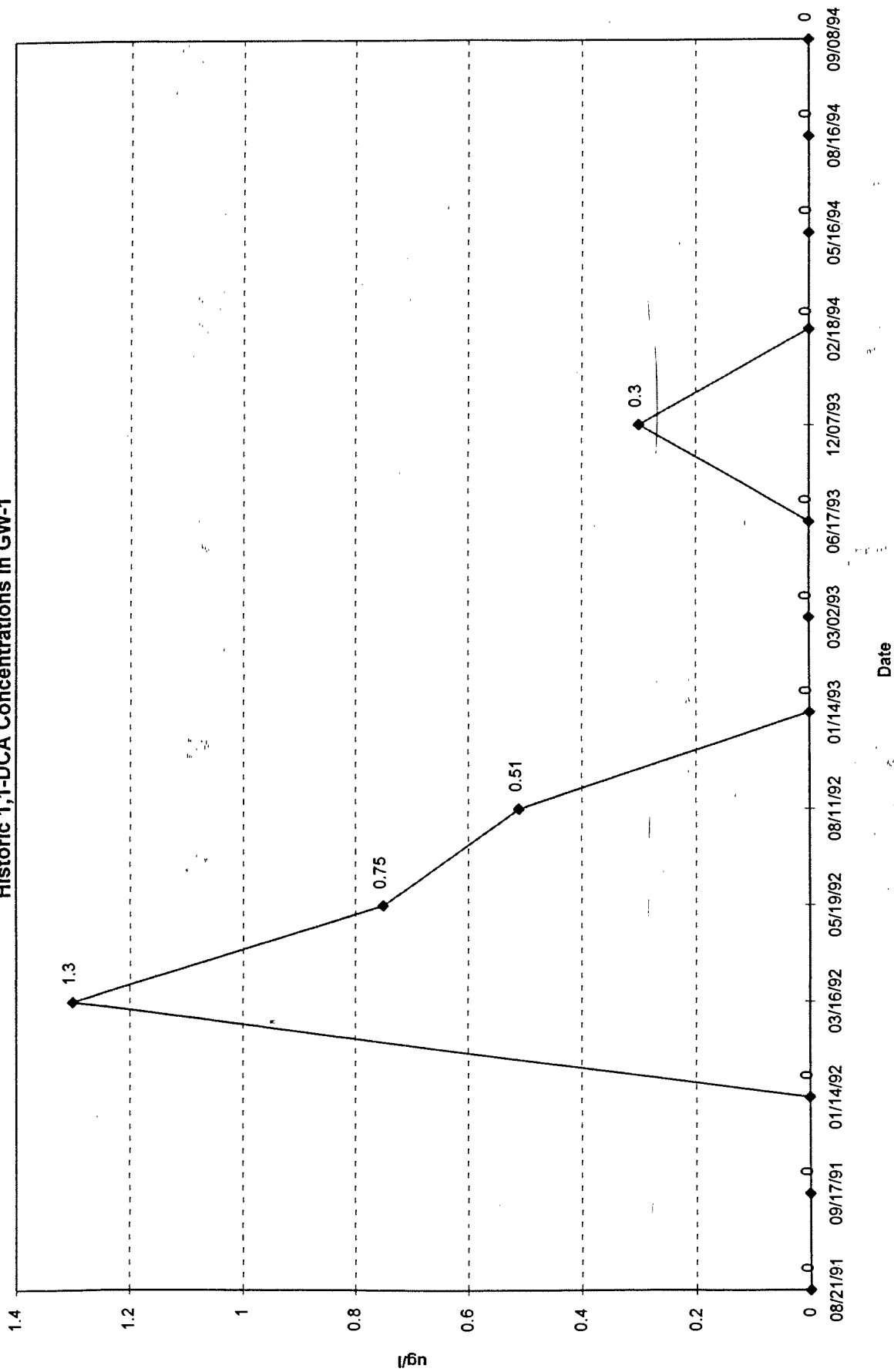


Figure 16
Historic 1,1-DCE Concentrations In GW-1

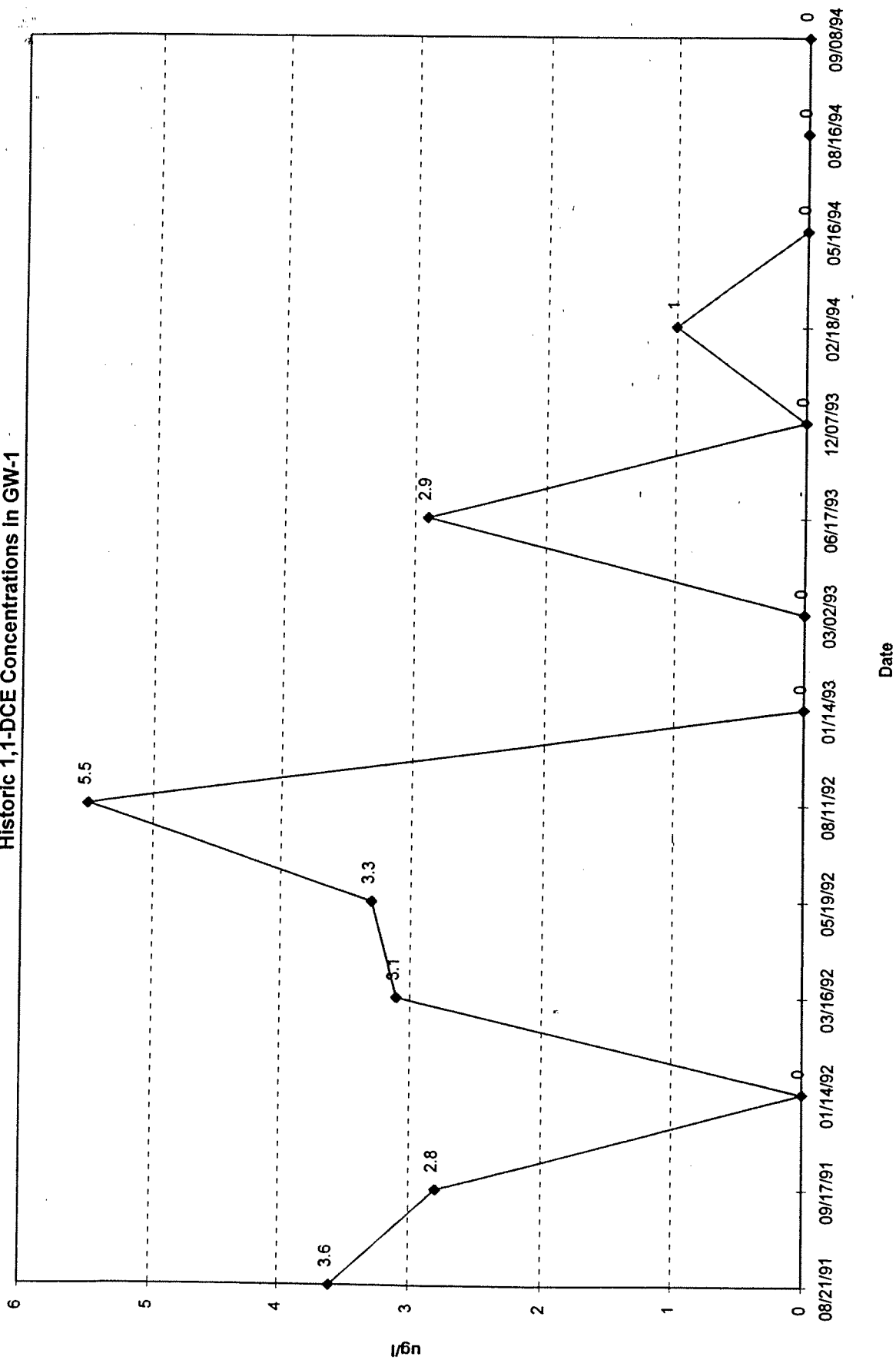


Figure 17
Historic CCL4 Concentrations in GW-1

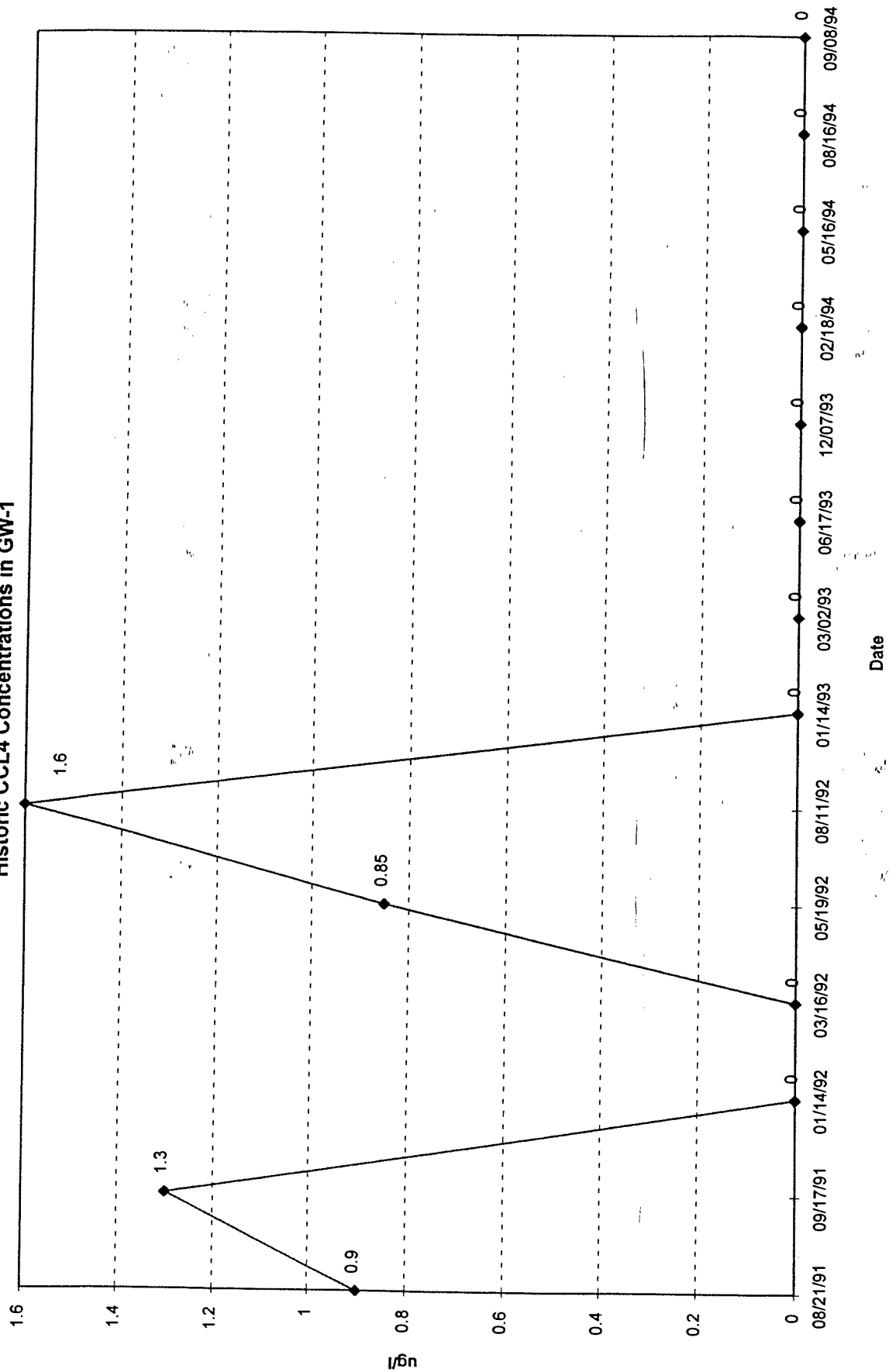


Figure 18
Historic TCE Concentrations in GW-1

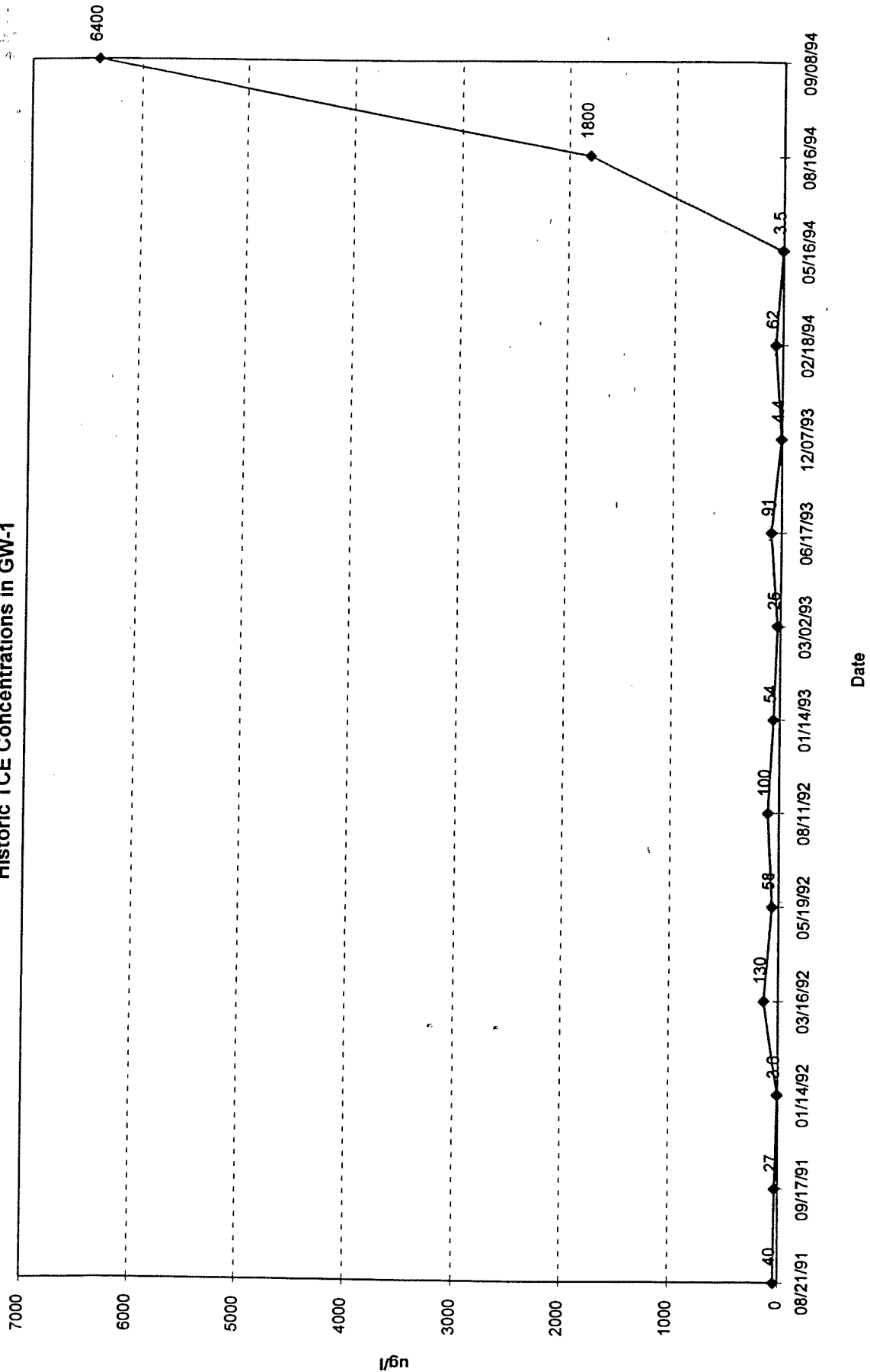


Figure 19

Historic PCE Concentrations in GW-1

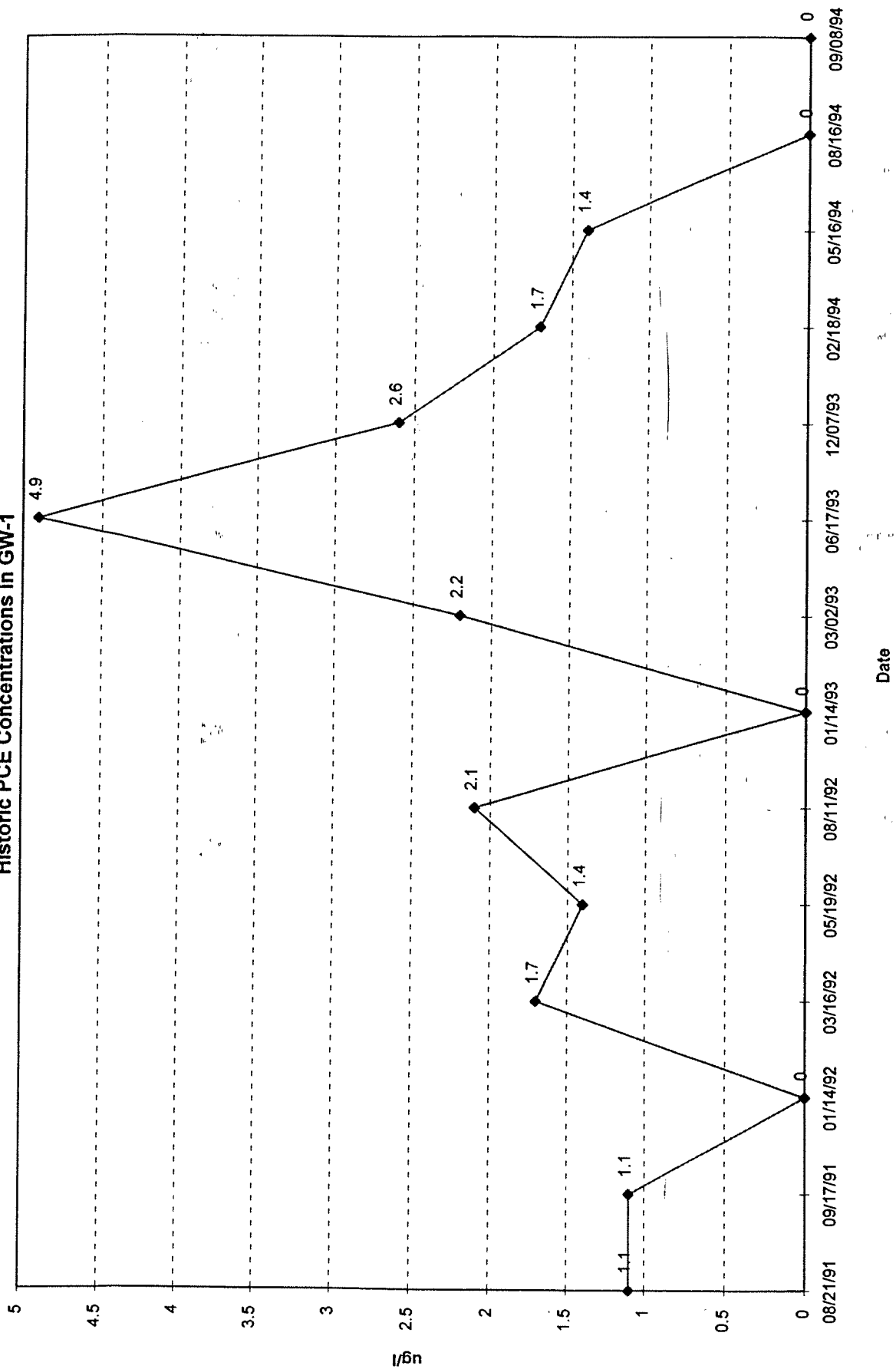


Figure 21
Historic Groundwater Elevations in GW-2

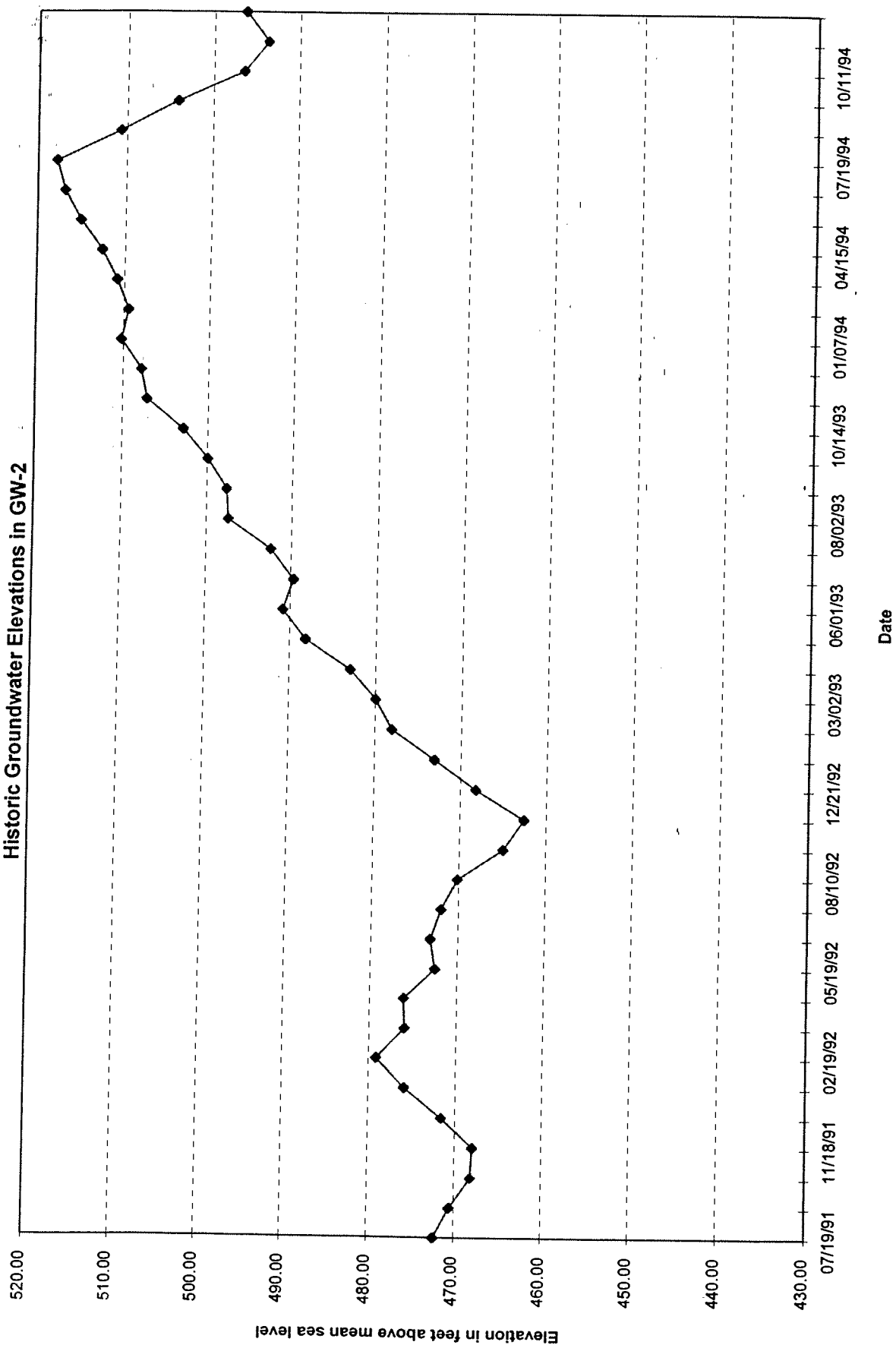


Figure 22
Historic Nitrate Concentrations in GW-2

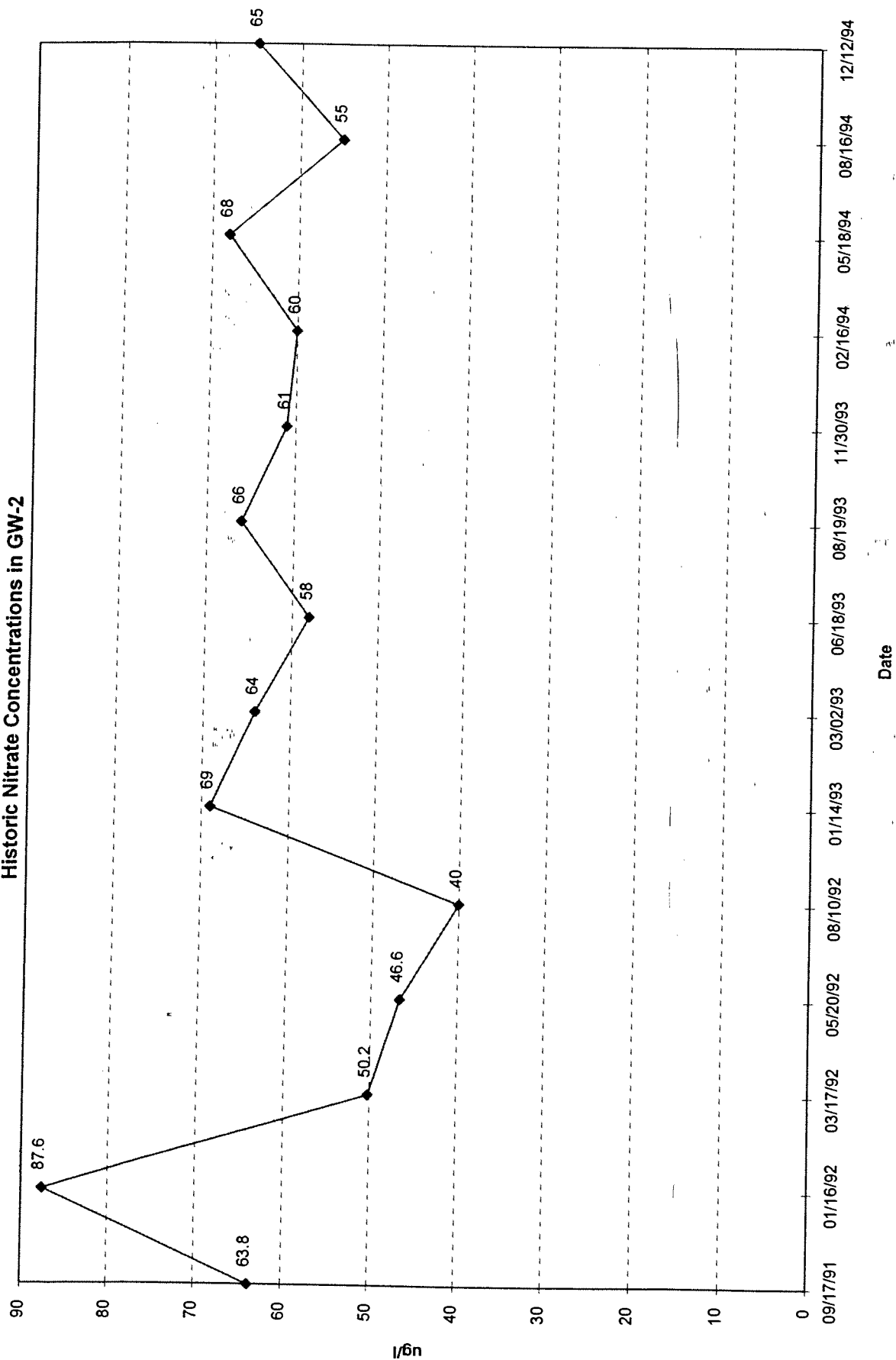


Figure 23
Historic 1,1,1-TCA Concentrations in GW-2

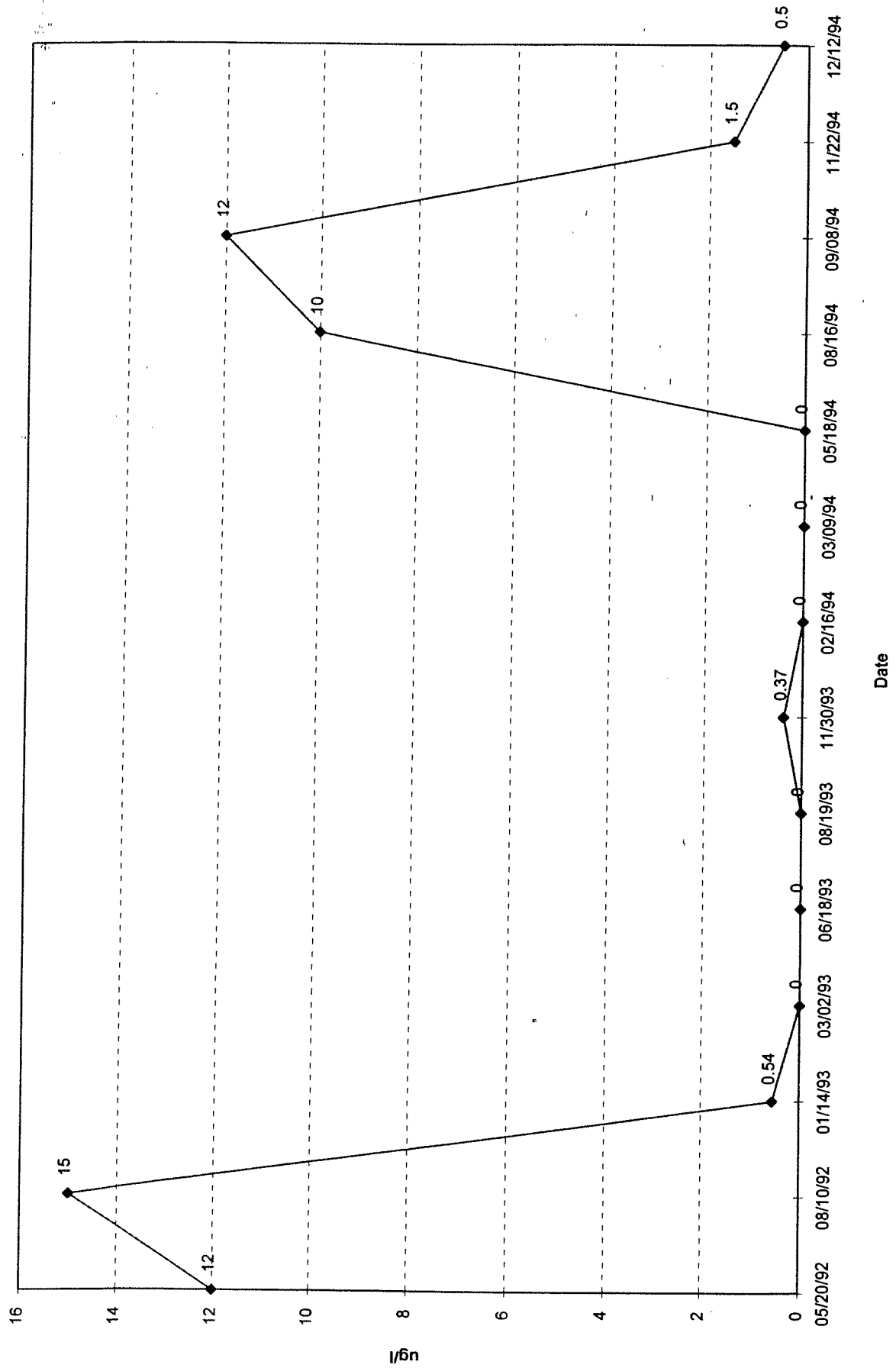


Figure 24
Historic 1,1-DCE Concentrations in GW-2

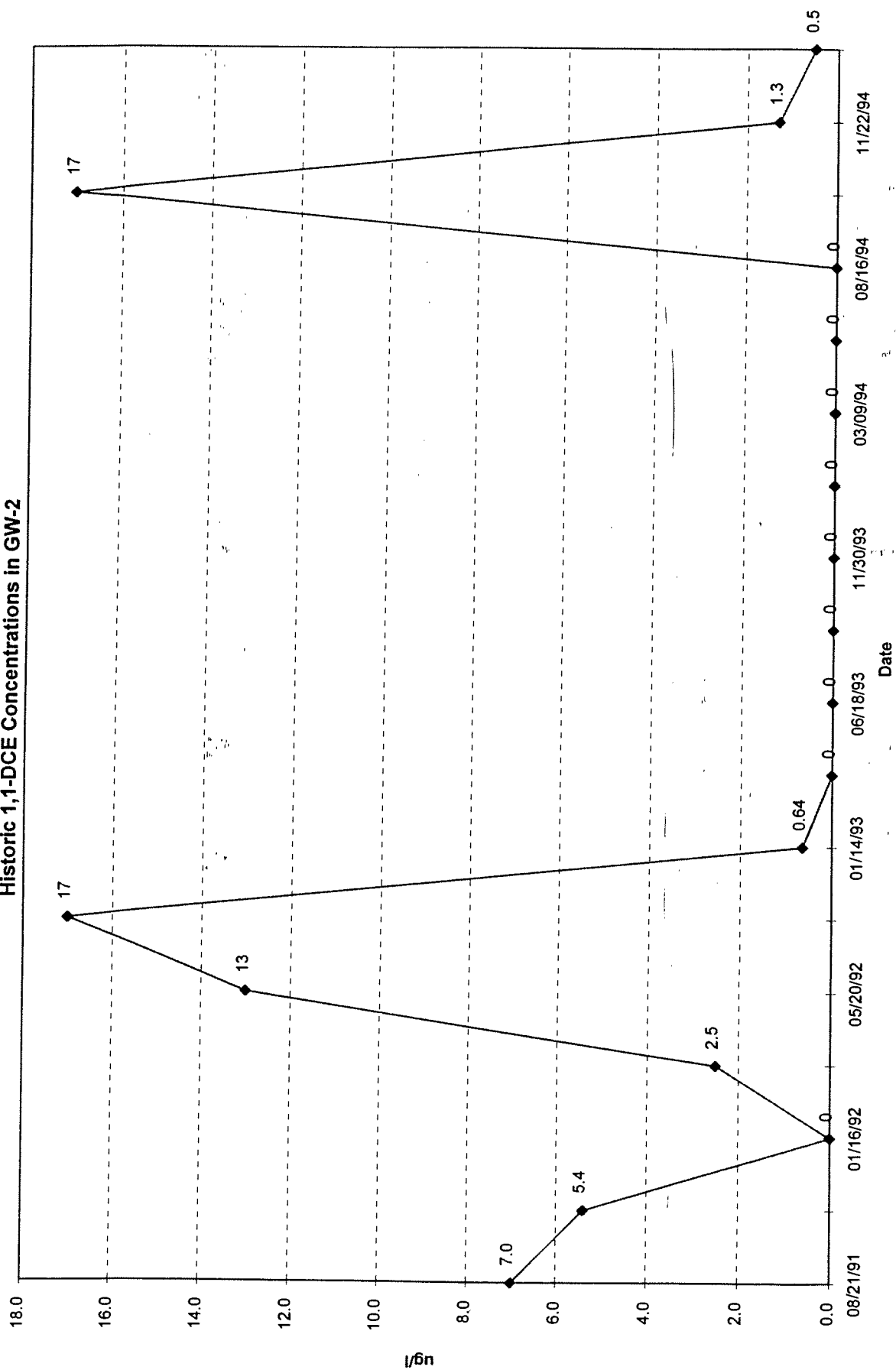


Figure 25
Historic CCL4 Concentrations in GW-2

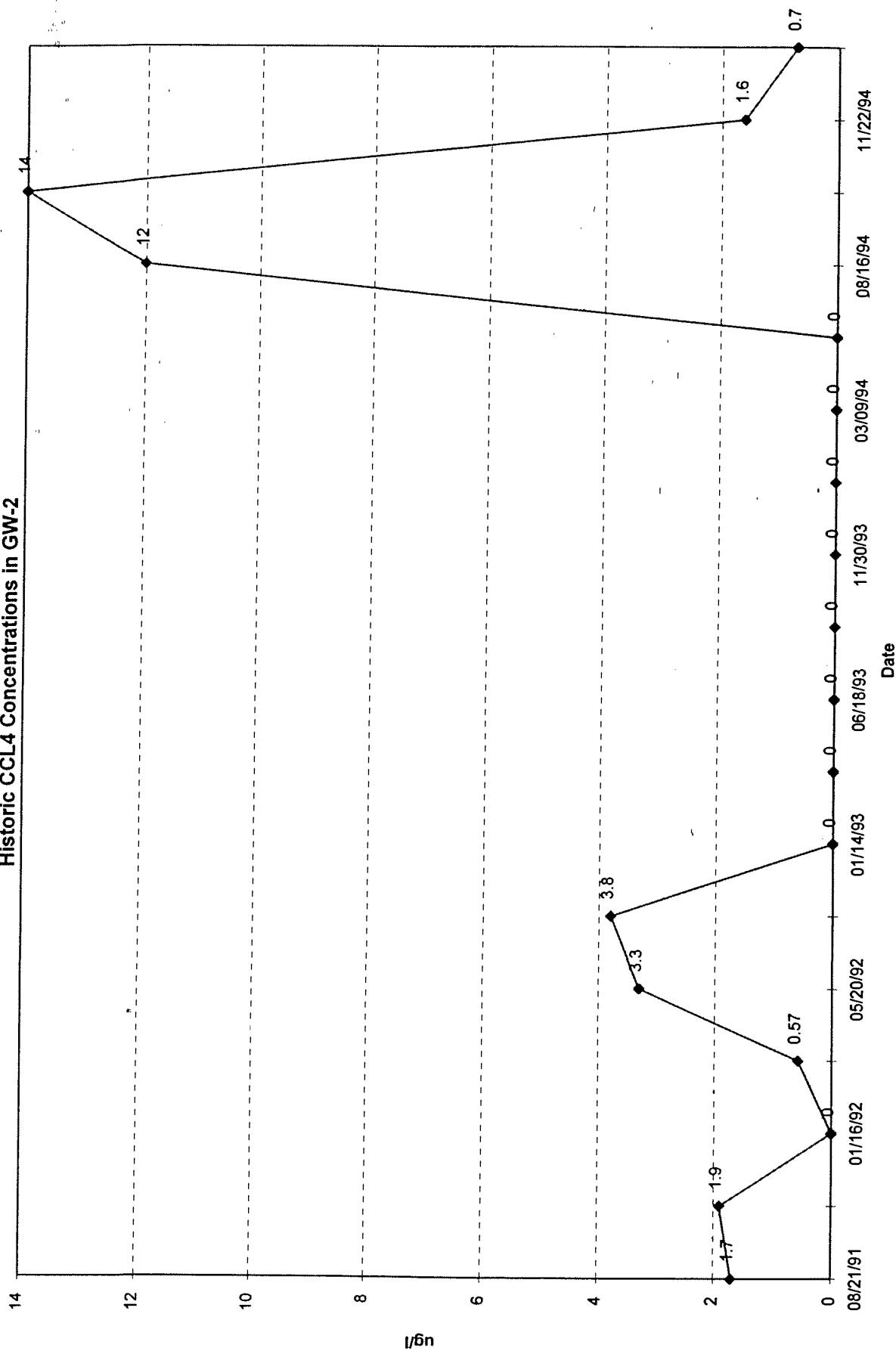


Figure 26

Historic TCE Concentrations in GW-2

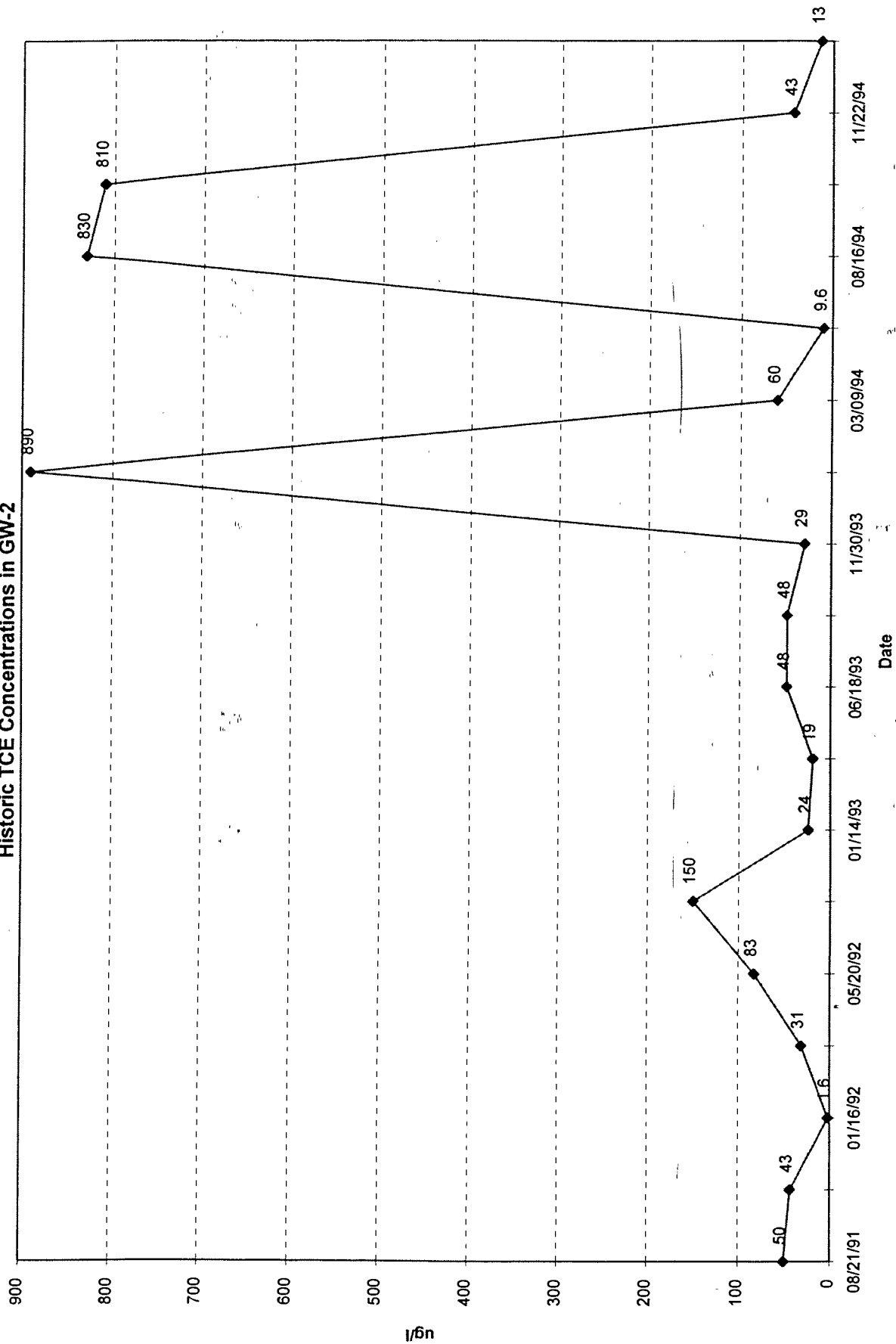


Figure 27
Historic PCE Concentrations in GW-2

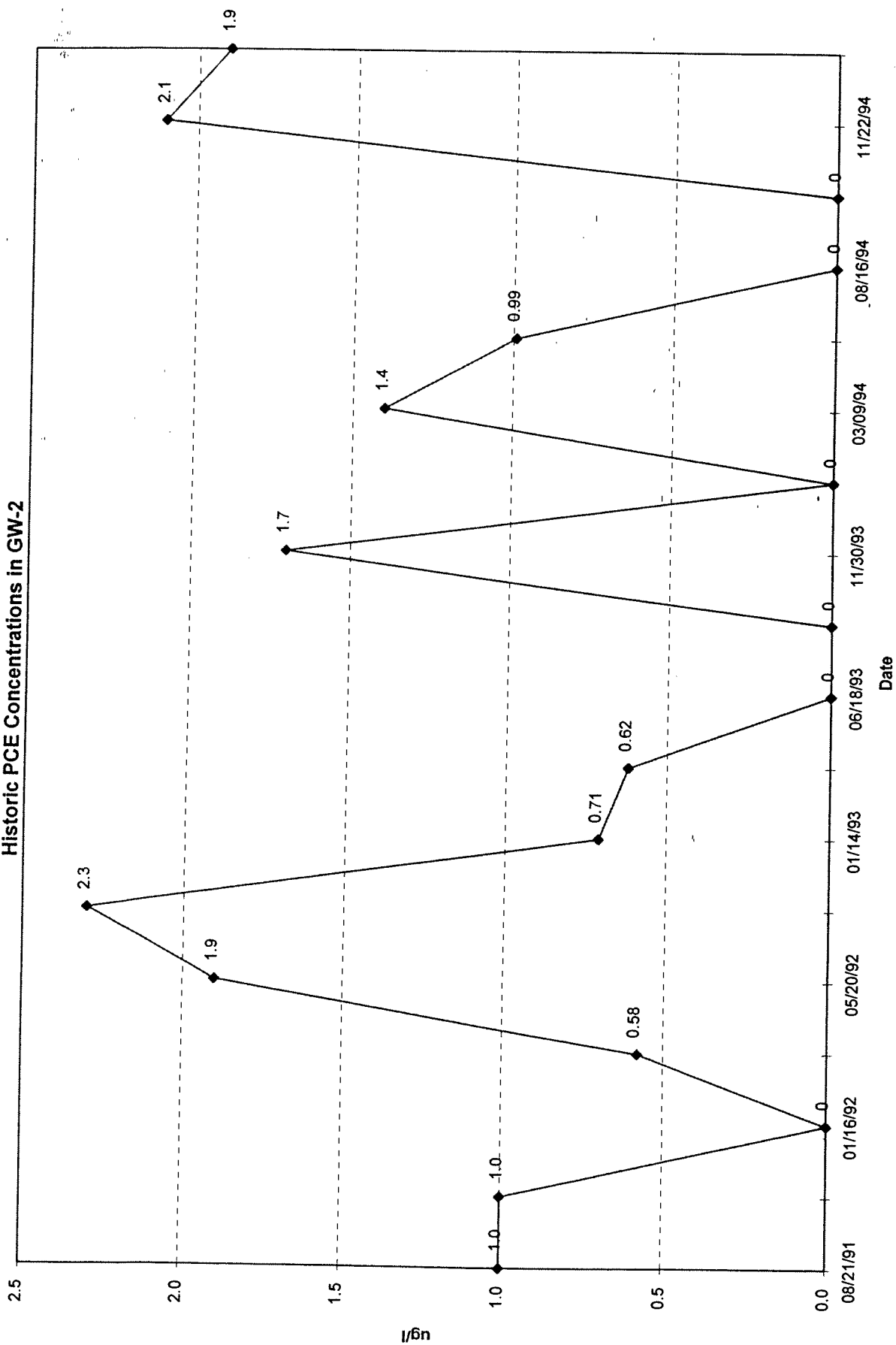


Figure 28
Historic Groundwater Elevations in GW-3

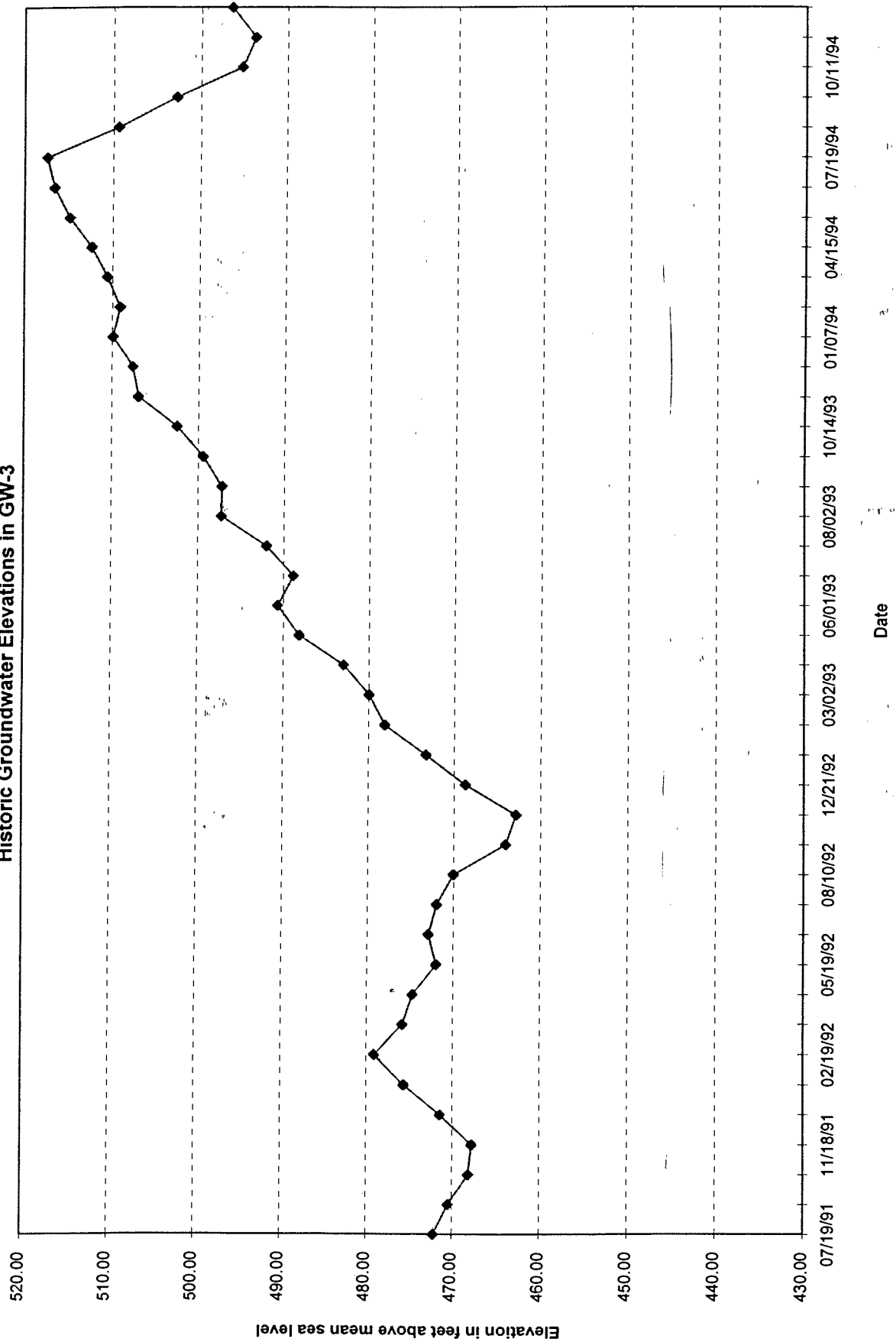


Figure 29
Historic Nitrate Concentrations in GW-3

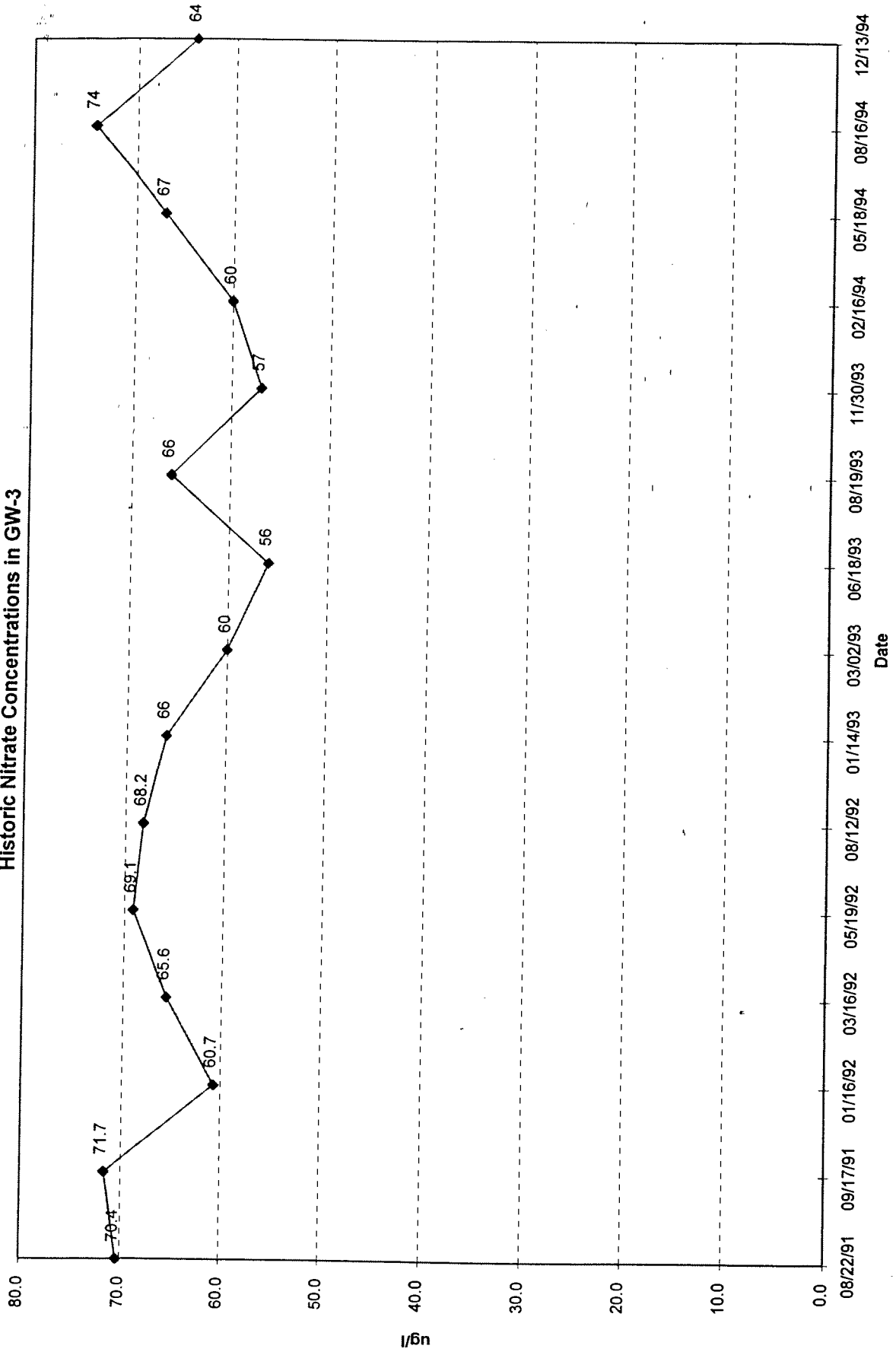


Figure 30
Historic 1,1,1-TCA Concentrations in GW-3

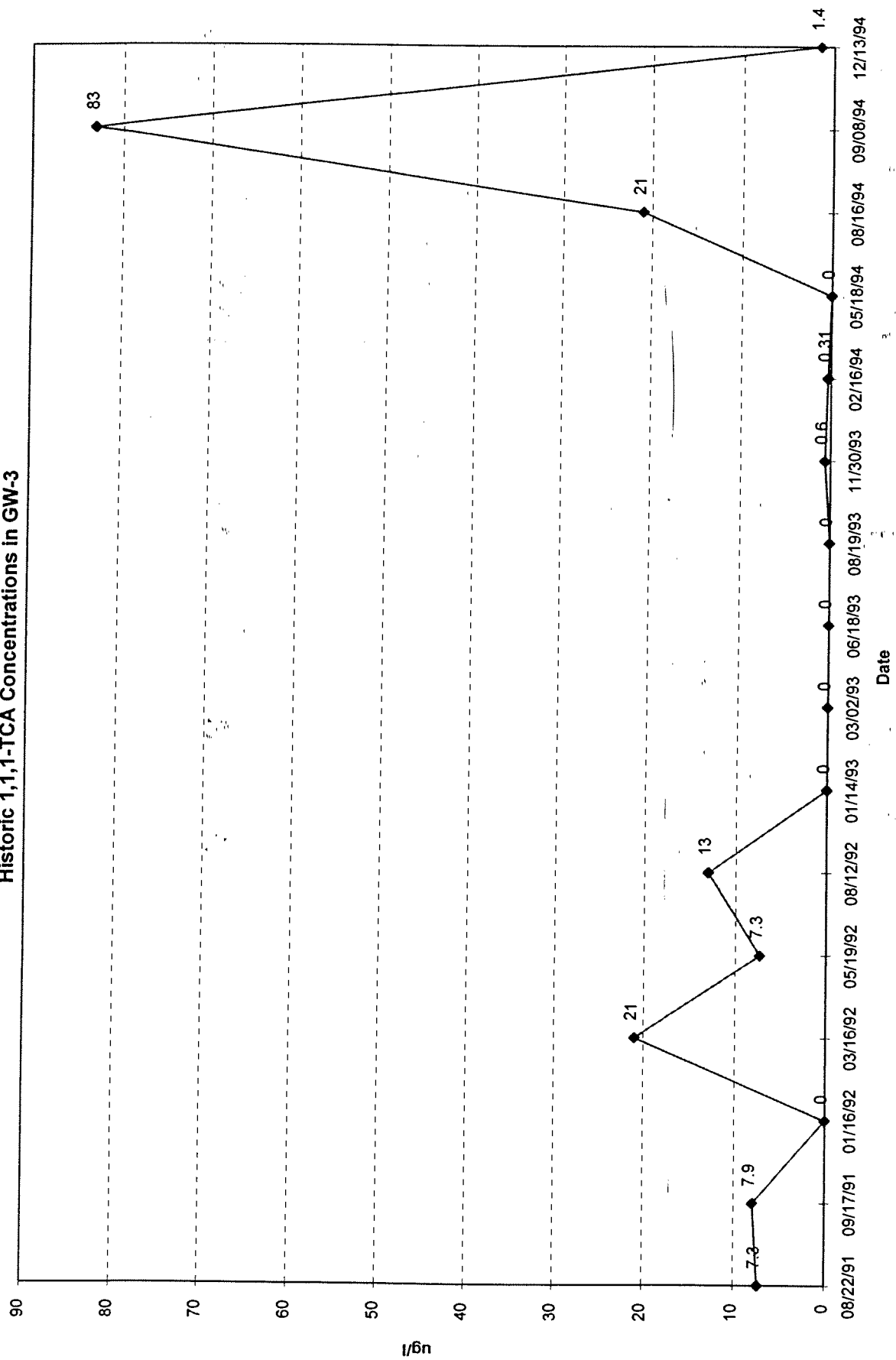


Figure 31
Historic 1,1-DCA Concentrations in GW-3

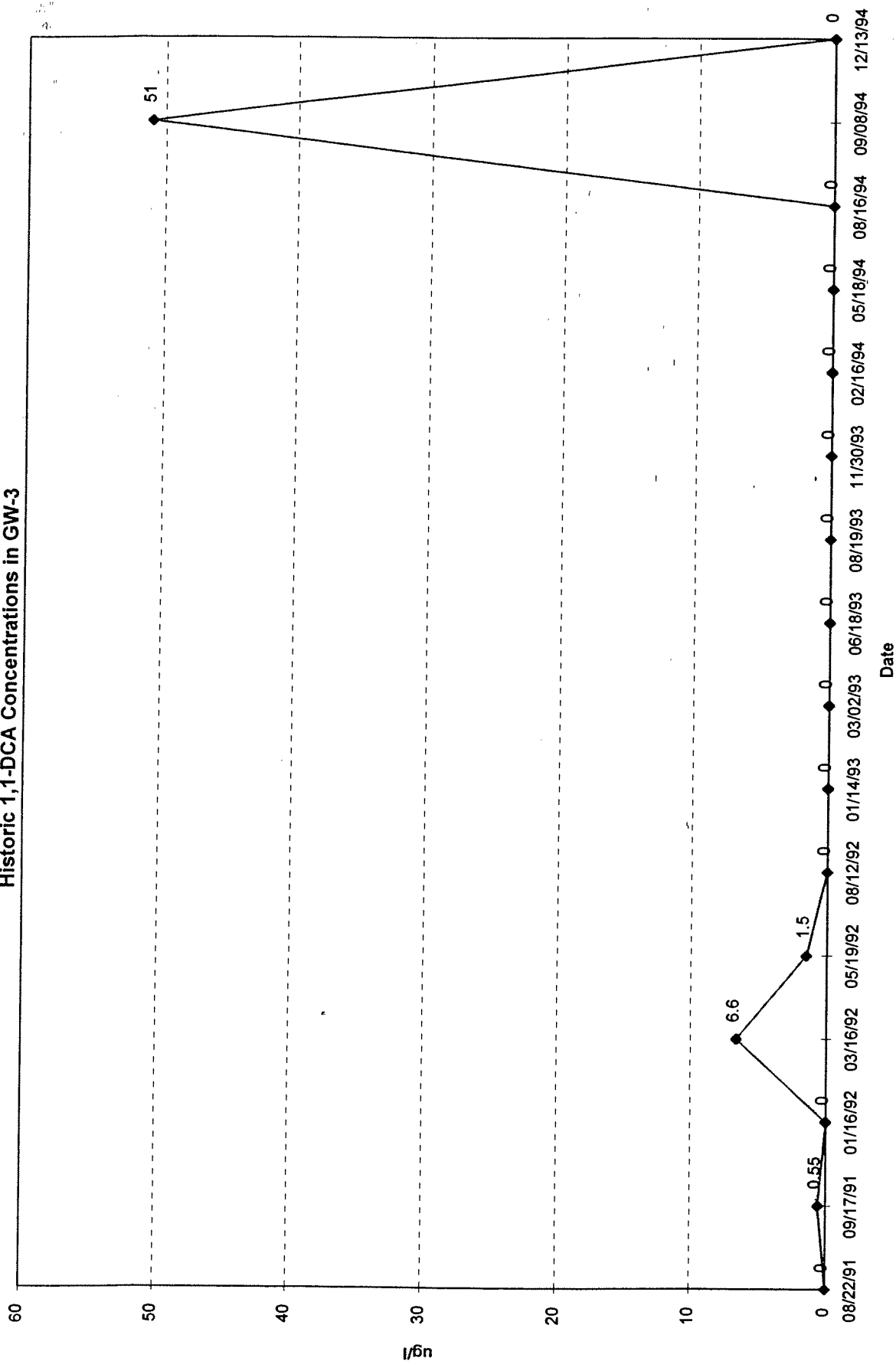


Figure 32
Historic 1,1-DCE Concentrations in GW-3

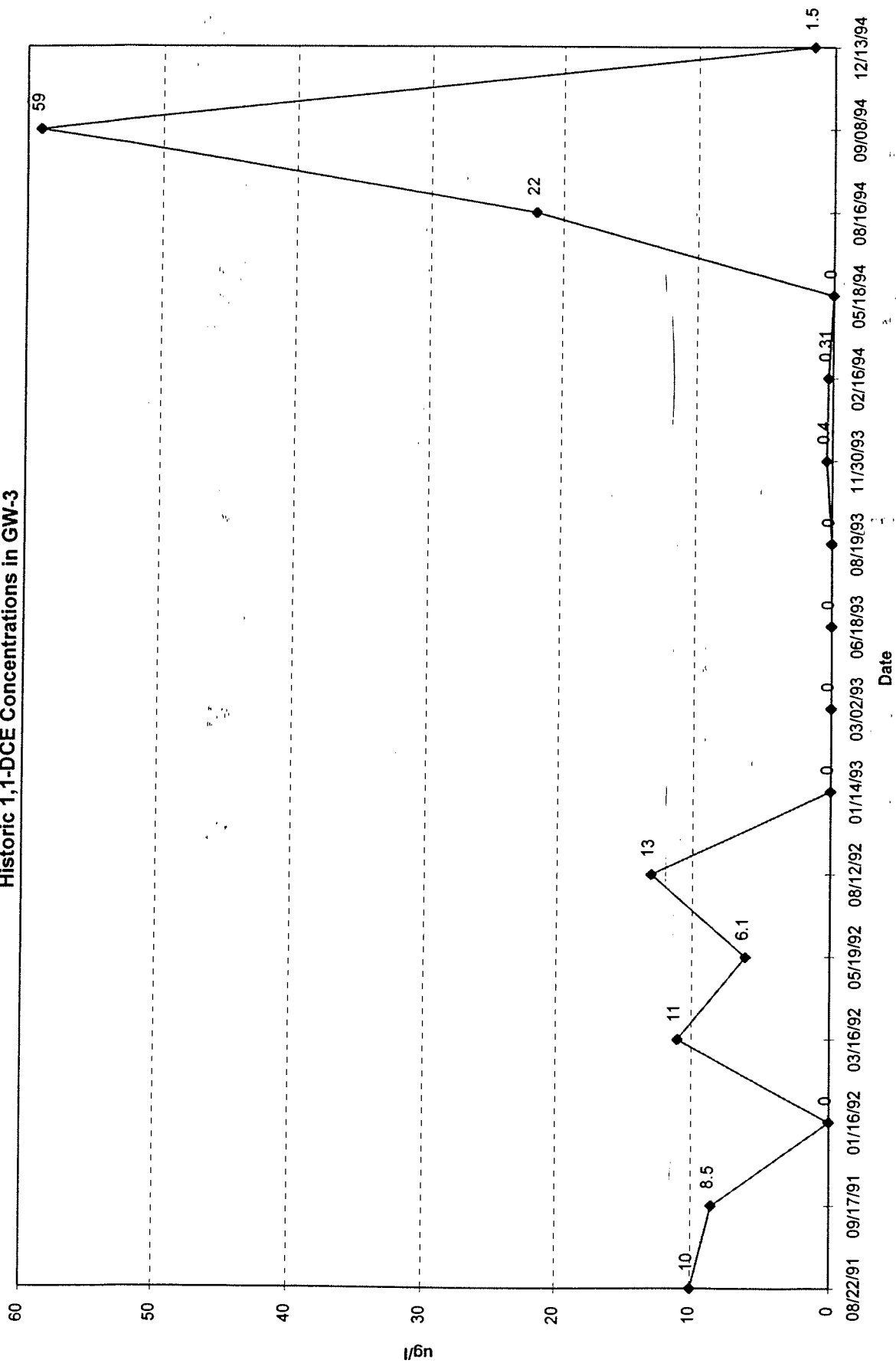


Figure 33
Historic TCE Concentrations in GW-3

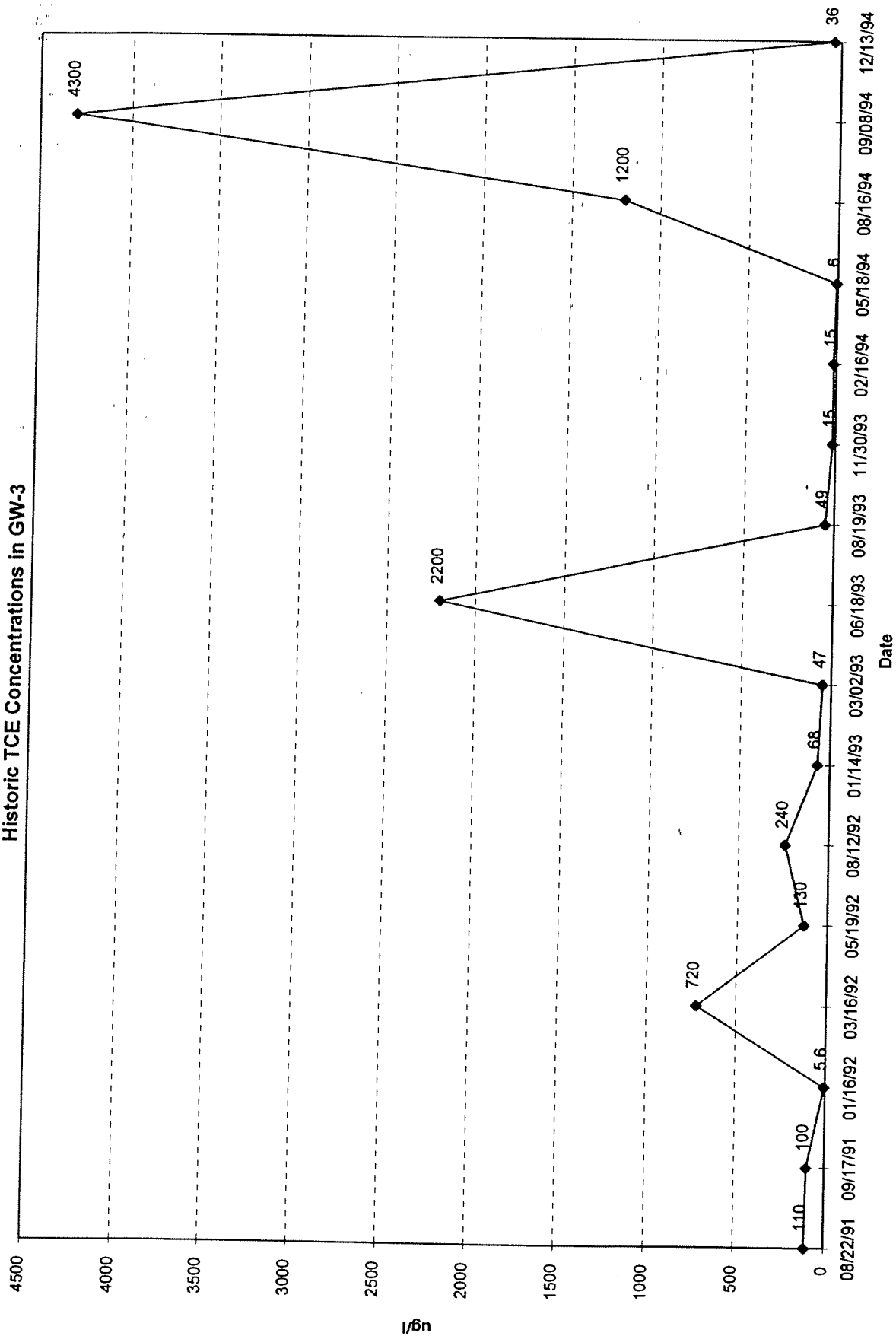


Figure 34
Historic PCE Concentrations in GW-3

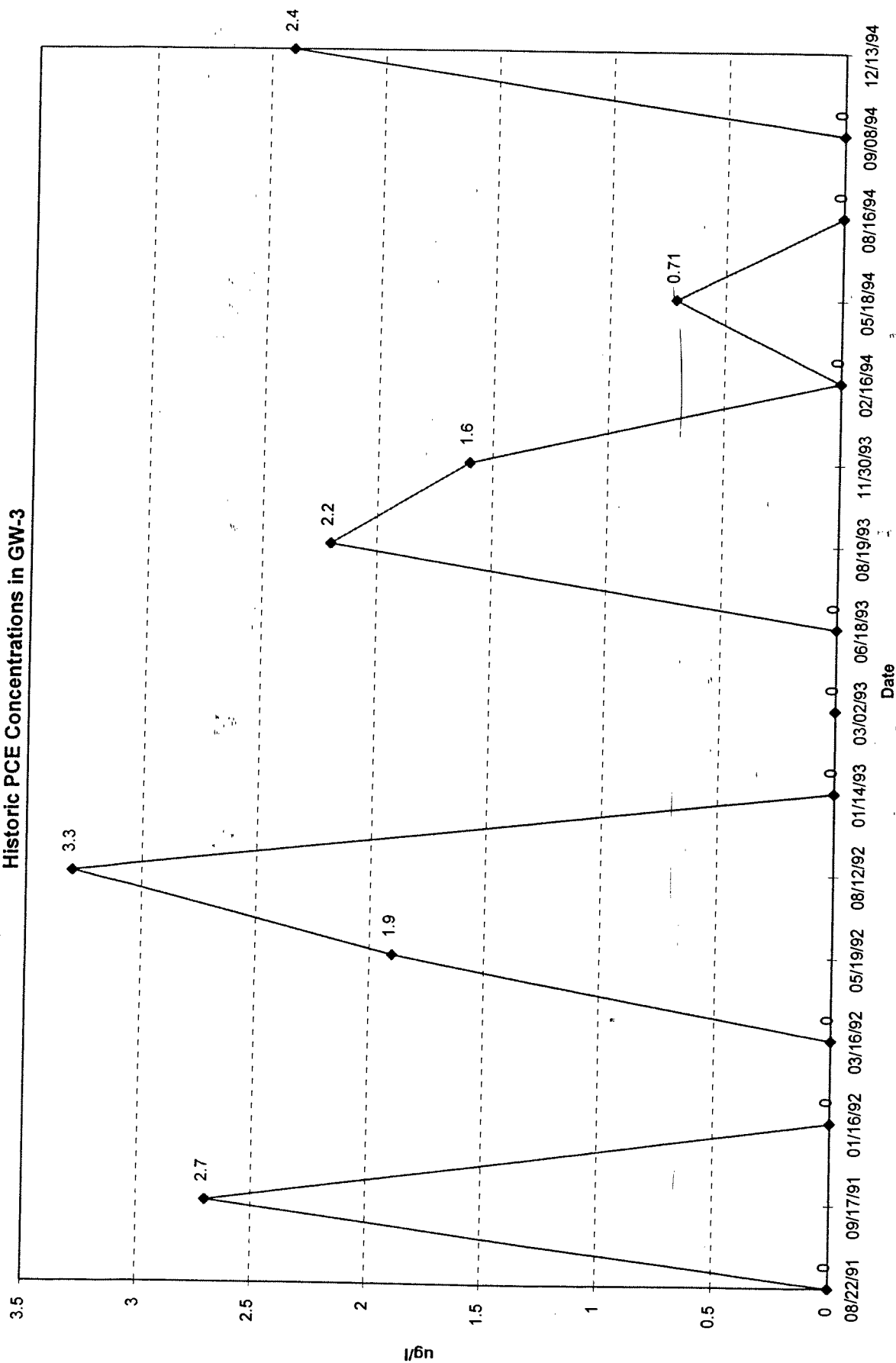


Figure 35
Historic CIS-1,2-DCE Concentrations in GW-3

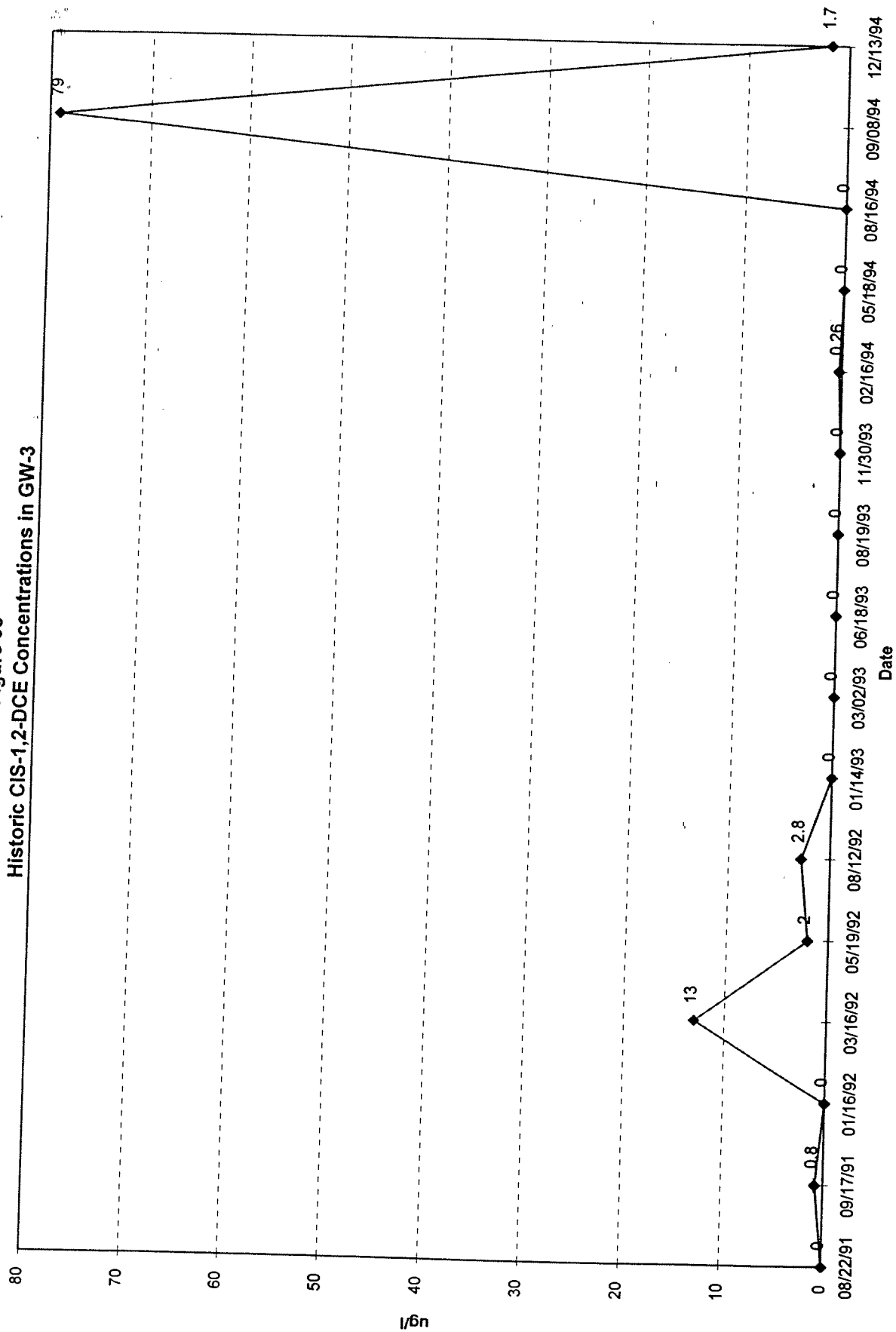


Figure 36
Historic Groundwater Elevations in GW-4

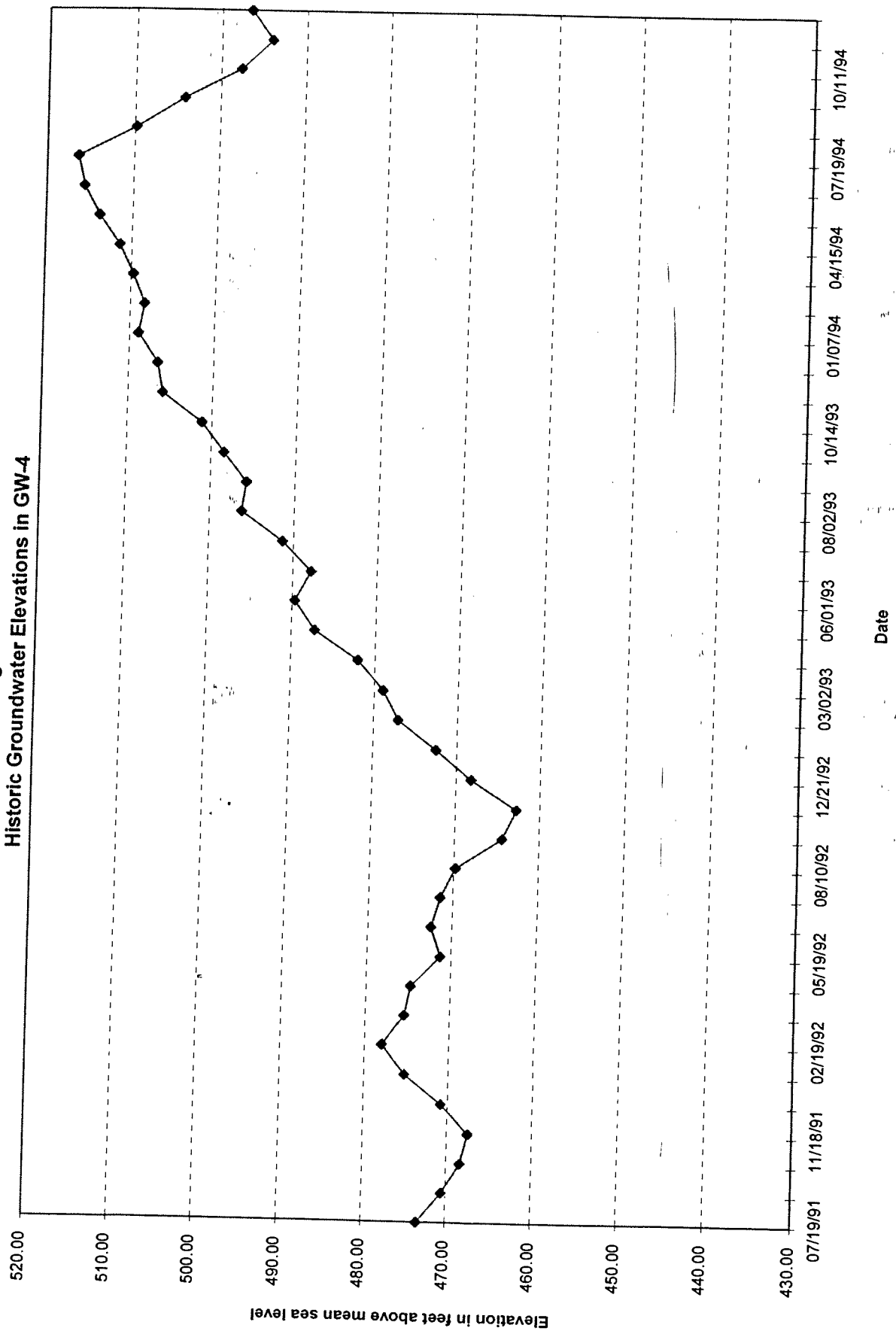


Figure 37
Historic Nitrate Concentrations in GW-4

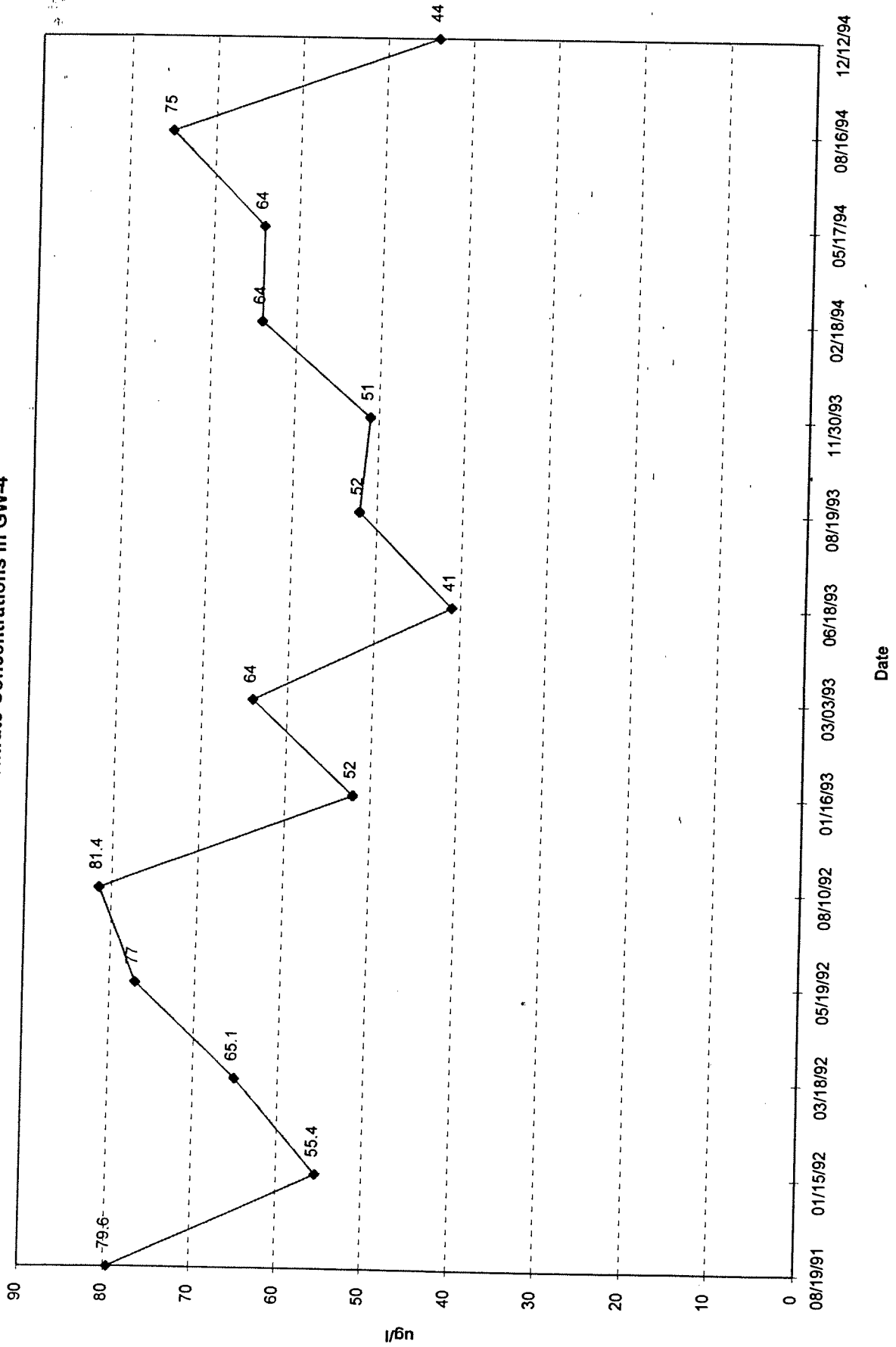


Figure 38
Historic 1,1,1-TCA Concentrations in GW-4

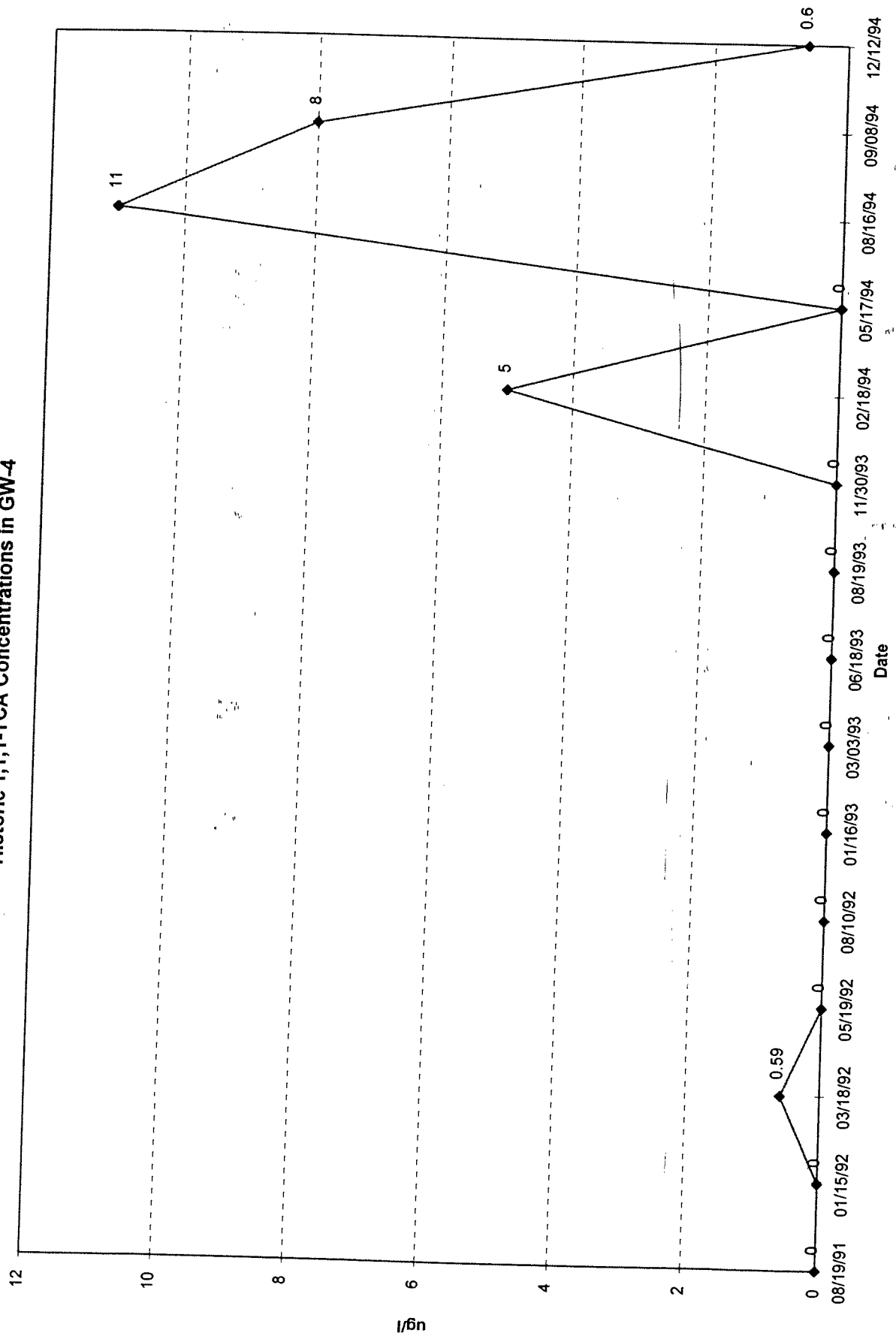


Figure 39
Historic 1,1-DCE Concentrations in GW-4

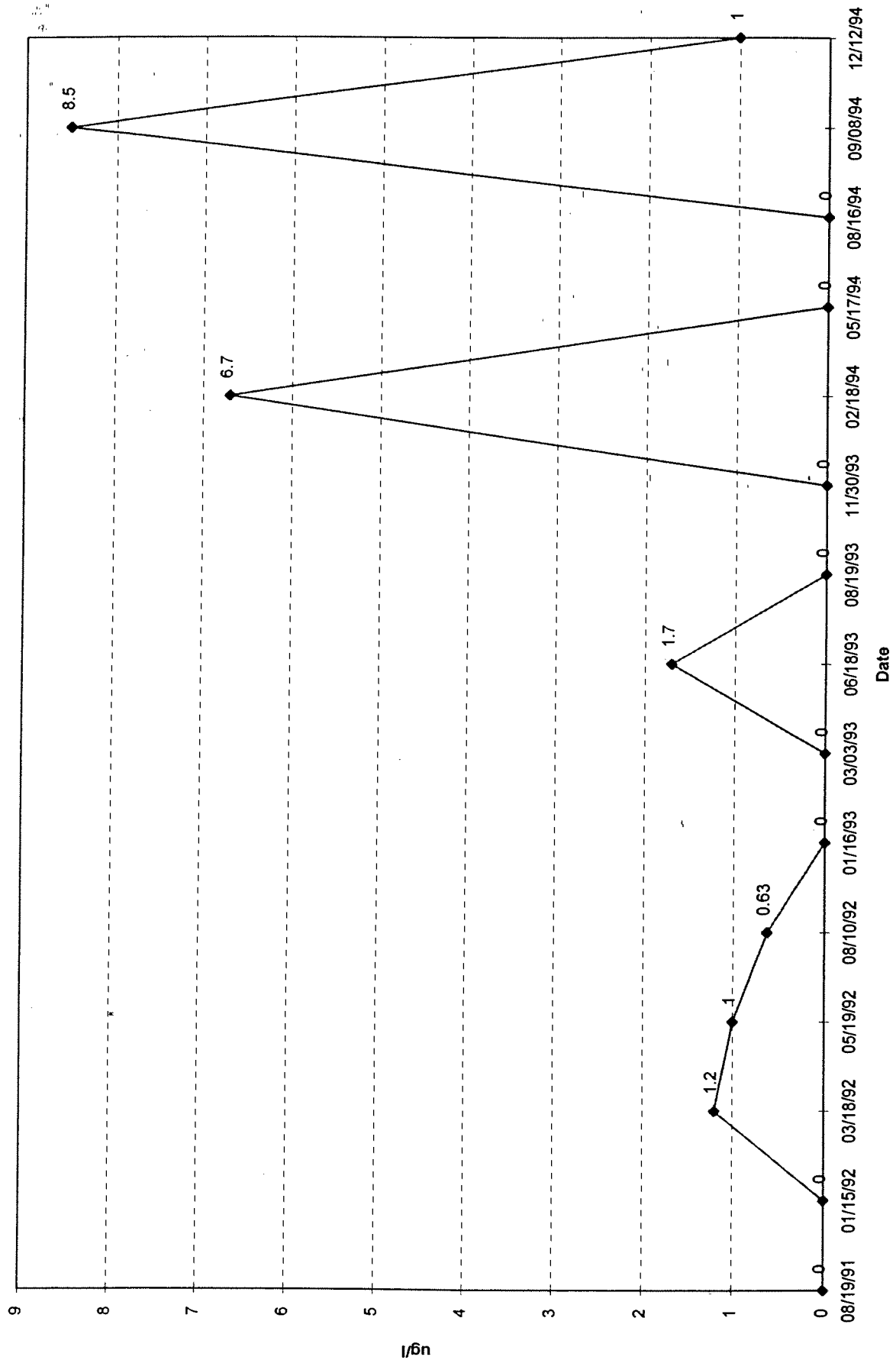


Figure 40
Historic CCL4 Concentrations in GW-4

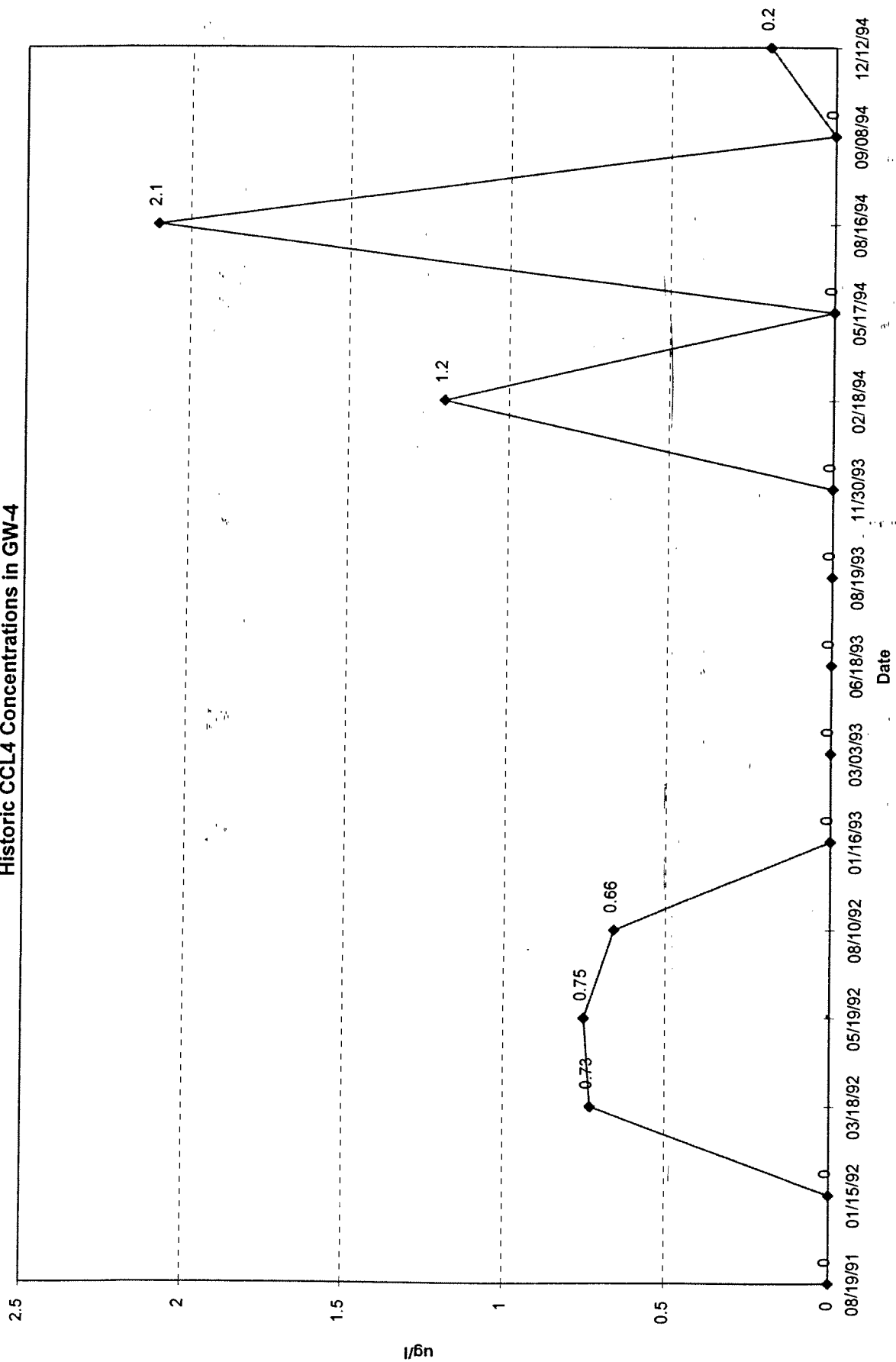


Figure 41
Historic TCE Concentrations in GW-4

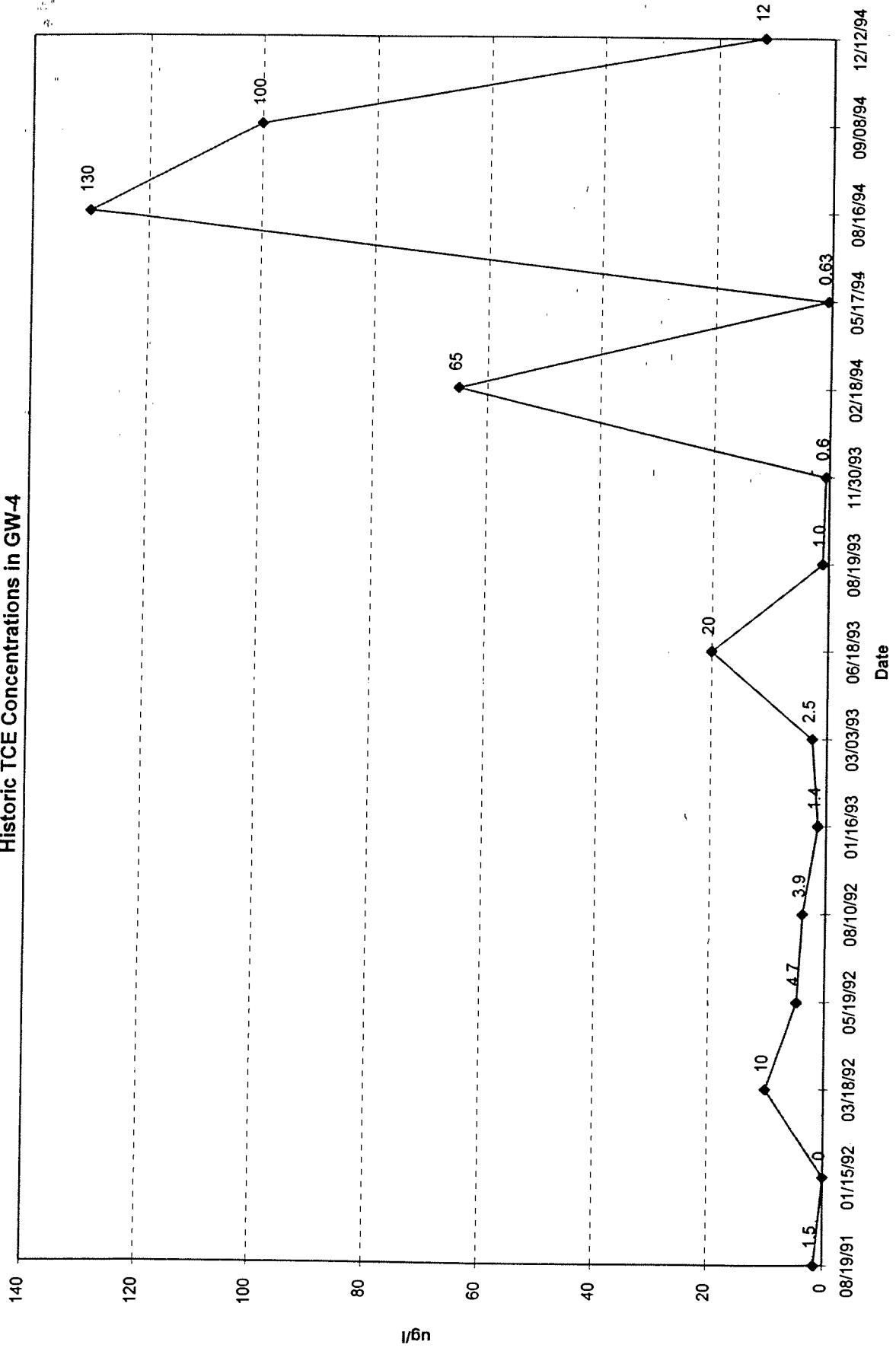


Figure 42
Historic PCE Concentrations in GW-4

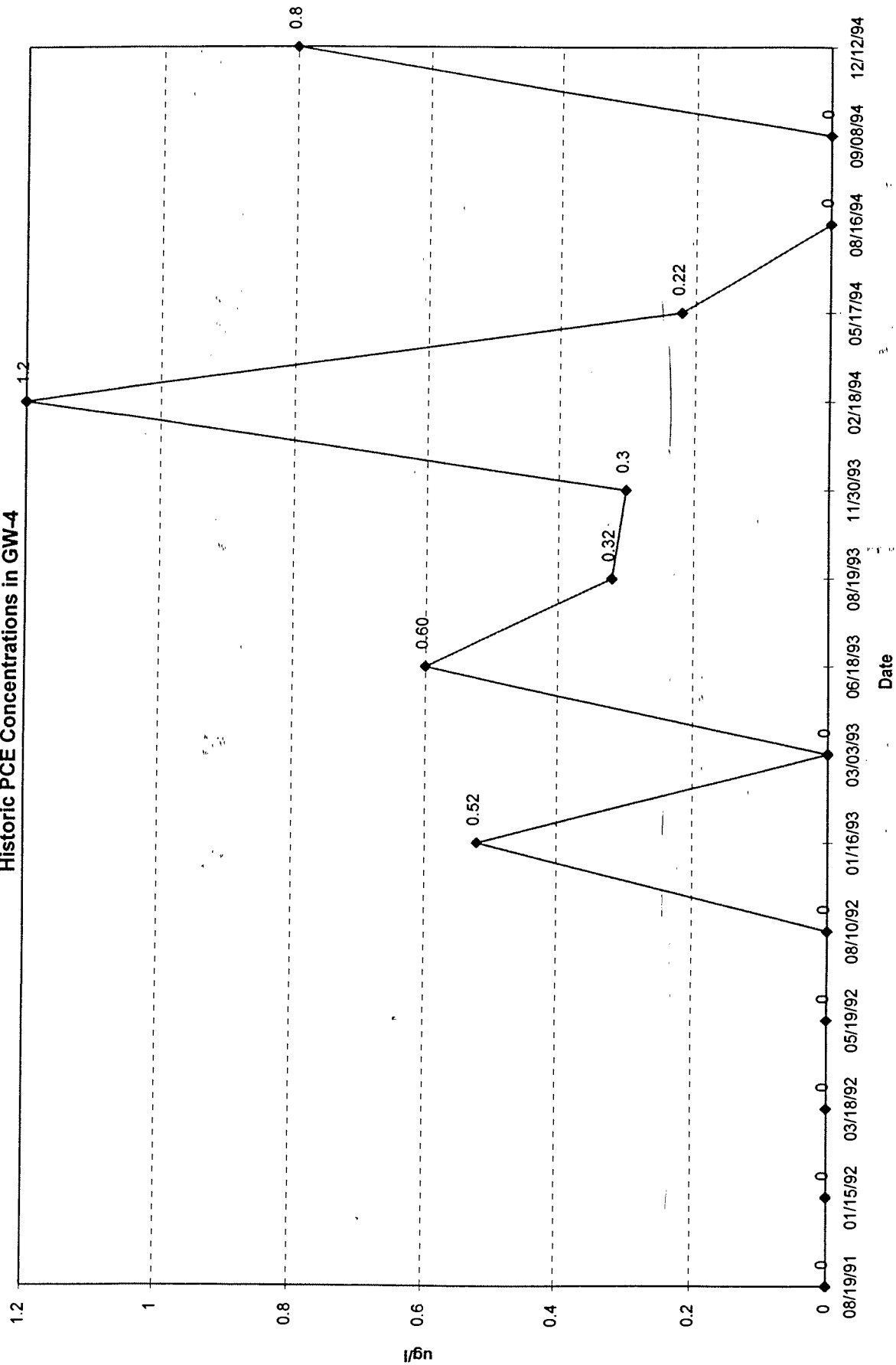


Figure 43
Historic Groundwater Elevations in GW-5

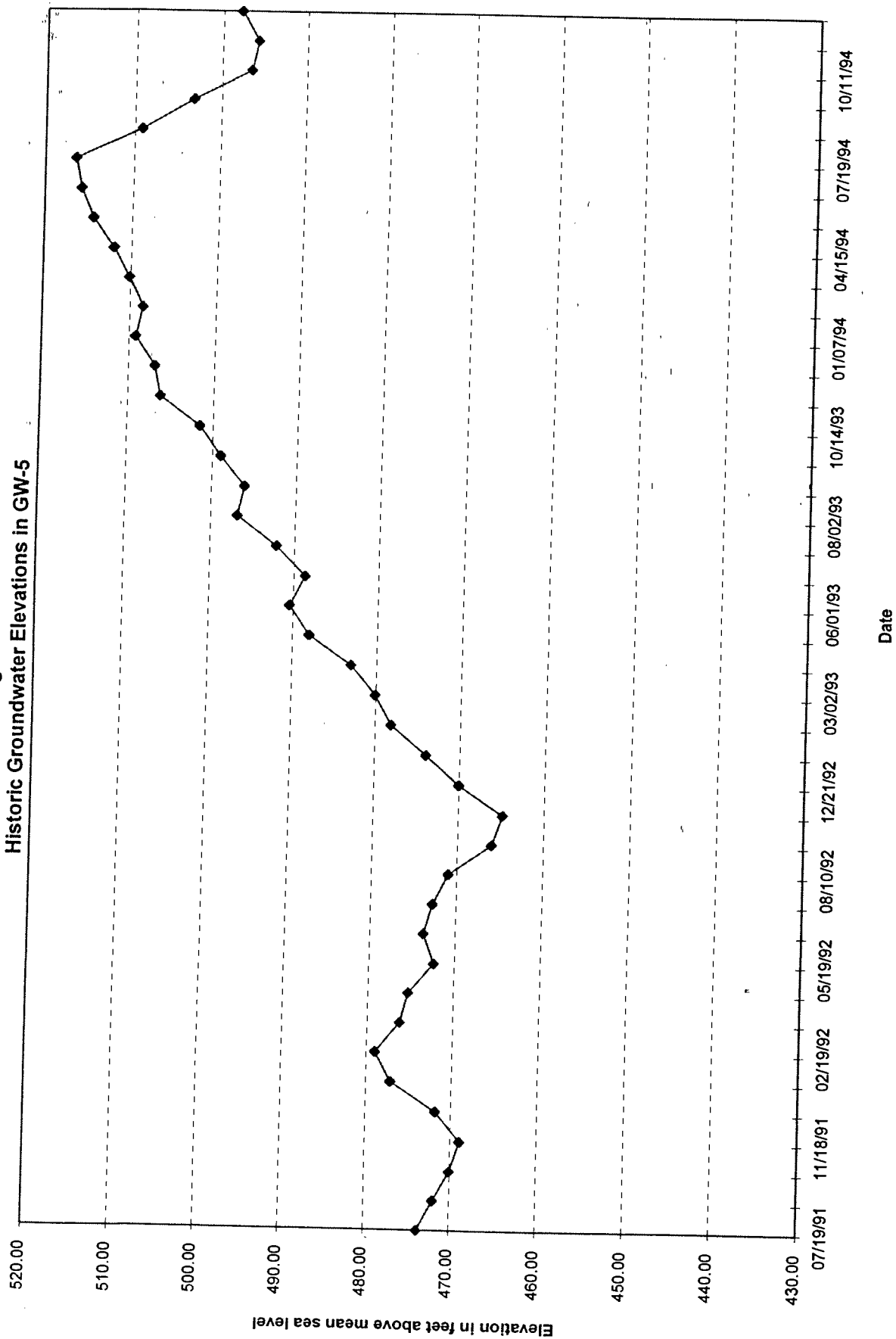
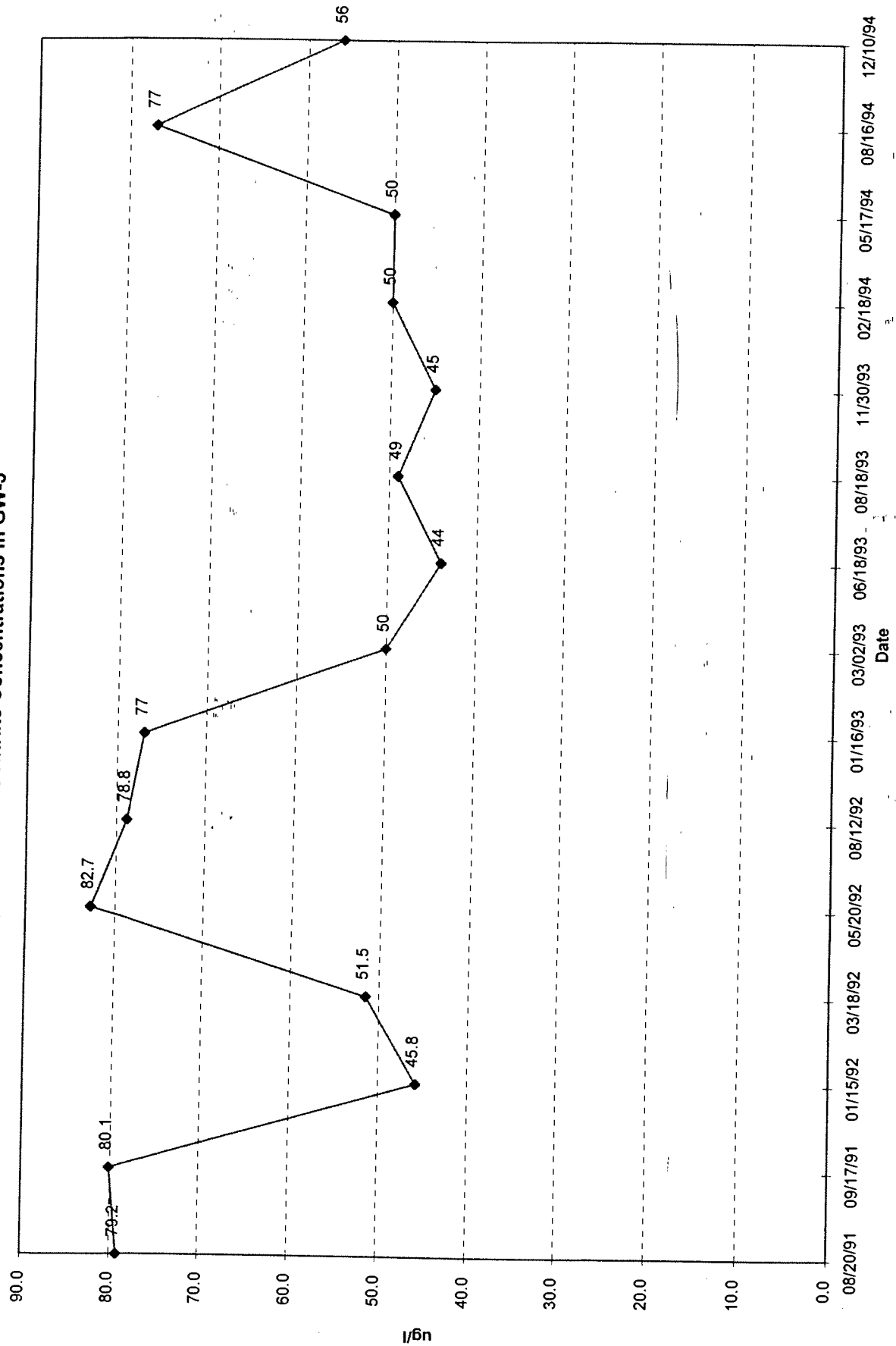


Figure 44
Historic Nitrate Concentrations in GW-5



003453

Figure 45
Historic TCE Concentrations in GW-5

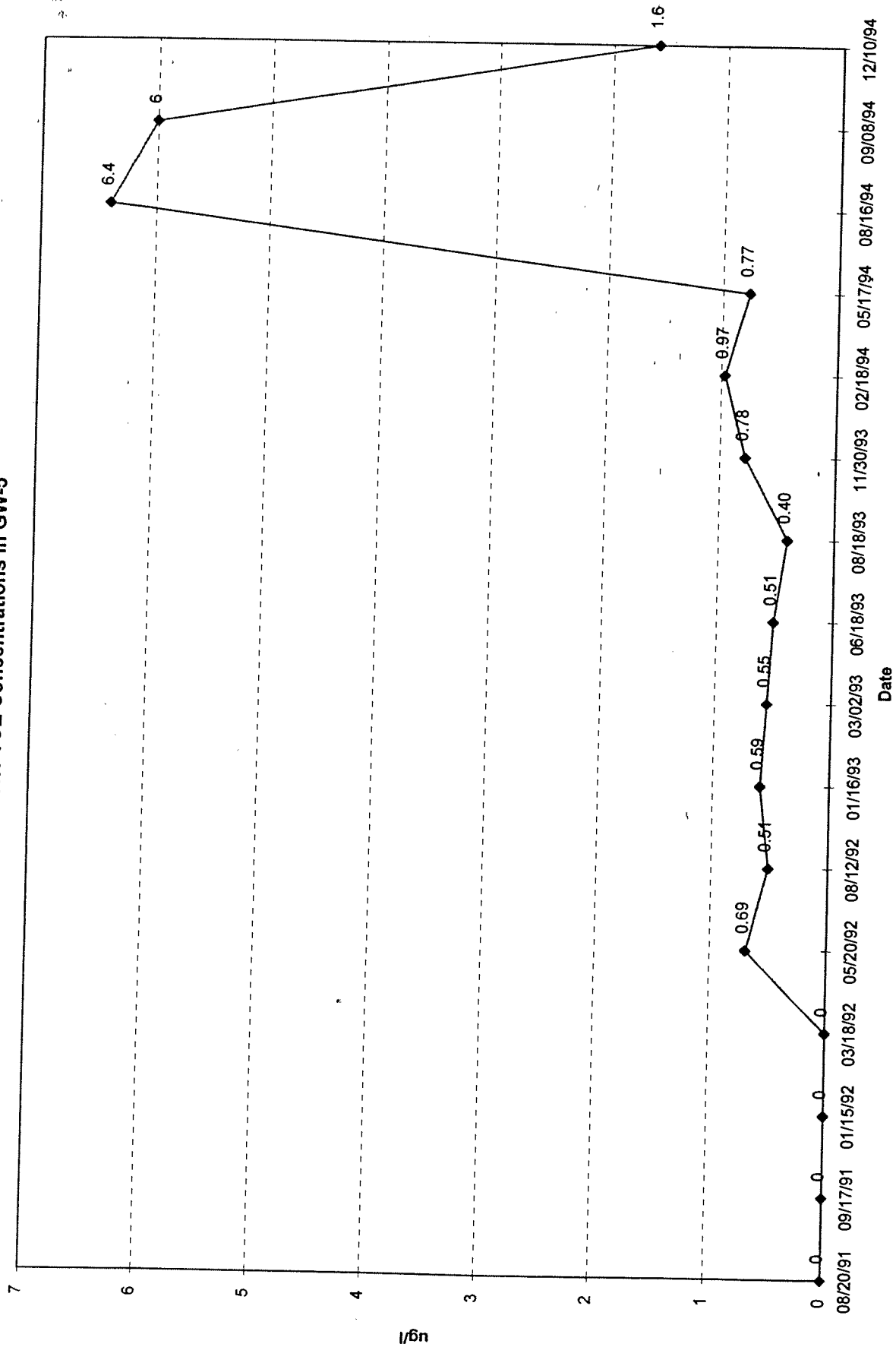


Figure 46
Historic PCE Concentrations in GW-5

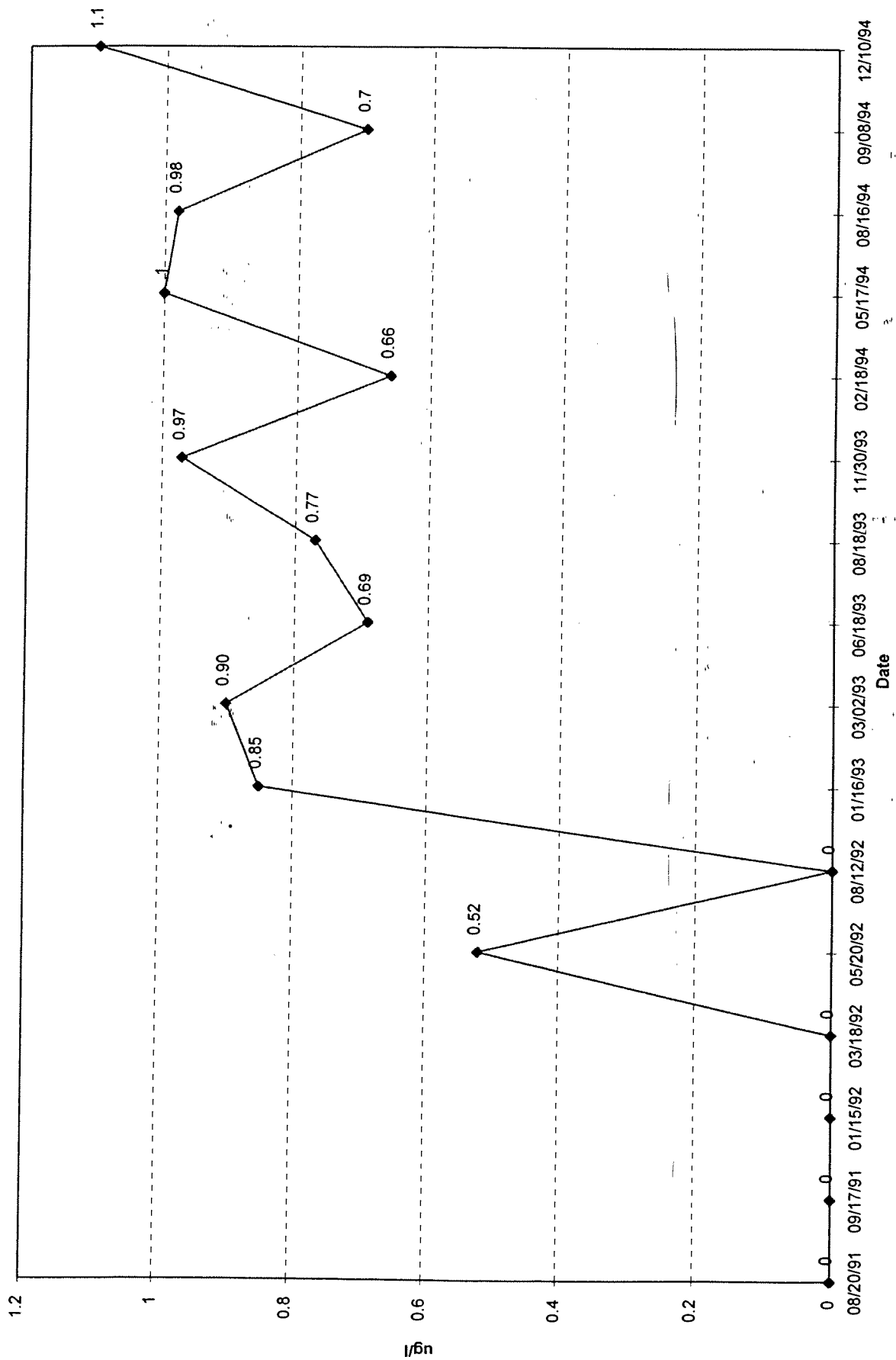


Figure 47
 Historic CIS-1,2-DCE Concentrations in GW-5

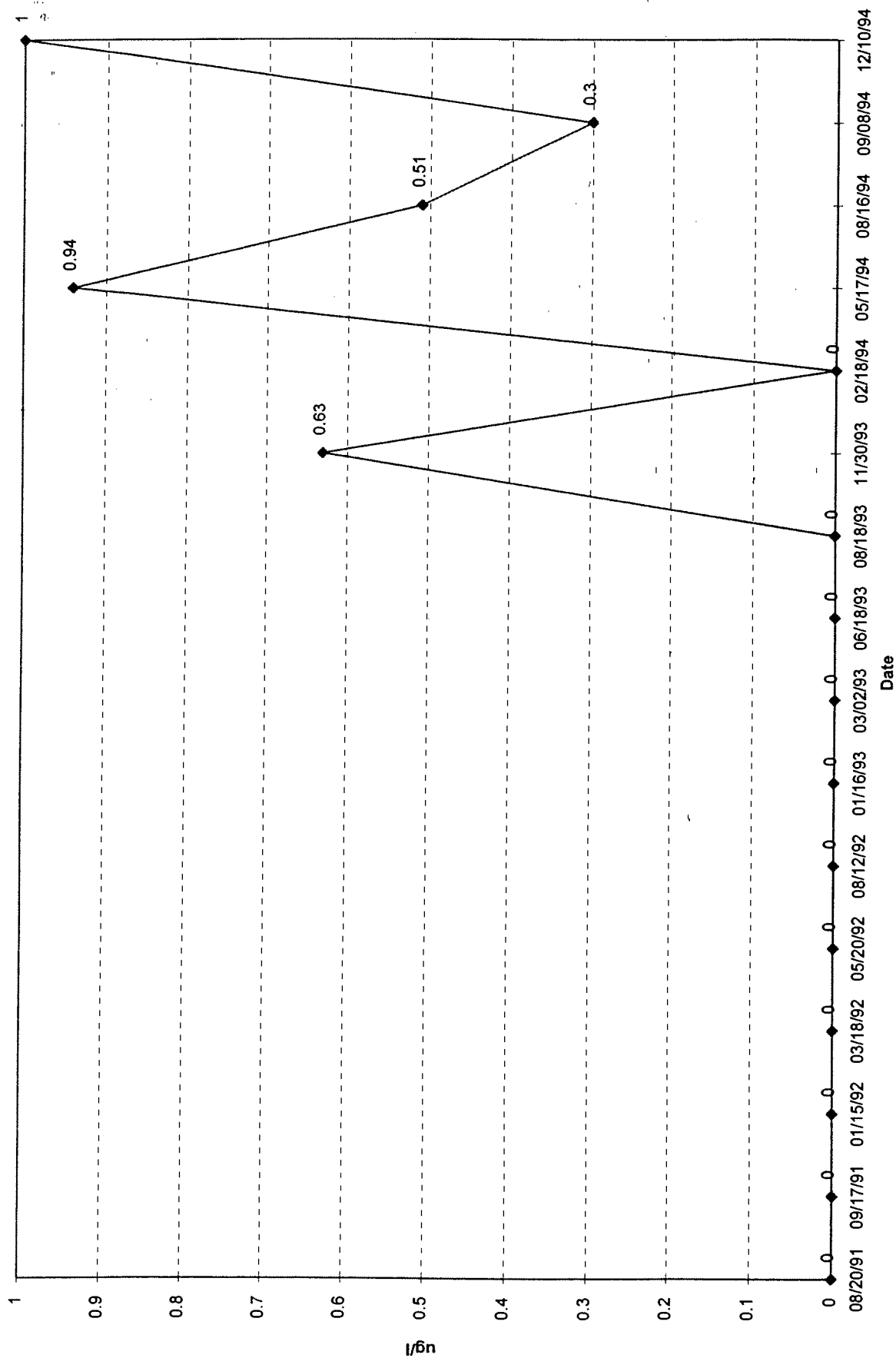


Figure 48
Historic Groundwater Elevations in GW-6

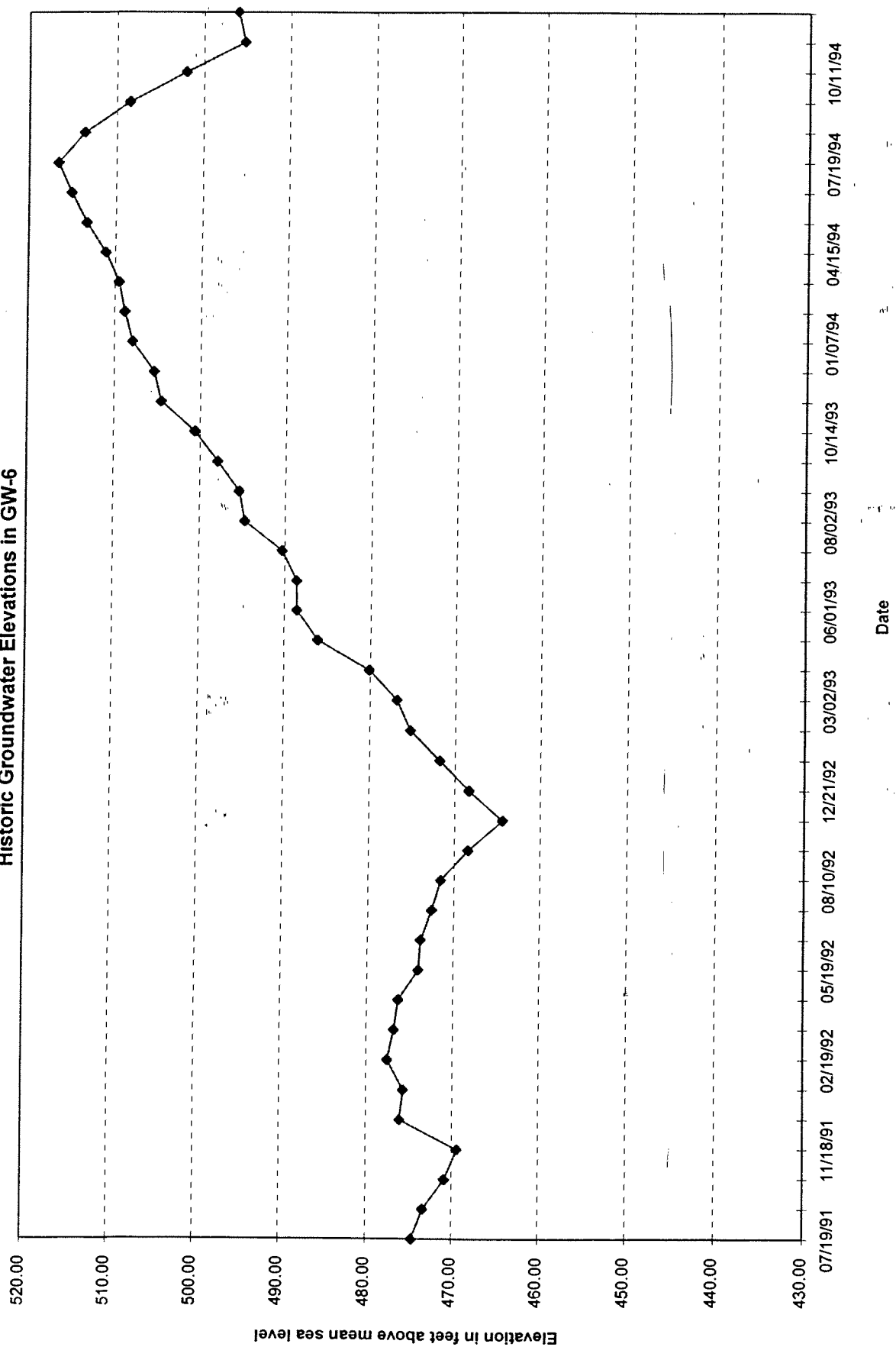


Figure 49
Historic Nitrate Concentrations in GW-6

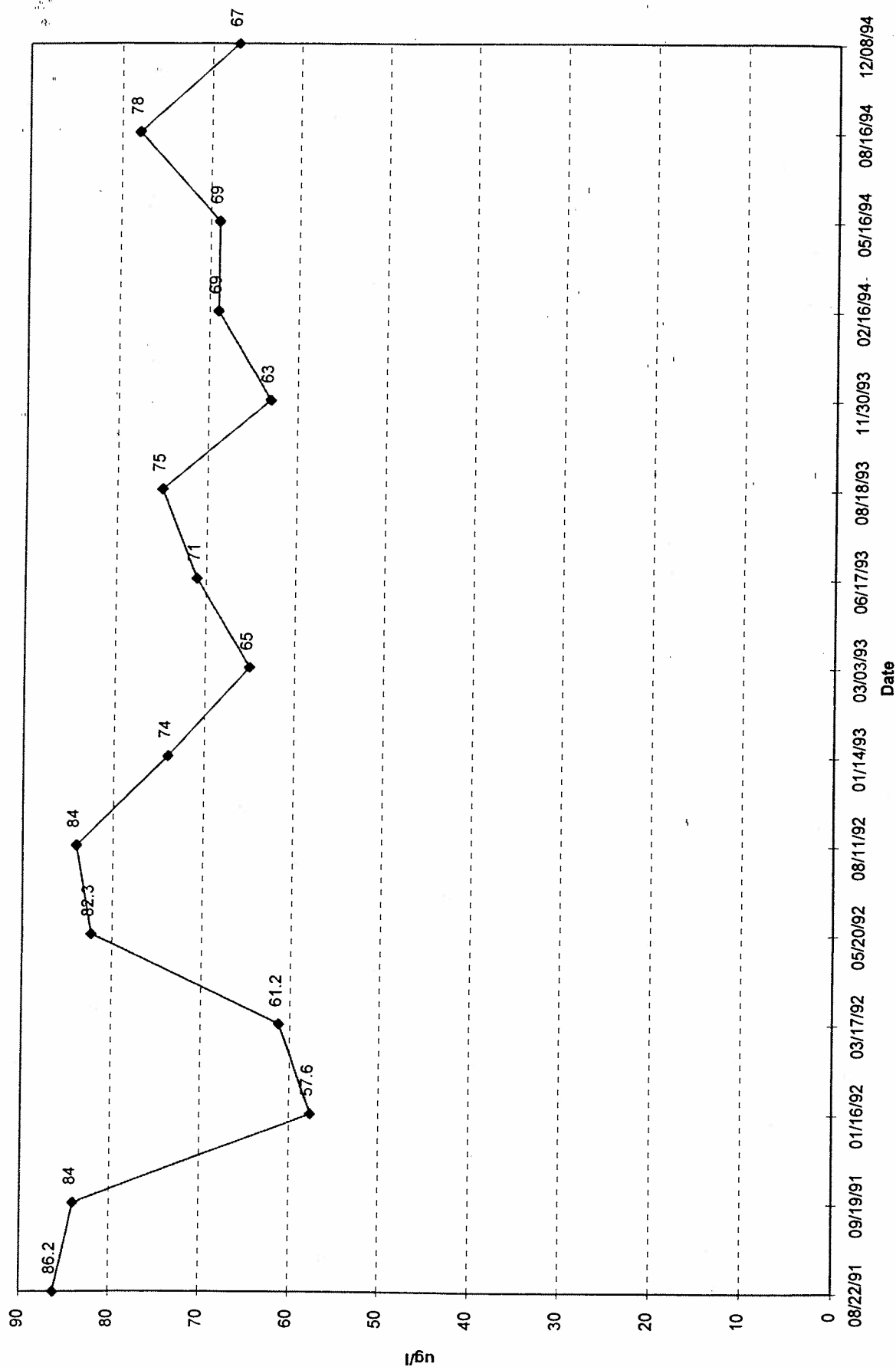


Figure 50
Historic TCE Concentrations in GW-6

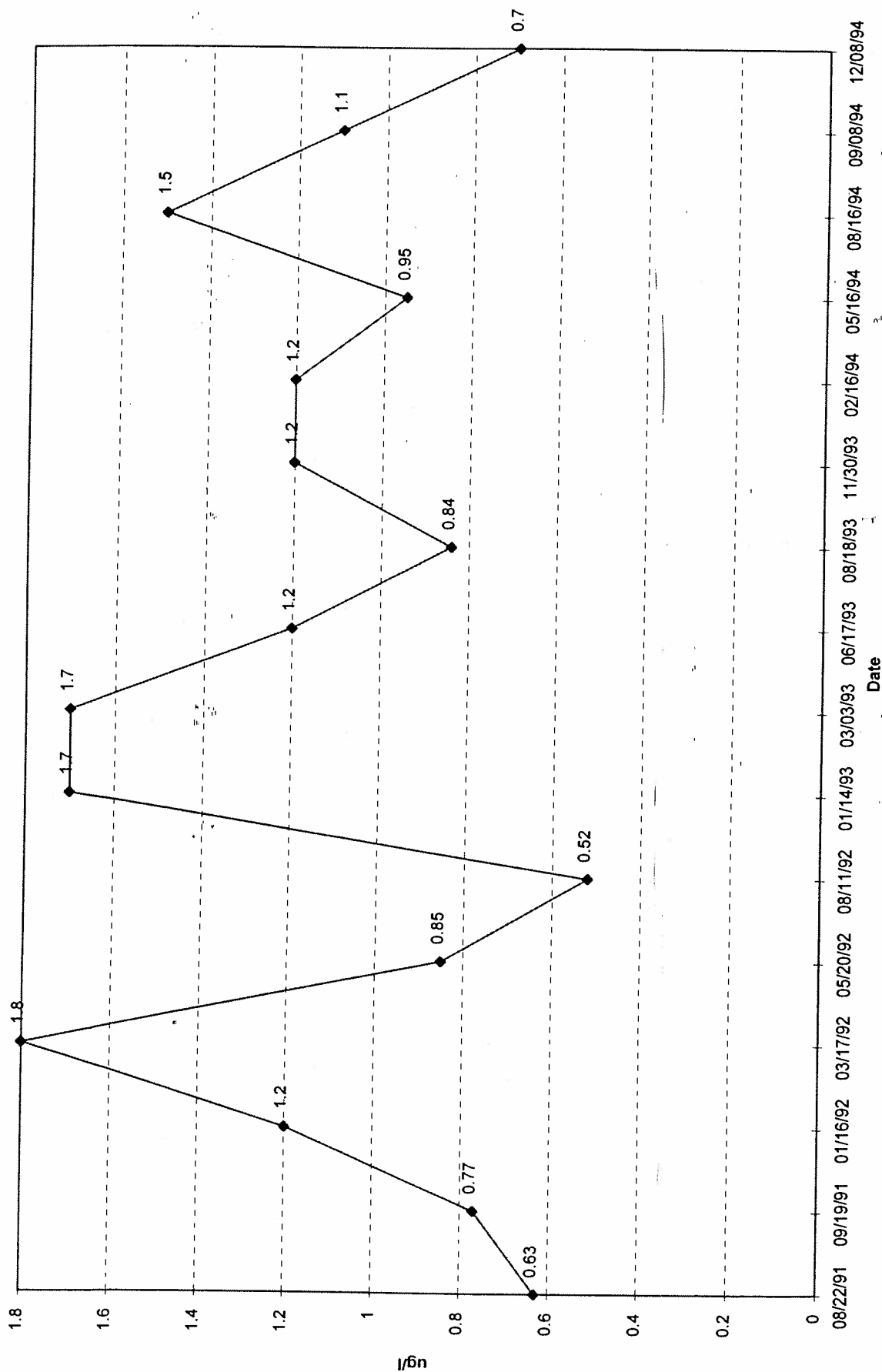


Figure 51
Historic PCE Concentrations in GW-6

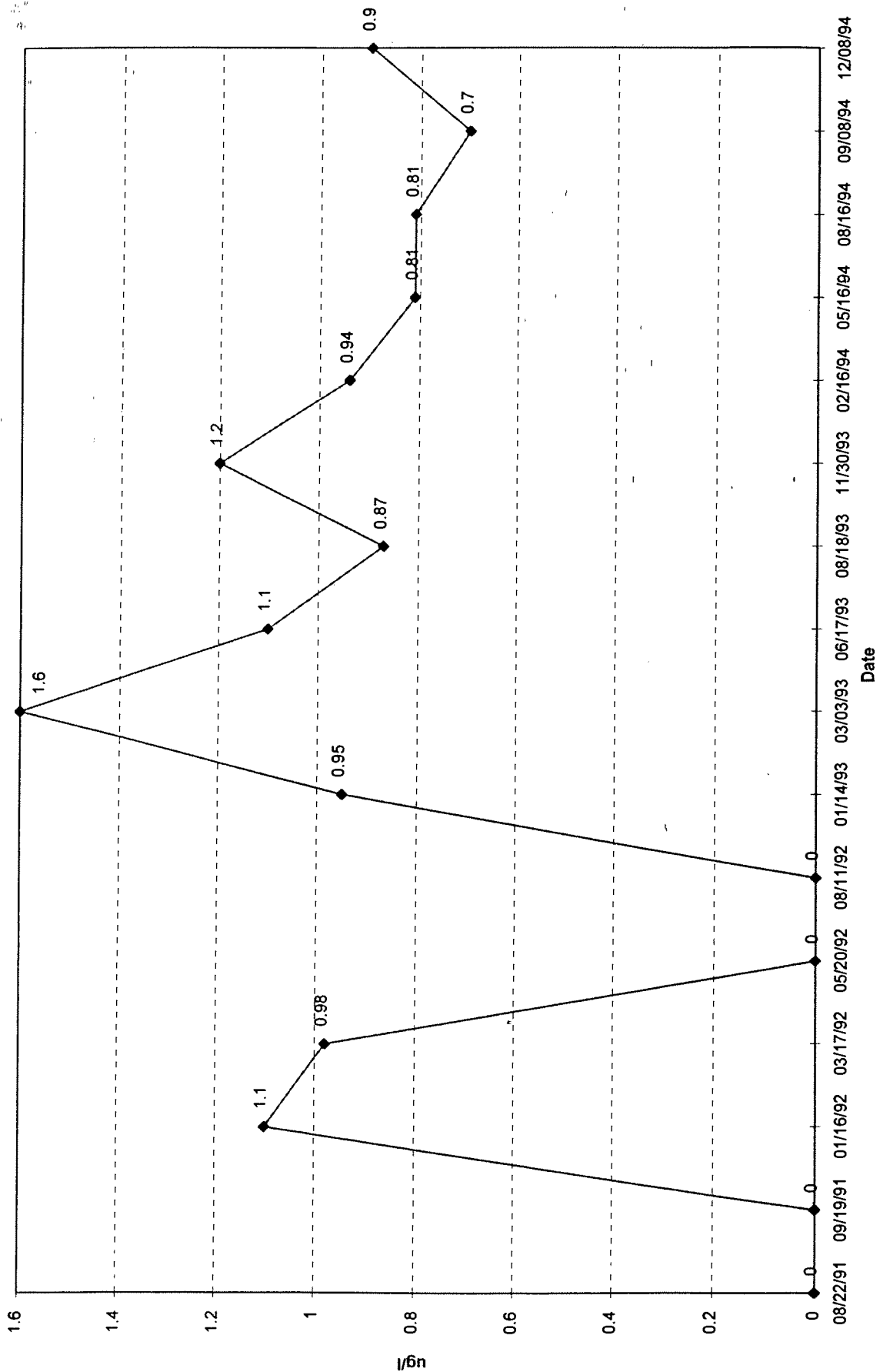


Figure 52
Historic CIS-1,2-DCE in GW-6

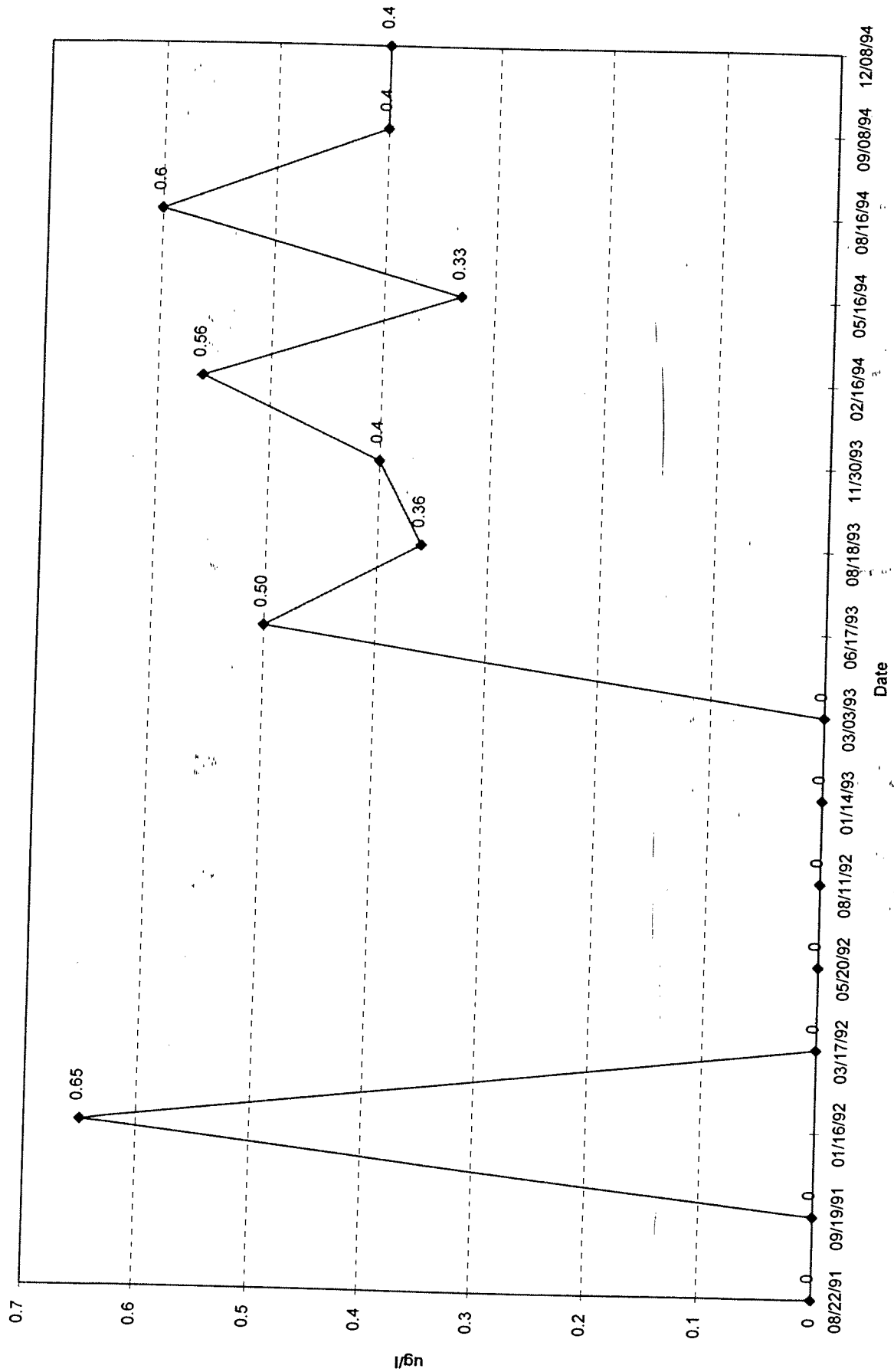


Figure 53
Historic Groundwater Elevations in GW-7

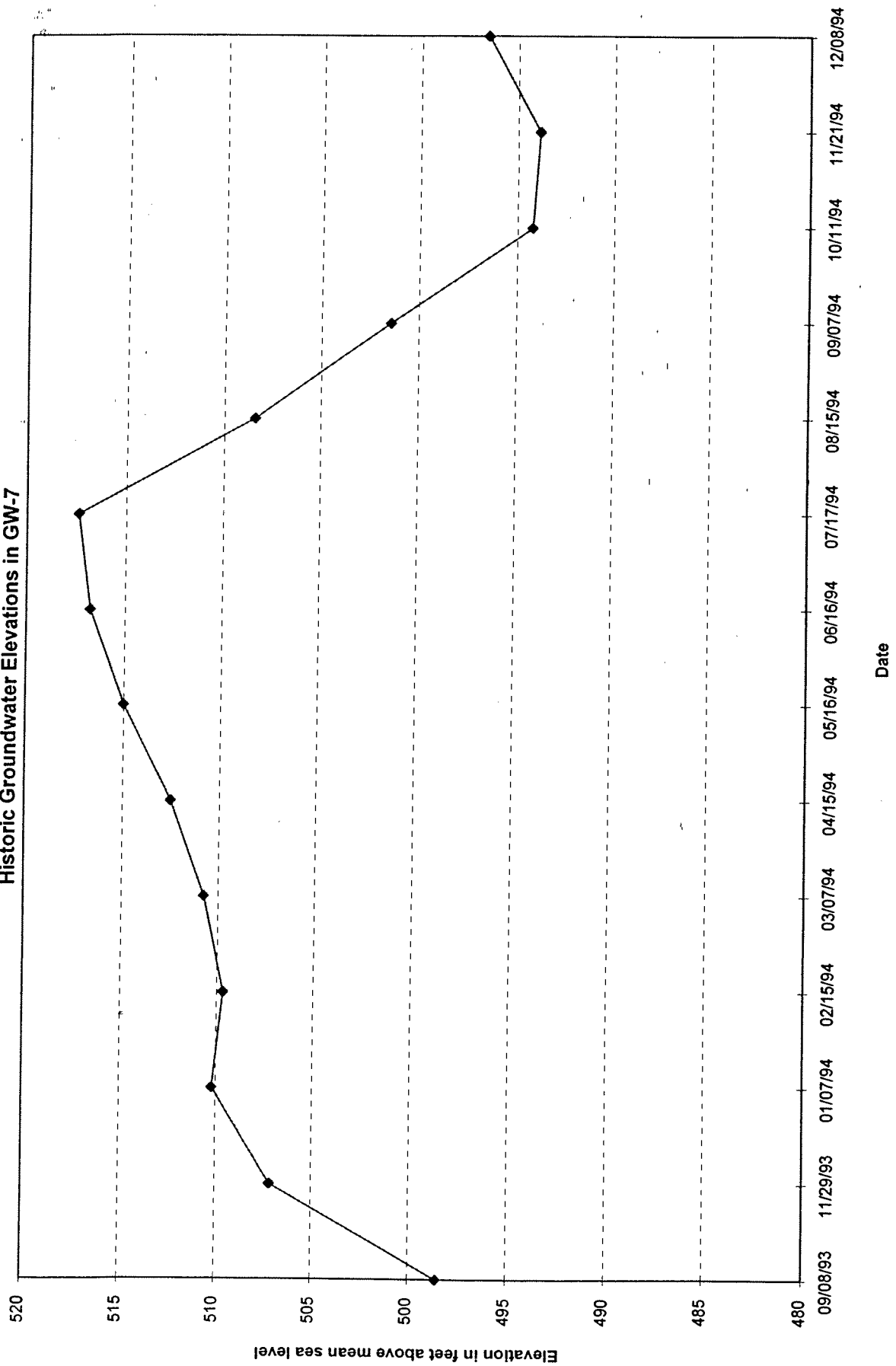


Figure 54
Historic Nitrate Concentrations in GW-7

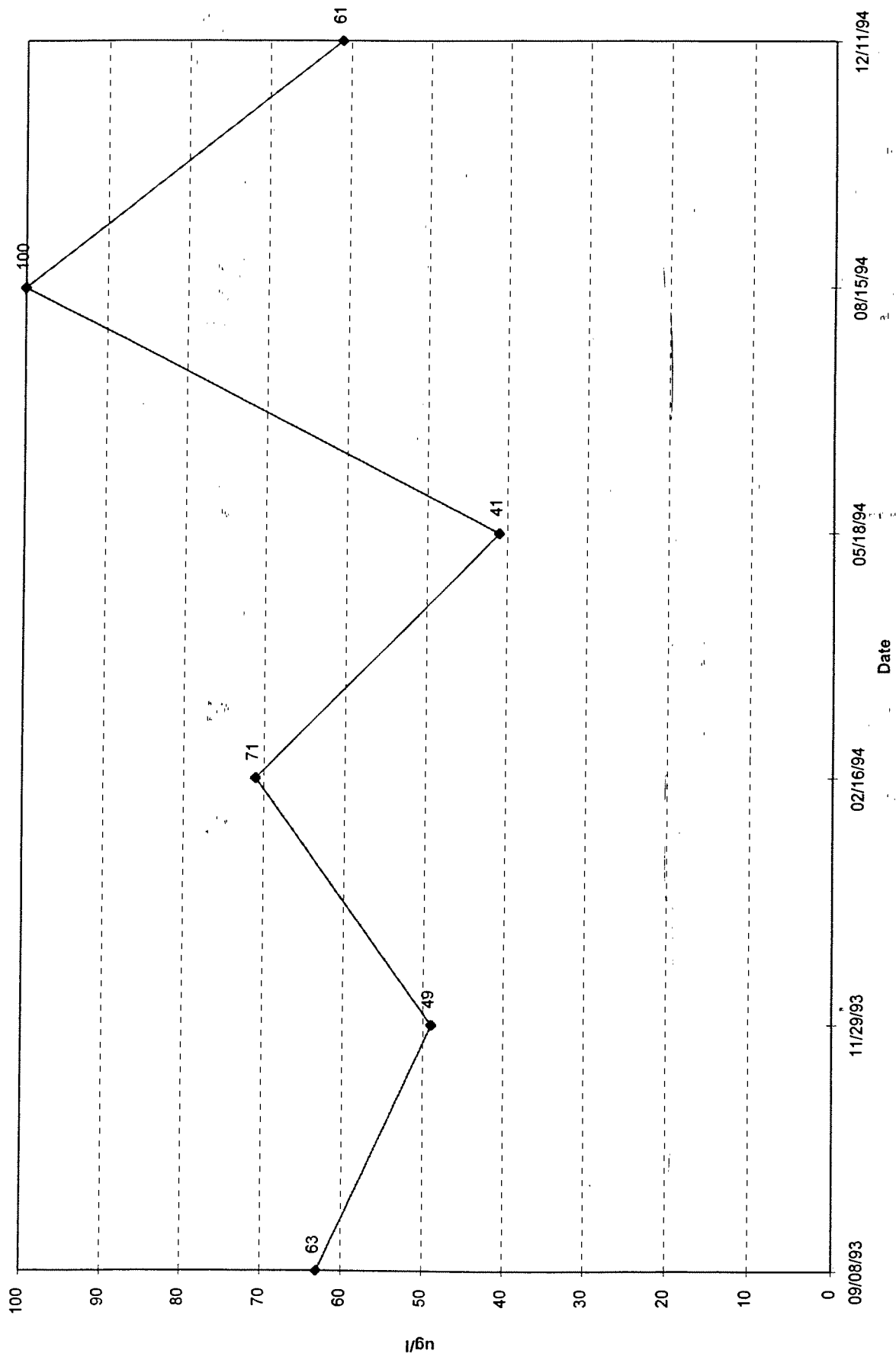


Figure 55
Historic TCE Concentrations in GW-7

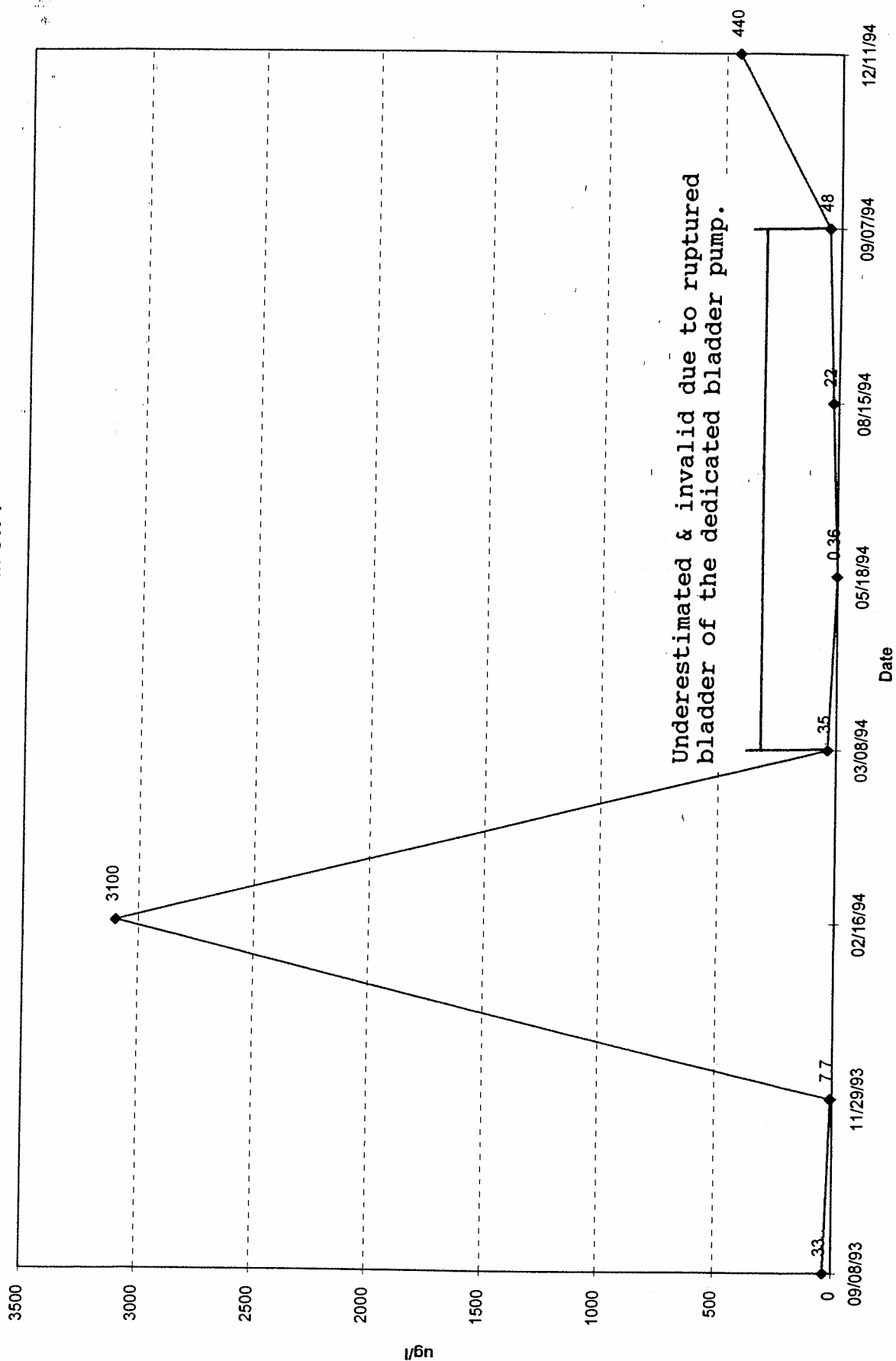


Figure 56
Historic CIS-1,2-DCE Concentrations in GW-7

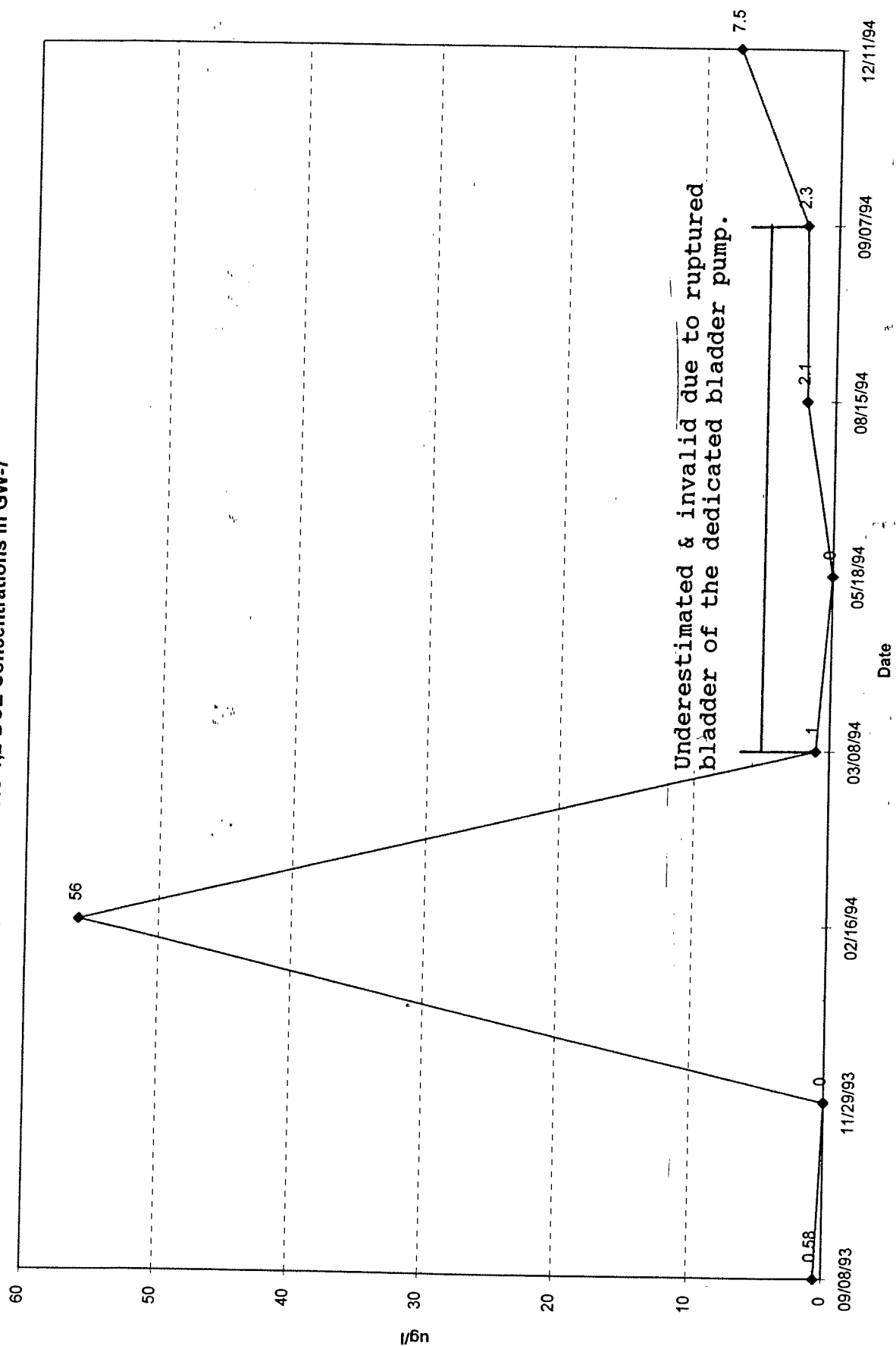


Figure 57
Historic Groundwater Elevations in GW-8

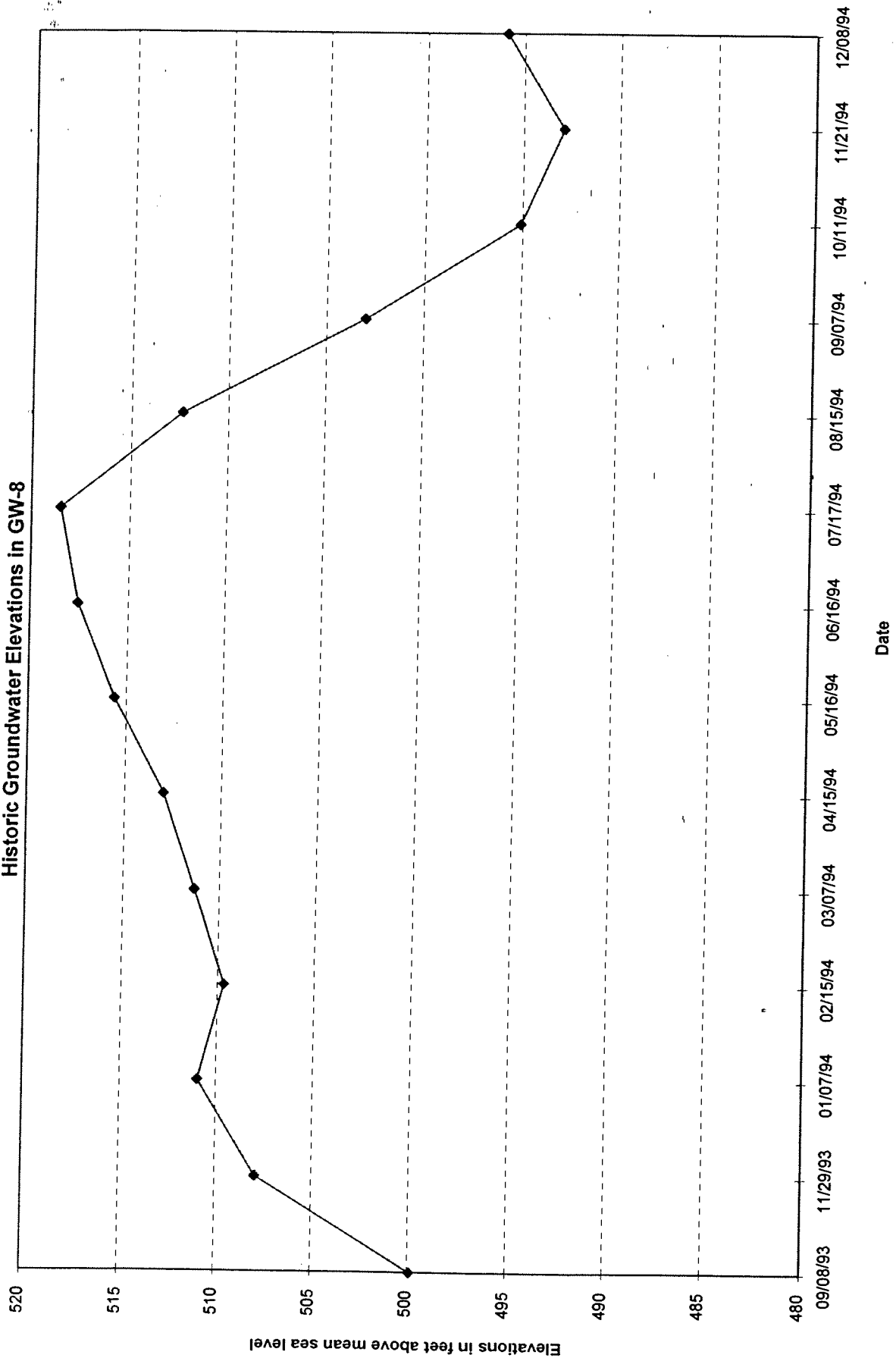


Figure 58
Historic Nitrate Concentrations in GW-8

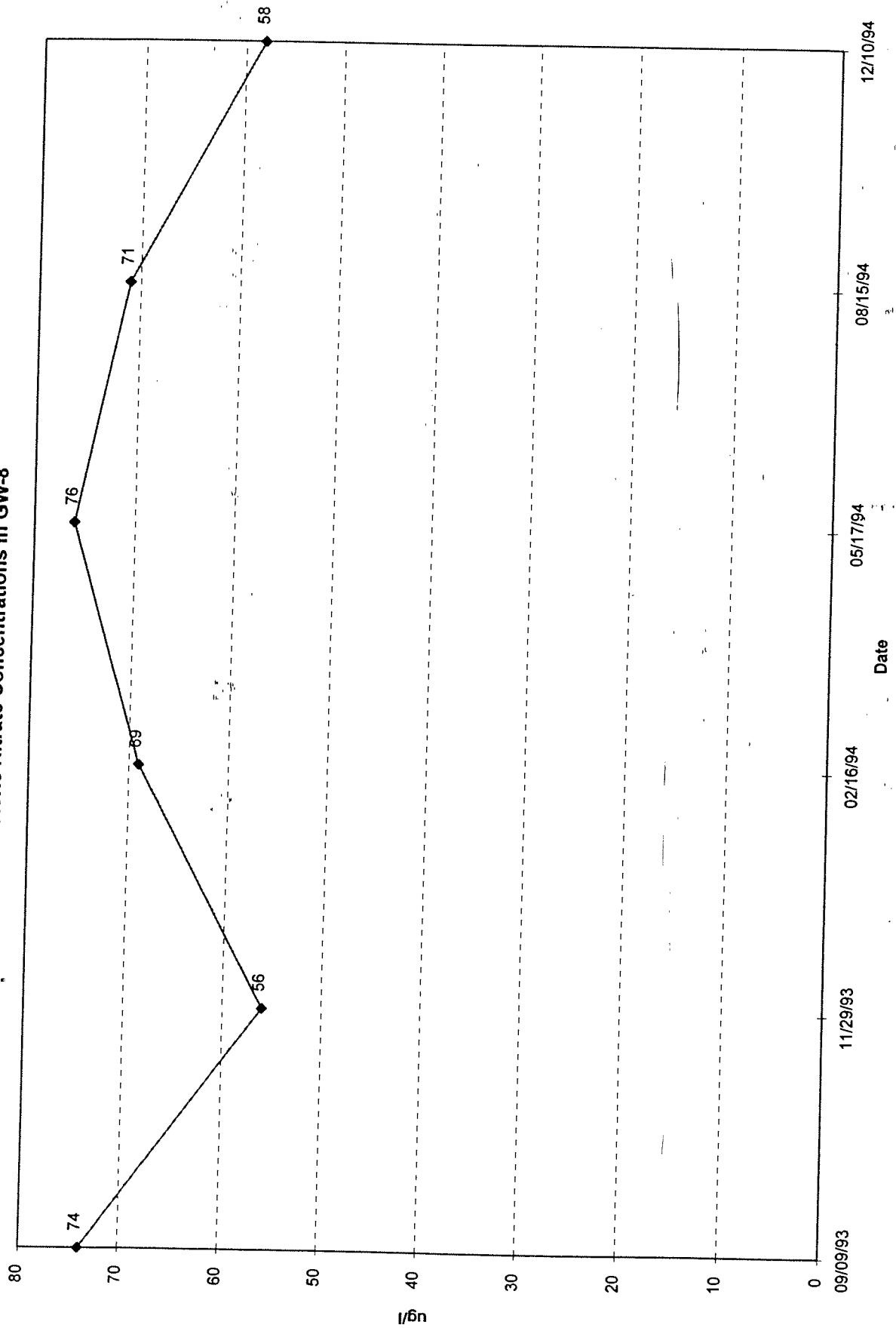


Figure 59
Historic TCE Concentrations in GW-8

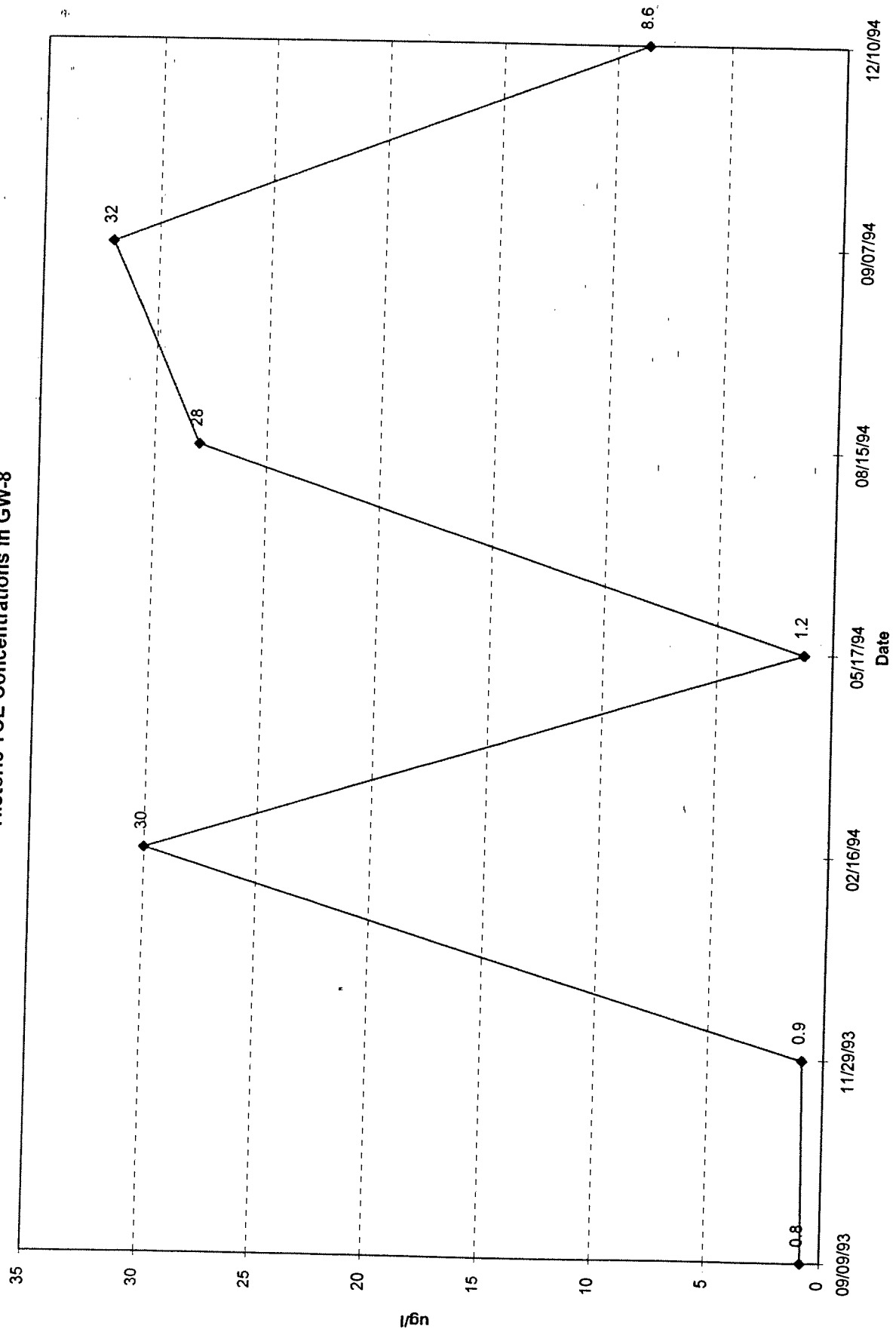


Figure 60
Historic PCE Concentrations in GW-8

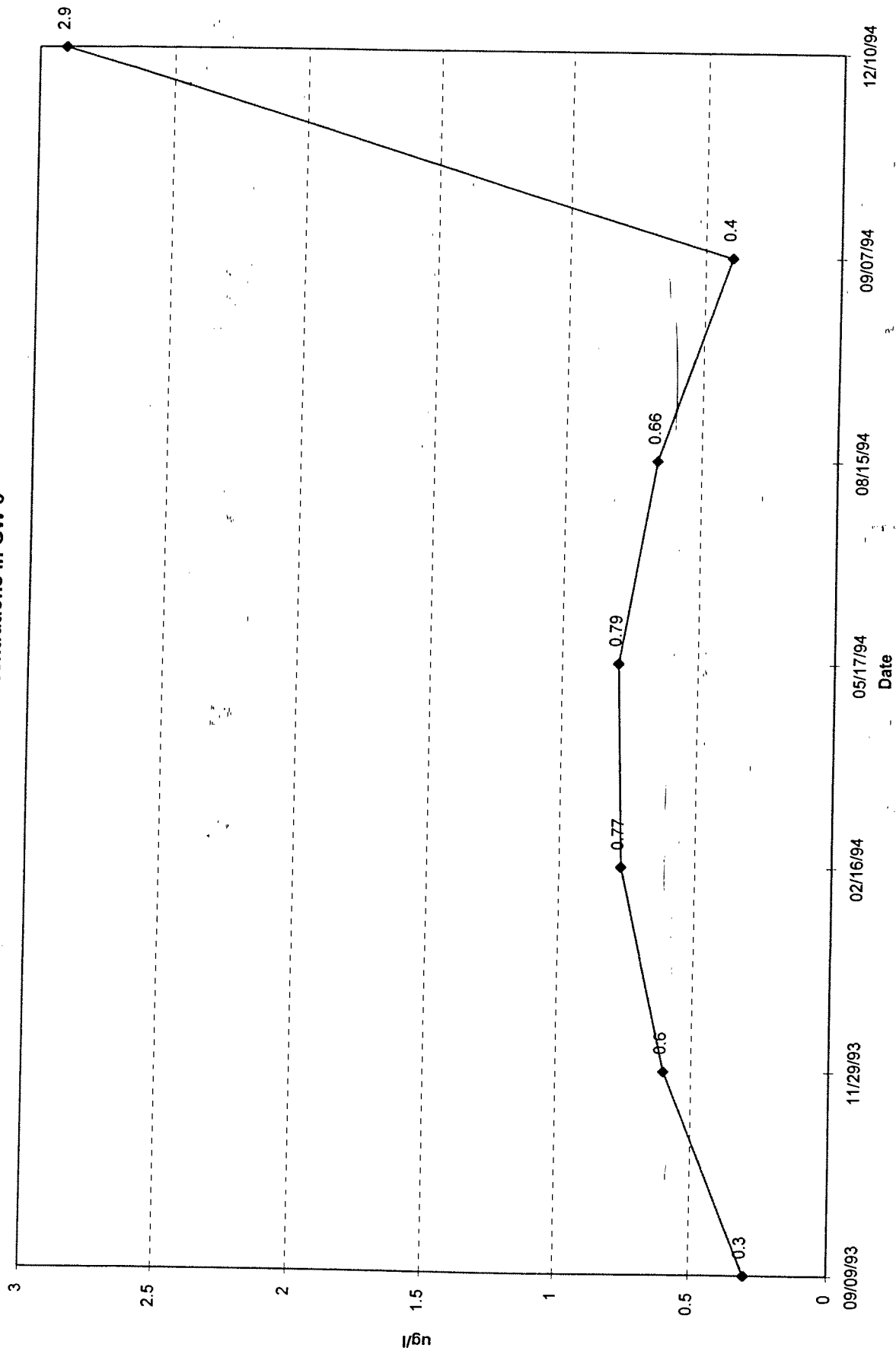


Figure 61
Historic CIS-1,2-DCE Concentrations in GW-8

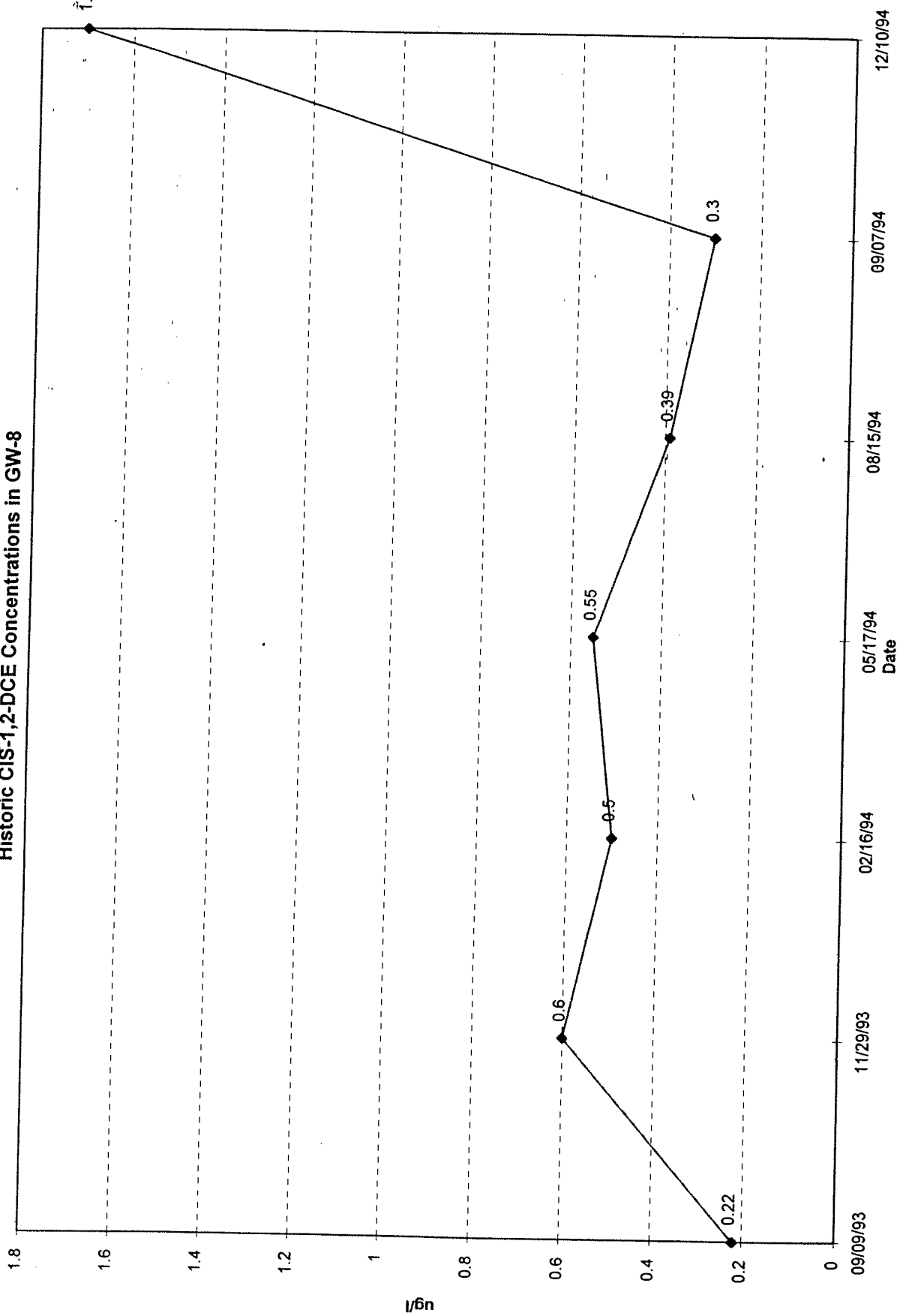


Figure 62
Historic Groundwater Elevations in GW-9

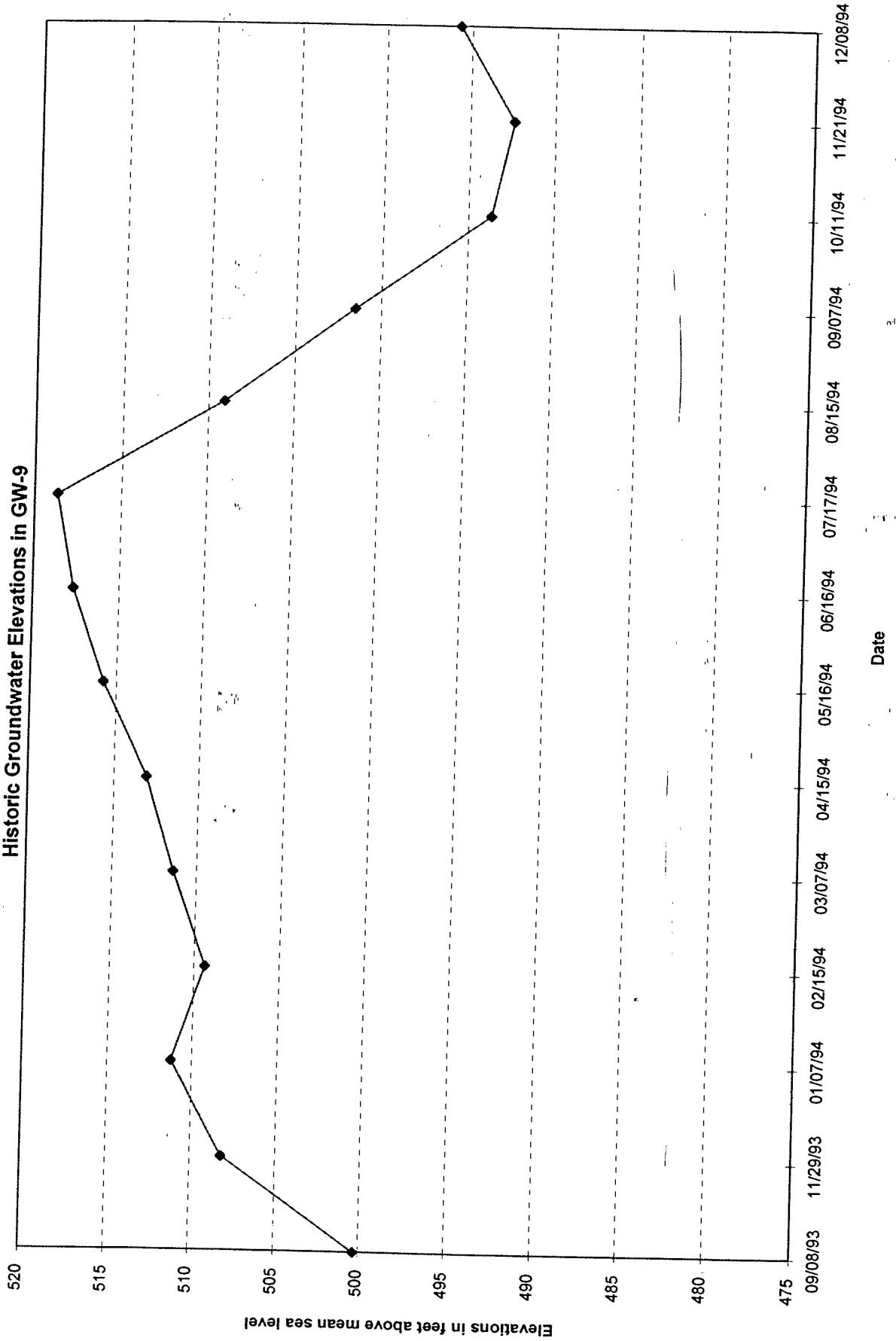


Figure 63
Historic Nitrate Concentrations in GW-9

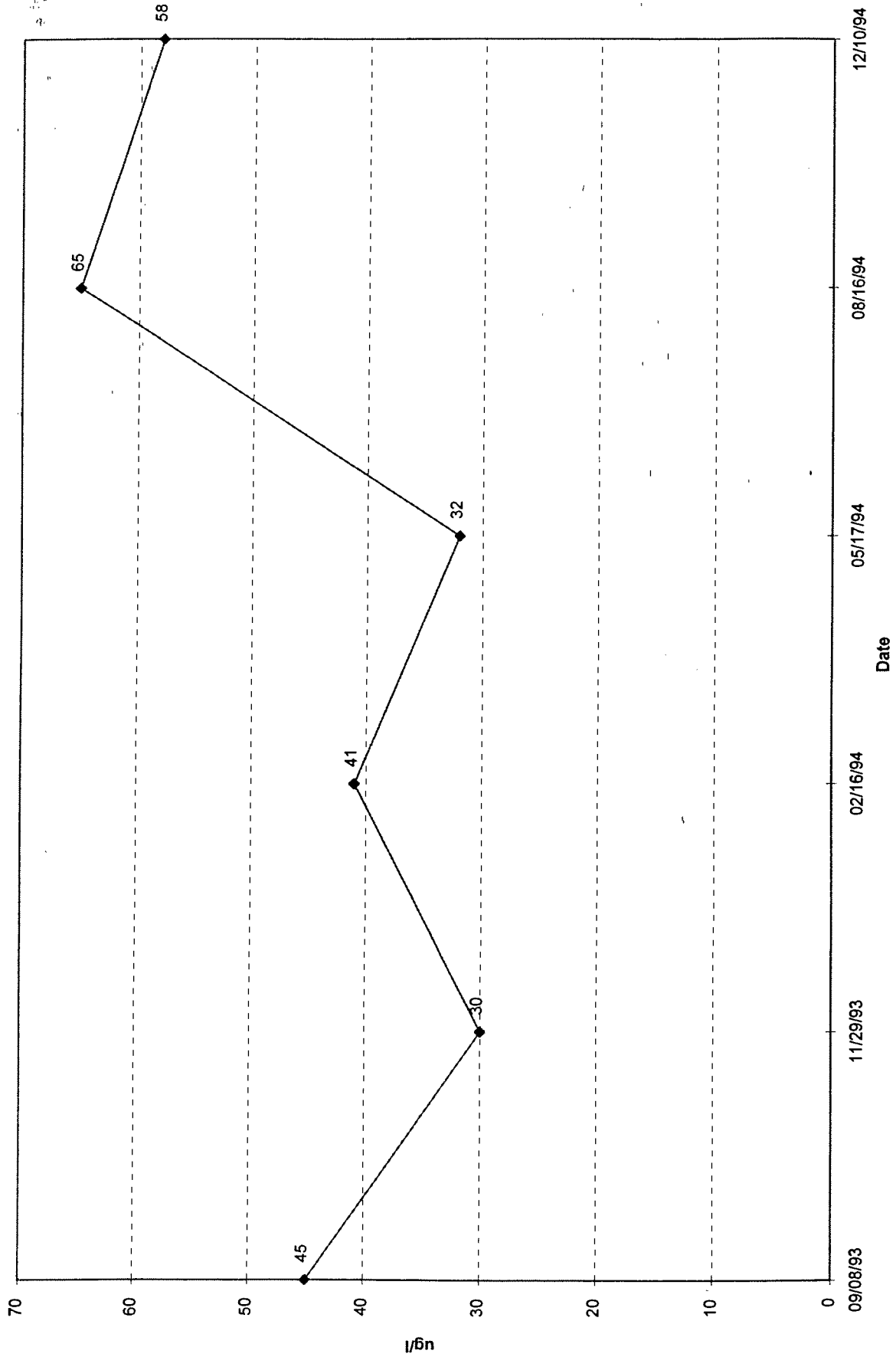


Figure 64
Historic 1,1,1-TCA Concentrations in GW-9

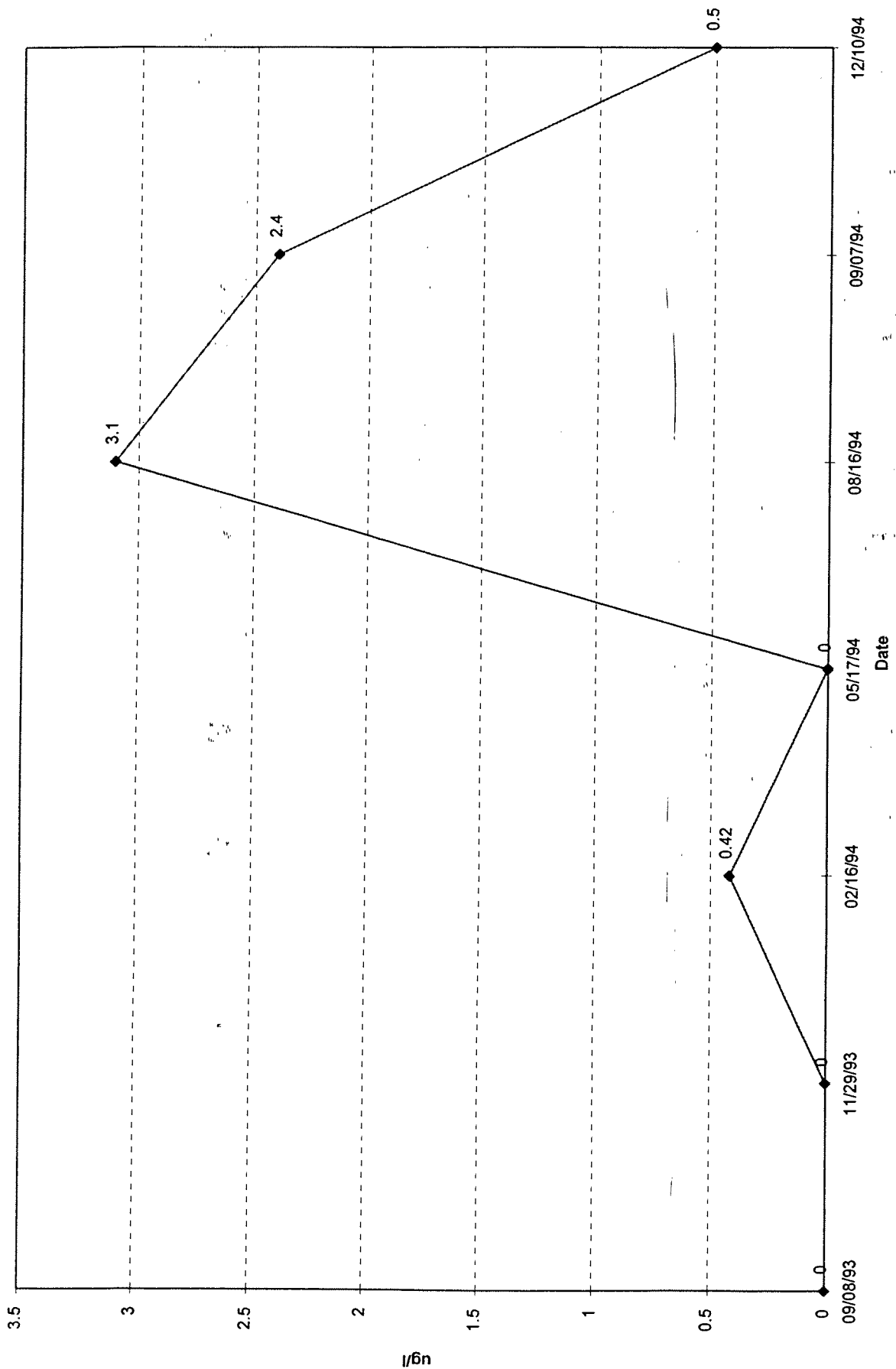


Figure 65
Historic 1,1-DCE Concentrations in GW-9

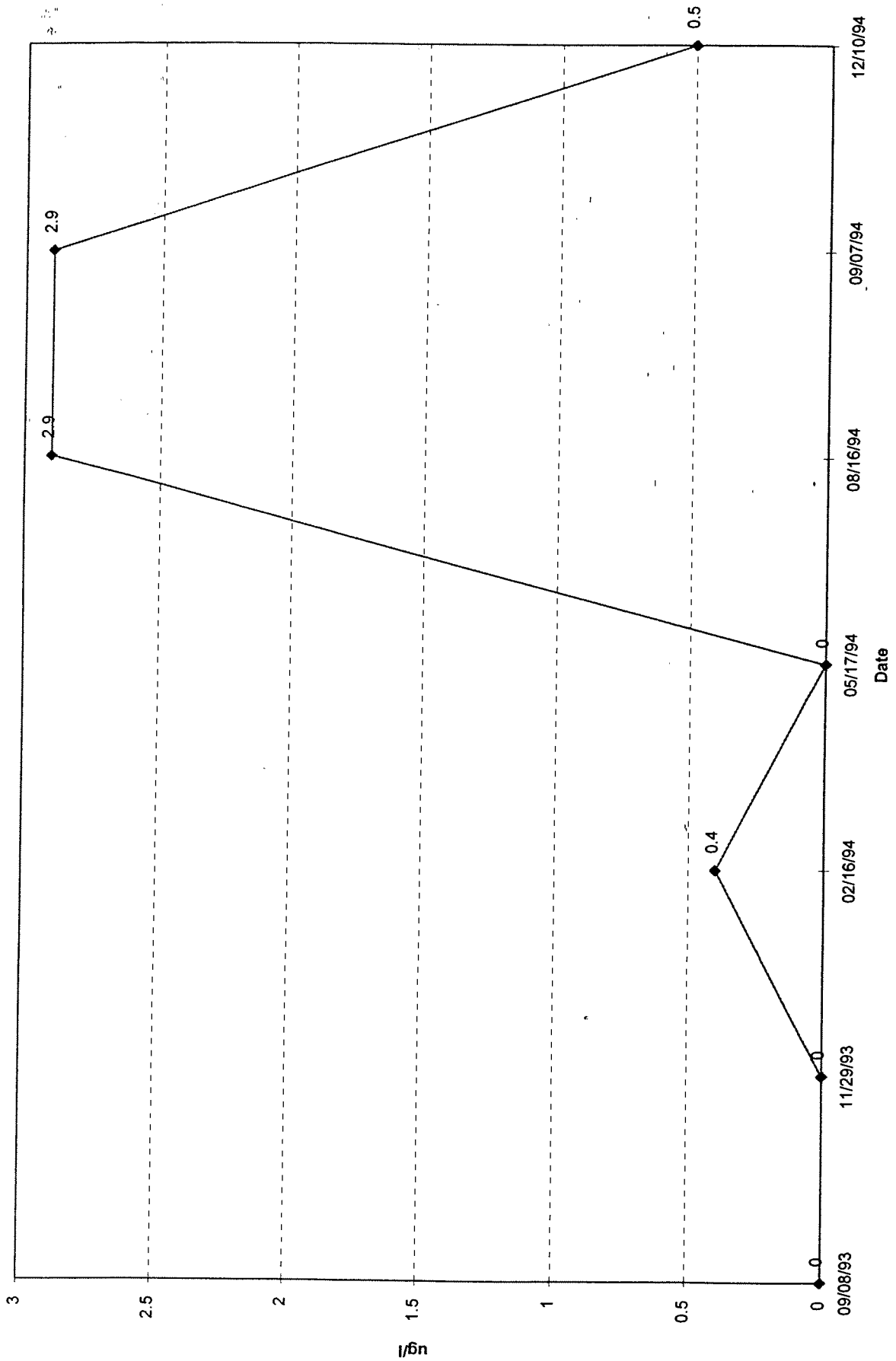


Figure 66
Historic TCE Concentrations in GW-9

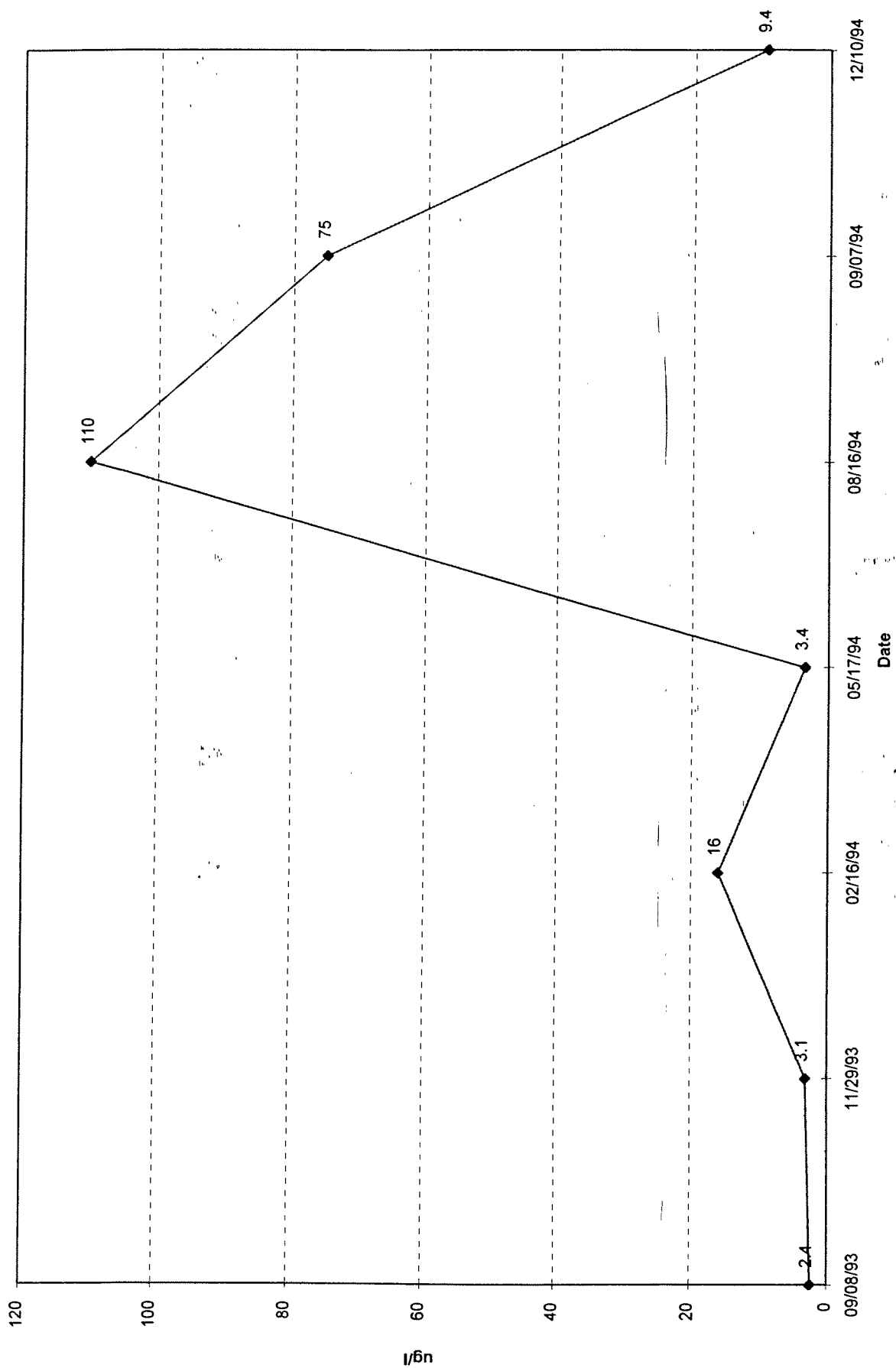


Figure 67
Historic PCE Concentrations in GW-9

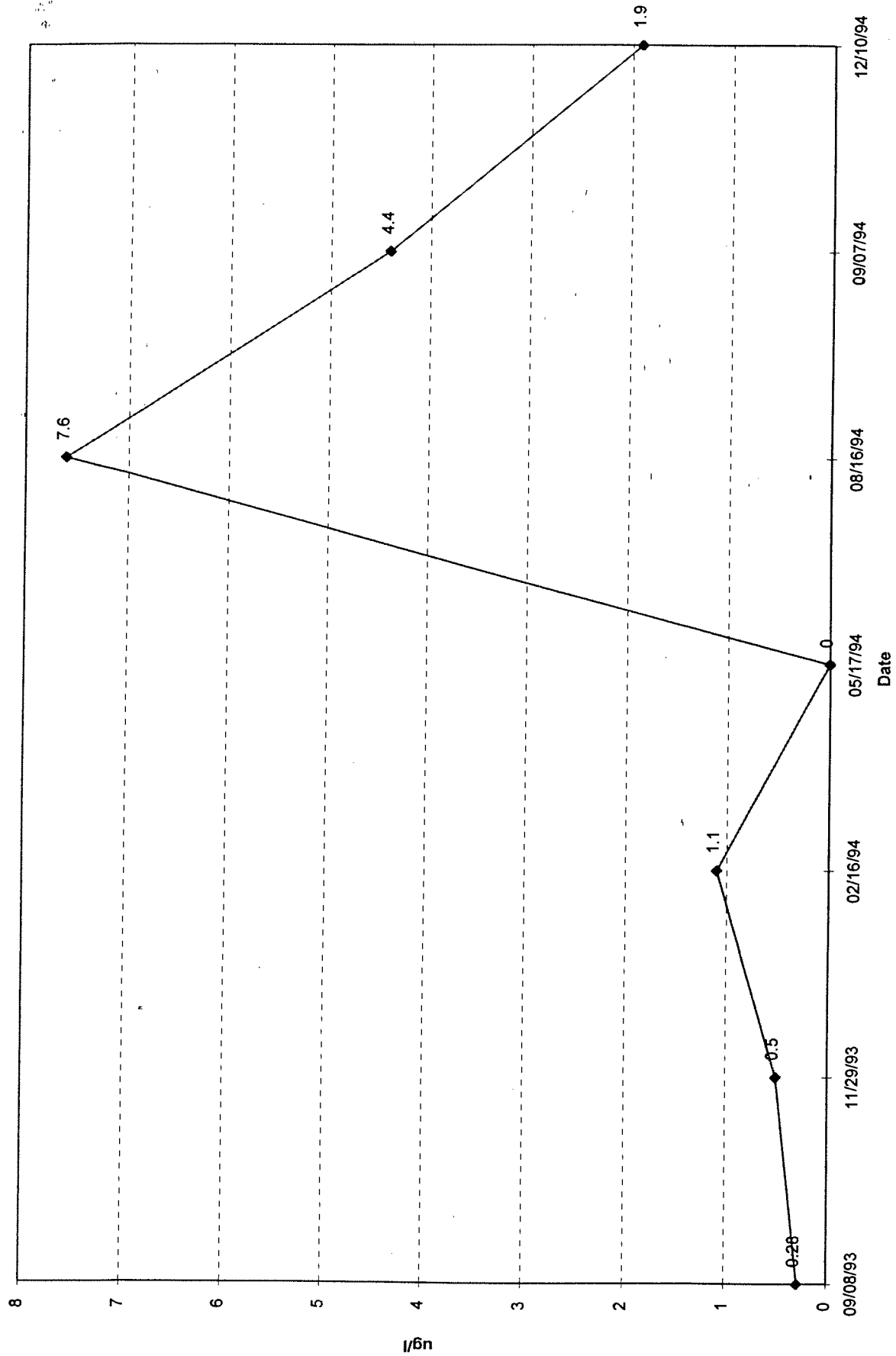


Figure 68
Historic Groundwater Elevations in GW-10

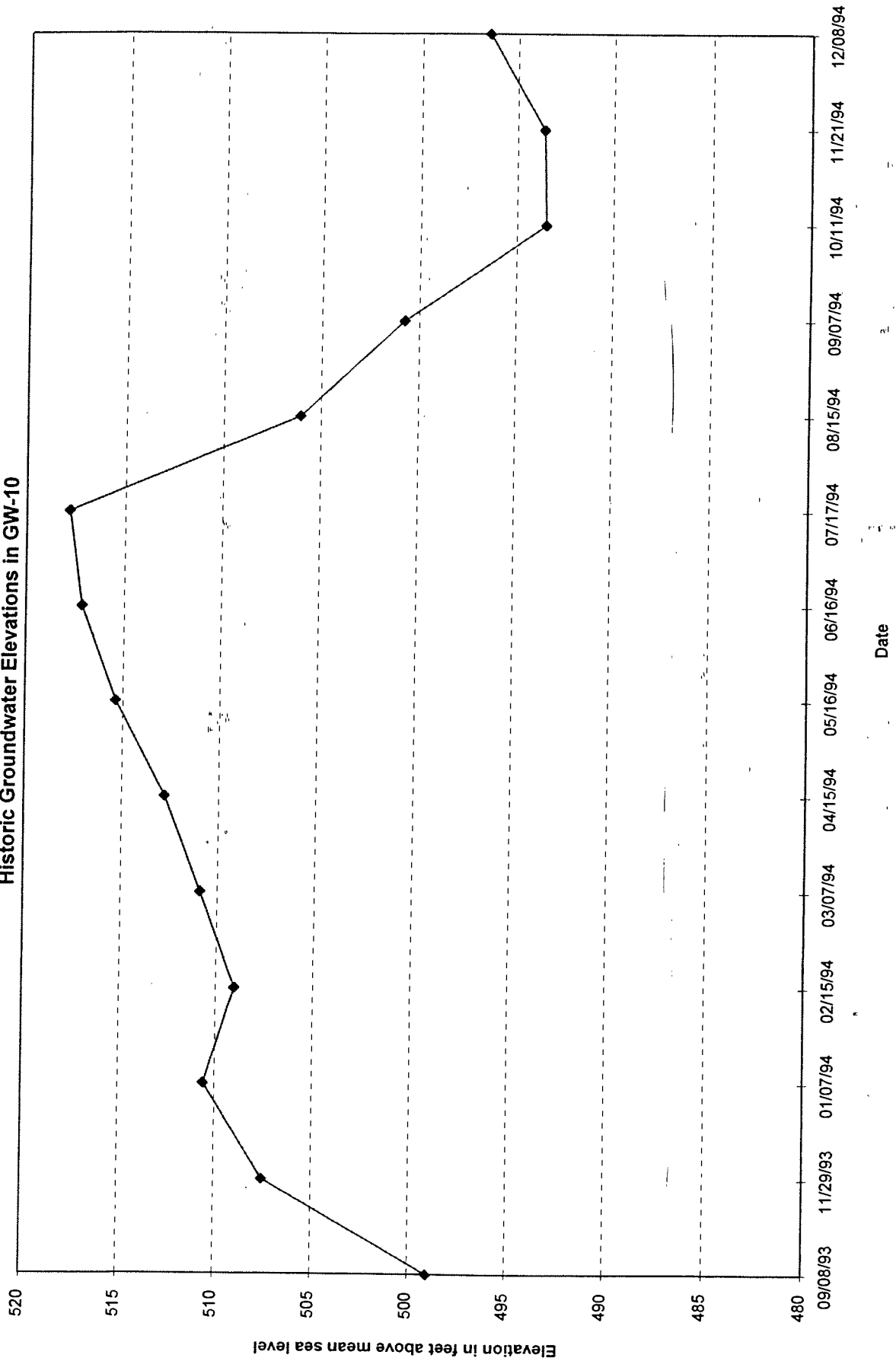


Figure 69
Historic Nitrate Concentrations in GW-10

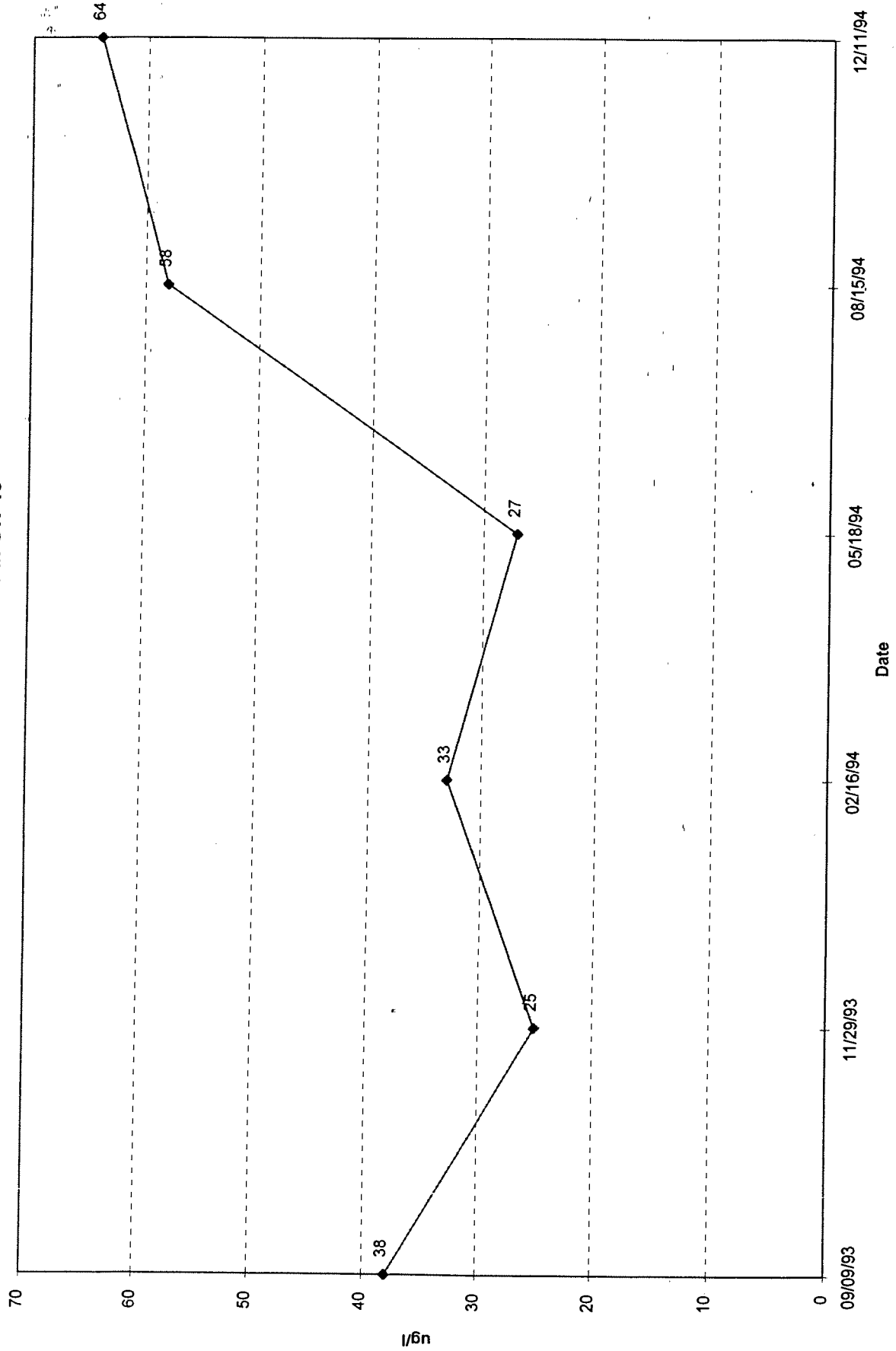


Figure 70
Historic TCE Concentrations in GW-10

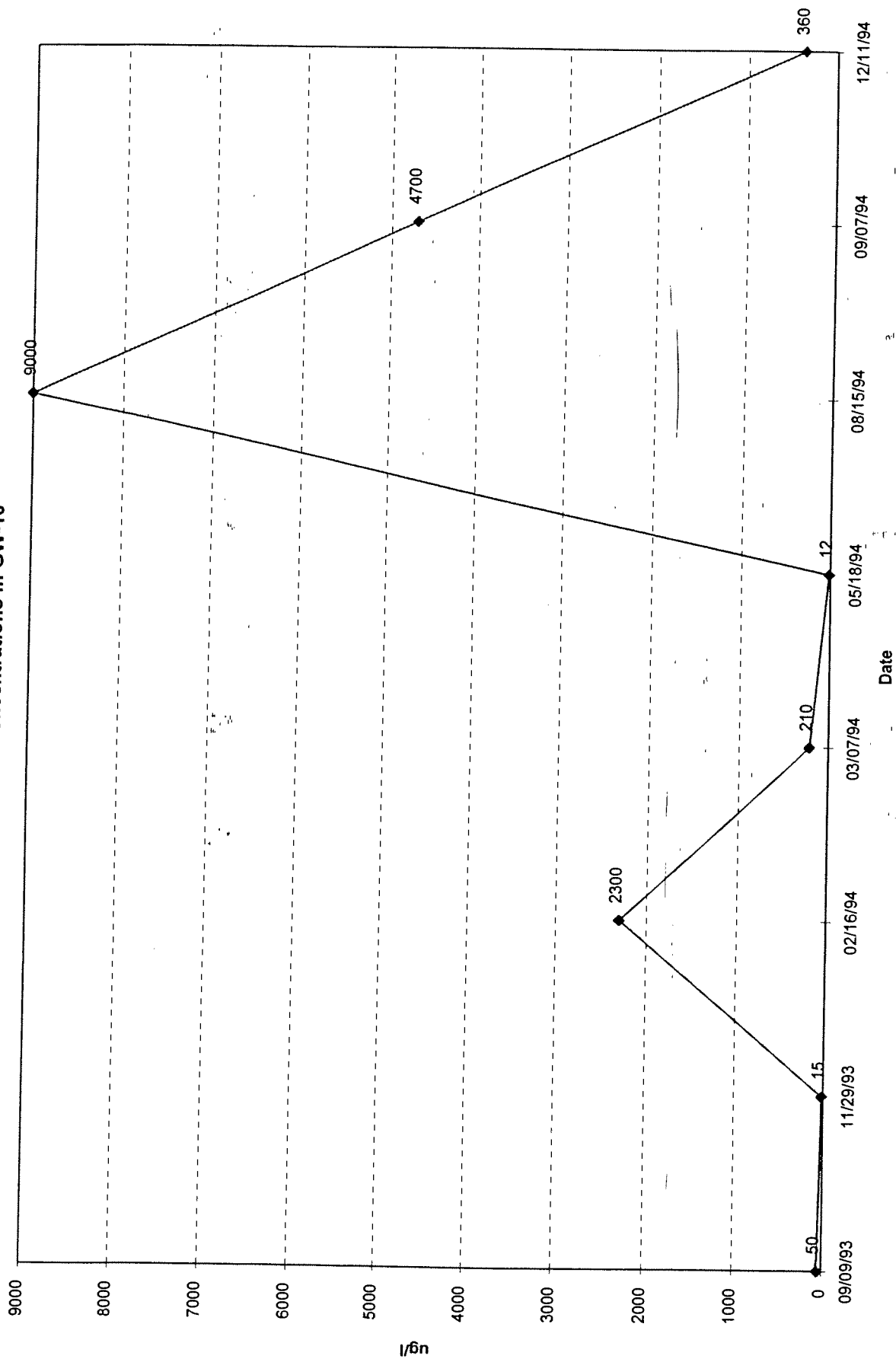
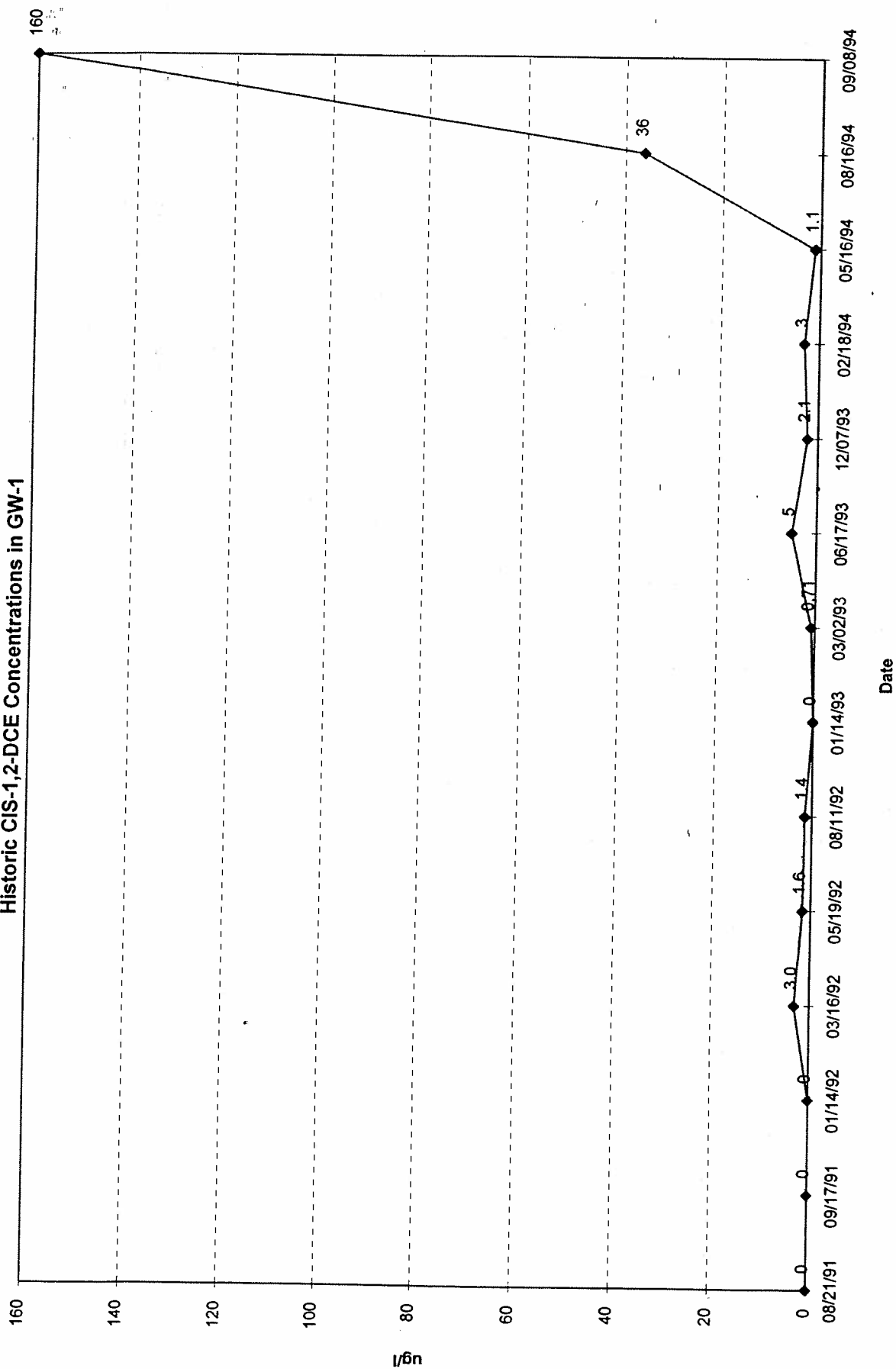
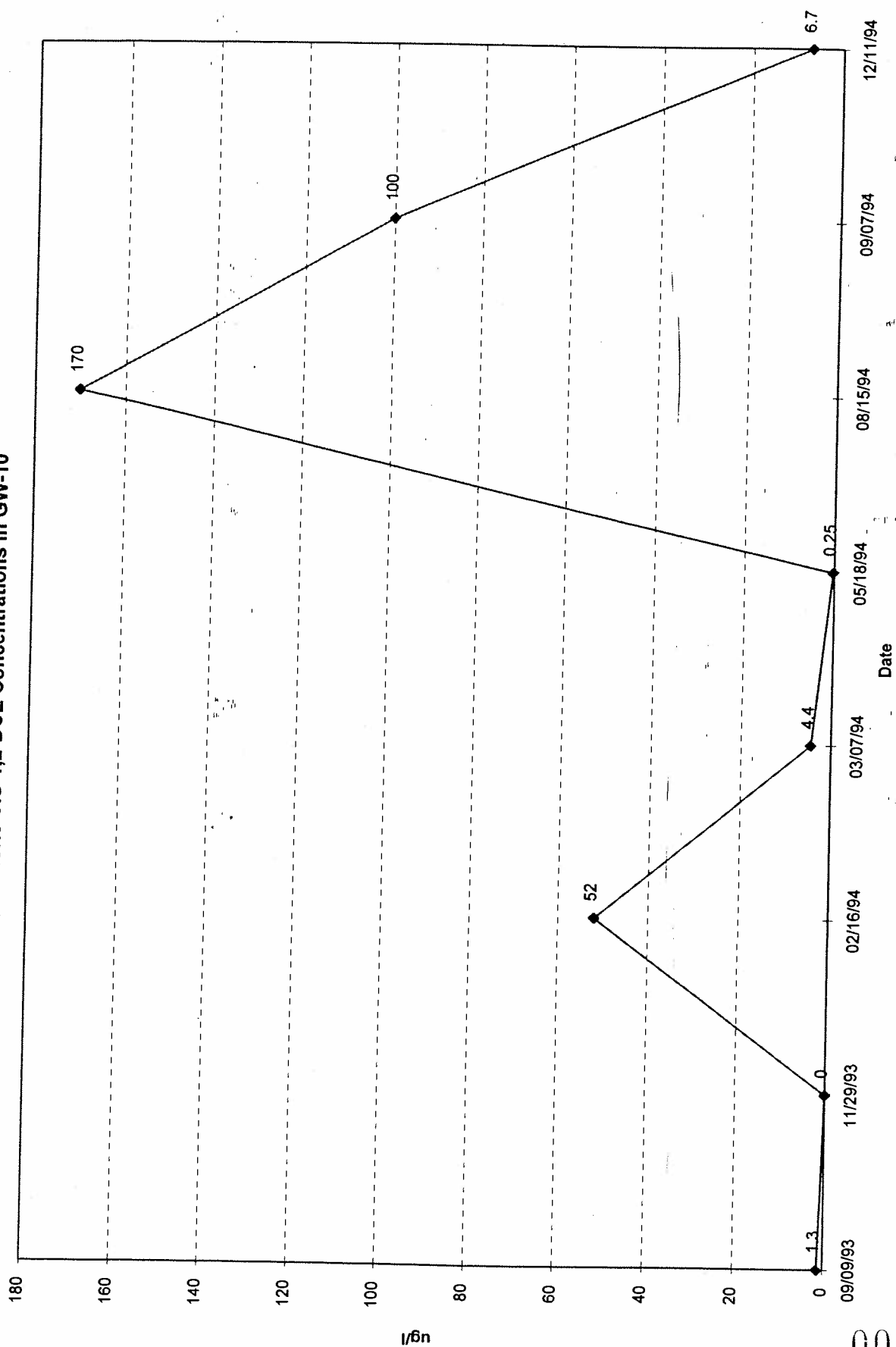


Figure 20
Historic CIS-1,2-DCE Concentrations in GW-1



003480

Figure 71
Historic CIS-1,2-DCE Concentrations in GW-10



003481

APPENDIX A

STANDARD OPERATING PROCEDURES

GROUNDWATER LEVEL MEASUREMENT PROTOCOL

Prior to purging and sampling of groundwater monitoring wells, an Environmental Instruments Company (EI) water level meter was used to measure the depth to the water surface inside each monitoring well. Water level measurements were collected from the wells in the shortest time-frame possible, in order to obtain an accurate representation of the groundwater potentiometric surface. Initially, the meter was lowered down the well until the water surface within the monitoring well was reached. The depth to the water surface was measured from a designated point on the well casing to the nearest 0.01 foot and recorded on a standard *SECOR* form. This procedure was repeated a second time to confirm the accuracy of the first measurement. The water level meter probe and associated measuring tape were washed in a solution of warm tap water and a non-phosphate detergent and rinsed with de-ionized water prior to, and between monitoring wells to reduce the possibility of cross-contamination.

GROUNDWATER PURGING AND SAMPLING PROTOCOL WITH DEDICATED PUMP AND BLADDER SYSTEM

The bladder pump intake was set at a depth of approximately 7 feet below static water level in each well. The inflatable packer, located directly beneath the pump intake, was used to isolate the upper 8 to 9 feet of water in the well during sampling. An average pumping rate of 1,800 milliliters per minute (ml/min) was used to purge approximately 3 to 5 well casing volumes of stagnant water from each well prior to sampling. Measurements of pH, temperature, and electric conductivity were taken during purging and recorded on a standard *SECOR* form. Stabilization of the physical parameters indicated that water in the monitoring well was representative of water from the formation, and a groundwater sample was collected. During sample collection, the pumping rate was lowered to approximately 100 ml/min.

GROUNDWATER PURGING AND SAMPLING PROTOCOL WITH SUBMERSIBLE ELECTRIC PUMP AND BAILER

Groundwater monitoring wells were sampled in order from least contaminated to most contaminated across the subject site. A minimum of 3 to 5 well casing volumes of water was purged prior to sampling. Measurements of pH, temperature, and electric conductivity were taken during purging and recorded on a standard *SECOR* form. Stabilization of the physical parameters indicated that water in the monitoring well was representative of water from the formation, and a groundwater sample was collected. All groundwater samples were collected using a 2-inch diameter Teflon™ bailer. Sample bottles provided by BCA were filled and placed on ice for transport to the laboratory.

All purging and sampling equipment was decontaminated prior to and between monitoring wells to reduce the possibility of cross-contamination. The Grundfos™ pumping system was decontaminated by placing the pump in a 35-gallon drum containing purified bottled water followed by a 35-gallon drum containing a solution of warm bottled water and a non-phosphate cleanser. Once the submersible pump had displaced the water from the drums, the pump was rinsed with de-ionized water. This procedure was performed to ensure the interior of PVC tubing attached to the pump was properly decontaminated. The exterior of the PVC tubing and the reel were also washed with a pressure washer, followed by a rinse with de-ionized water between monitoring wells. As a final precautionary measure, the bottom of the submersible pump was opened and the water within the pump was replaced with de-ionized water.

APPENDIX B

LABORATORY RESULTS

11 Western Avenue
Emeryville, CA 94601
818/247-5737
Fax: 818/247-9797

LOG NO: G94-08-172

Received: 16 AUG 94

Mailed: SEP 1 1994

Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Purchase Order: MSA92266

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
08-172-1	GW-7	15 AUG 94			
08-172-2	GW-8	15 AUG 94			
08-172-3	GW-9	16 AUG 94			
08-172-4	GW-10	15 AUG 94			
PARAMETER	08-172-1	08-172-2	08-172-3	08-172-4	
Ammonia (350.1), mg/L	0.28	<0.1	<0.1	0.18	
Chloride (300.0/9056), mg/L	49	40	30	32	
Nitrate (300.0/9056), mg/L	100	71	65	58	
Nitrite (300.0/9056), mg/L	<0.2	<0.2	<0.2	<0.2	
Sulfate (300.0/9056), mg/L	130	69	69	72	
Turbidity (180.1), NTU	0.30	0.18	0.15	0.41	
Dissolved Solids (160.1), mg/L	750	450	410	640	
Alkalinity (310.1)					
Carbonate Alk (as CaCO3), mg/L	<1	<1	<1	<1	
Bicarbonate Alk (as CaCO3), mg/L	330	220	220	420	
Hydroxide Alk (as CaCO3), mg/L	<1	<1	<1	<1	
Total Alkalinity (as CaCO3), mg/L	330	220	220	420	
Calcium (6010/200.7), mg/L	180	90	87	140	
Magnesium (6010/200.7), mg/L	39	19	19	30	
Potassium (6010/200.7), mg/L	5.7	4.1	4.3	5.1	
Sodium (6010/200.7), mg/L	35	25	28	30	
Digestion (3010), Date	08/17/94	08/17/94	08/17/94	08/17/94	

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Western Avenue
ndale, CA 91201
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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES				DATE SAMPLED
08-172-1	GW-7				15 AUG 94
08-172-2	GW-8				15 AUG 94
08-172-3	GW-9				16 AUG 94
08-172-4	GW-10				15 AUG 94
PARAMETER	08-172-1	08-172-2	08-172-3	08-172-4	
PH (8015M)					
Date Analyzed	08/22/94	08/22/94	08/22/94	08/22/94	
Date Extracted	08/17/94	08/17/94	08/17/94	08/17/94	
Dilution Factor, Times	1	1	1	1	
TPH (total), mg/L	<1	<1	<1	<1	
Other TPH (8015M)	---	---	---	---	

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Sunnyvale, CA 91201
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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
08-172-1	GW-7	15 AUG 94			
08-172-2	GW-8	15 AUG 94			
08-172-3	GW-9	16 AUG 94			
08-172-4	GW-10	15 AUG 94			
PARAMETER	08-172-1	08-172-2	08-172-3	08-172-4	
524.2/VOC					
Date Analyzed	08/28/94	08/23/94	08/28/94	08/28/94	
Date Extracted	08/28/94	---	08/28/94	08/28/94	
Dilution Factor, Times	5	1	5	500	
1,1,1,2-Tetrachloroethane, ug/L	<1	<0.2	<1	<100	
1,1,1-Trichloroethane, ug/L	<1	<0.2	3.1	<100	
1,1,2,2-Tetrachloroethane, ug/L	<1	<0.2	<1	<100	
1,1,2-Trichloroethane, ug/L	<1	<0.2	<1	<100	
1,1-Dichloroethane, ug/L	<1	<0.2	<1	<100	
1,1-Dichloroethene, ug/L	<1	<0.2	2.9	<100	
1,1-Dichloropropene, ug/L	<1	<0.2	<1	<100	
1,2,3-Trichlorobenzene, ug/L	<1	<0.2	<1	<100	
1,2,3-Trichloropropane, ug/L	<3	<0.5	<3	<300	
1,2,4-Trichlorobenzene, ug/L	<1	<0.2	<1	<100	
1,2,4-Trimethylbenzene, ug/L	<1	<0.2	<1	<100	
1,2-Dibromo-3-chloropropane, ug/L	<3	<0.5	<3	<300	
1,2-Dibromoethane, ug/L	<1	<0.2	<1	<100	
1,2-Dichloroethane, ug/L	<1	<0.2	<1	<100	
1,2-Dichlorobenzene, ug/L	<1	<0.2	<1	<100	
1,2-Dichloropropane, ug/L	<1	<0.2	<1	<100	
1,3,5-Trimethylbenzene, ug/L	<1	<0.2	<1	<100	
1,3-Dichlorobenzene, ug/L	<1	<0.2	<1	<100	
1,3-Dichloropropane, ug/L	<1	<0.2	<1	<100	
1,4-Dichlorobenzene, ug/L	<1	<0.2	<1	<100	

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818/247-5737
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LOG NO: G94-08-172

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
08-172-1	GW-7	15 AUG 94			
08-172-2	GW-8	15 AUG 94			
08-172-3	GW-9	16 AUG 94			
08-172-4	GW-10	15 AUG 94			
PARAMETER	08-172-1	08-172-2	08-172-3	08-172-4	
2,2-Dichloropropane, ug/L	<1	<0.2	<1	<100	
2-Chlorotoluene, ug/L	<1	<0.2	<1	<100	
4-Chlorotoluene, ug/L	<1	<0.2	<1	<100	
Bromobenzene, ug/L	<1	<0.2	<1	<100	
Bromochloromethane, ug/L	<1	<0.2	<1	<100	
Bromodichloromethane, ug/L	<1	<0.2	<1	<100	
Bromomethane, ug/L	<3	<0.5	<3	<300	
Benzene, ug/L	<1	<0.2	<1	<100	
Bromoform, ug/L	<3	<0.5	<3	<300	
Chlorobenzene, ug/L	<1	<0.2	<1	<100	
Carbon Tetrachloride, ug/L	<1	0.58	<1	<100	
Chloroethane, ug/L	<1	<0.2	<1	<100	
Chloroform, ug/L	3.1	0.51	1.4	100	
Chloromethane, ug/L	<3	<0.5	<3	<300	
Dibromochloromethane, ug/L	<1	<0.2	<1	<100	
Dibromomethane, ug/L	<1	<0.2	<1	<100	
Dichlorodifluoromethane, ug/L	<3	<0.5	<3	<300	
Ethylbenzene, ug/L	<1	<0.2	<1	<100	
Freon 113, ug/L	<1	<0.2	<1	<100	
Hexachlorobutadiene, ug/L	<1	<0.2	<1	<100	
Isopropylbenzene, ug/L	<1	<0.2	<1	<100	
Methylene chloride, ug/L	<1	<0.2	<1	<100	
N-Butylbenzene, ug/L	<1	<0.2	<1	<100	
N-Propylbenzene, ug/L	<1	<0.2	<1	<100	

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REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES				DATE SAMPLED
08-172-1	GW-7				15 AUG 94
08-172-2	GW-8				15 AUG 94
08-172-3	GW-9				16 AUG 94
08-172-4	GW-10				15 AUG 94
PARAMETER	08-172-1	08-172-2	08-172-3	08-172-4	
Naphthalene, ug/L	<5	<1	<5	<500	
Styrene, ug/L	<1	<0.2	<1	<100	
Trichloroethene, ug/L	22	28	110	9000	
Trichlorofluoromethane, ug/L	<1	<0.2	<1	<100	
Toluene, ug/L	<1	<0.2	<1	<100	
Tetrachloroethene, ug/L	<1	0.66	7.6	<100	
Vinyl chloride, ug/L	<1	<0.2	<1	<100	
cis-1,2-Dichloroethene, ug/L	2.1	0.39	<1	170	
cis-1,3-Dichloropropene, ug/L	<1	<0.2	<1	<100	
m- and p-Xylene Isomers, ug/L	<1	<0.2	<1	<100	
o-Xylene, ug/L	<1	<0.2	<1	<100	
p-Isopropyl toluene, ug/L	<1	<0.2	<1	<100	
sec-Butylbenzene, ug/L	<1	<0.2	<1	<100	
trans-1,2-Dichloroethene, ug/L	<1	<0.2	<1	<100	
trans-1,3-Dichloropropene, ug/L	<1	<0.2	<1	<100	
tert-Butylbenzene, ug/L	<1	<0.2	<1	<100	

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REPORT OF ANALYTICAL RESULTS

Page 6

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
08-172-5	Equipment Blank	16 AUG 94
PARAMETER	08-172-5	
Ammonia (350.1), mg/L	0.12	
Chloride (300.0/9056), mg/L	<0.05	
Nitrate (300.0/9056), mg/L	<0.1	
Nitrite (300.0/9056), mg/L	<0.2	
Sulfate (300.0/9056), mg/L	<0.1	
Turbidity (180.1), NTU	<0.1	
Dissolved Solids (160.1), mg/L	5	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	<10	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	<10	
Calcium (6010/200.7), mg/L	<0.5	
Magnesium (6010/200.7), mg/L	<0.1	
Potassium (6010/200.7), mg/L	<0.5	
Sodium (6010/200.7), mg/L	1.3	
Digestion (3010), Date	08/17/94	
TPH (8015M)		
Date Analyzed	08/22/94	
Date Extracted	08/17/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

B C Analytical

1 Western Avenue
ndale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-08-172

Received: 16 AUG 94

Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Purchase Order: MSA92266

REPORT OF ANALYTICAL RESULTS

Page 7

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
08-172-5	Equipment Blank	16 AUG 94
PARAMETER	08-172-5	
E524.2/VOC		
Date Analyzed	08/28/94	
Date Extracted	08/28/94	
Dilution Factor, Times	5	
1,1,1,2-Tetrachloroethane, ug/L	<1	
1,1,1-Trichloroethane, ug/L	<1	
1,1,2,2-Tetrachloroethane, ug/L	1.2	
1,1,2-Trichloroethane, ug/L	1.4	
1,1-Dichloroethane, ug/L	<1	
1,1-Dichloroethene, ug/L	<1	
1,1-Dichloropropene, ug/L	<1	
1,2,3-Trichlorobenzene, ug/L	<1	
1,2,3-Trichloropropane, ug/L	<3	
1,2,4-Trichlorobenzene, ug/L	<1	
1,2,4-Trimethylbenzene, ug/L	<1	
1,2-Dibromo-3-chloropropane, ug/L	<3	
1,2-Dibromoethane, ug/L	<1	
1,2-Dichloroethane, ug/L	<1	
1,2-Dichlorobenzene, ug/L	<1	
1,2-Dichloropropane, ug/L	<1	
1,3,5-Trimethylbenzene, ug/L	<1	
1,3-Dichlorobenzene, ug/L	<1	
1,3-Dichloropropane, ug/L	<1	
1,4-Dichlorobenzene, ug/L	<1	
2,2-Dichloropropane, ug/L	<1	
2-Chlorotoluene, ug/L	<1	
4-Chlorotoluene, ug/L	<1	

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LOG NO: G94-08-172

Received: 16 AUG 94

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Purchase Order: MSA92266

REPORT OF ANALYTICAL RESULTS

Page 8

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
08-172-5	Equipment Blank	16 AUG 94
PARAMETER	08-172-5	
Bromobenzene, ug/L	<1	
Bromochloromethane, ug/L	<1	
Bromodichloromethane, ug/L	<1	
Bromomethane, ug/L	<3	
Benzene, ug/L	<1	
Bromoform, ug/L	<3	
Chlorobenzene, ug/L	<1	
Carbon Tetrachloride, ug/L	<1	
Chloroethane, ug/L	<1	
Chloroform, ug/L	1.5	
Chloromethane, ug/L	<3	
Dibromochloromethane, ug/L	<1	
Dibromomethane, ug/L	<1	
Dichlorodifluoromethane, ug/L	<3	
Ethylbenzene, ug/L	<1	
Freon 113, ug/L	<1	
Hexachlorobutadiene, ug/L	<1	
Isopropylbenzene, ug/L	<1	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<1	
N-Propylbenzene, ug/L	<1	
Naphthalene, ug/L	1.3	
Styrene, ug/L	<1	
Trichloroethene, ug/L	9.2	
Trichlorofluoromethane, ug/L	<1	
Toluene, ug/L	<1	
Tetrachloroethene, ug/L	<1	

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201 Western Avenue
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LOG NO: G94-08-172

Received: 16 AUG 94

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Purchase Order: MSA92266

REPORT OF ANALYTICAL RESULTS

Page 9

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
08-172-5	Equipment Blank	16 AUG 94
PARAMETER	08-172-5	
Vinyl chloride, ug/L	<1	
cis-1,2-Dichloroethene, ug/L	<1	
cis-1,3-Dichloropropene, ug/L	<1	
m- and p-Xylene Isomers, ug/L	<1	
o-Xylene, ug/L	<1	
p-Isopropyl toluene, ug/L	<1	
sec-Butylbenzene, ug/L	<1	
trans-1,2-Dichloroethene, ug/L	<1	
trans-1,3-Dichloropropene, ug/L	<1	
tert-Butylbenzene, ug/L	<1	



003494

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601 Western Avenue
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REPORT OF ANALYTICAL RESULTS

Page 10

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
08-172-6	Trip Blank	16 AUG 94
PARAMETER	08-172-6	
E524.2/VOC		
Date Analyzed	08/23/94	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobbenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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Purchase Order: MSA92266

REPORT OF ANALYTICAL RESULTS

Page 11

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
08-172-6	Trip Blank	16 AUG 94
PARAMETER	08-172-6	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	<0.2	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	0.58	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	<0.2	
Vinyl chloride, ug/L	<0.2	

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LOG NO: G94-08-172

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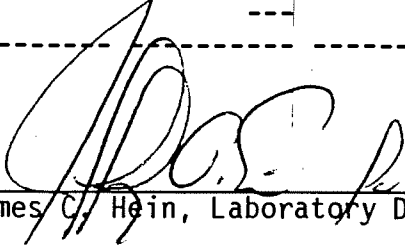
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REPORT OF ANALYTICAL RESULTS

Page 12

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
08-172-6	Trip Blank	16 AUG 94
PARAMETER	08-172-6	
cis-1,2-Dichloroethene, ug/L	<0.2	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	


James C. Hein, Laboratory Director

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LOG NO: G94-08-190

Received: 17 AUG 94

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES				DATE SAMPLED
08-190-1	GW-1				16 AUG 94
08-190-2	GW-2				16 AUG 94
08-190-3	GW-3				16 AUG 94
08-190-4	GW-4				16 AUG 94
08-190-5	GW-5				16 AUG 94
PARAMETER	08-190-1	08-190-2	08-190-3	08-190-4	08-190-5
Ammonia (350.1), mg/L	0.36	0.63	0.61	0.60	0.22
Chloride (300.0/9056), mg/L	40	36	38	40	40
Nitrate (300.0/9056), mg/L	75	55	74	75	77
Nitrite (300.0/9056), mg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Sulfate (300.0/9056), mg/L	72	64	67	86	70
Turbidity (180.1), NTU	<0.1	4.5	3.4	14	0.88
Dissolved Solids (160.1), mg/L	500	490	500	490	490
Alkalinity (310.1)					
Carbonate Alk (as CaCO ₃), mg/L	<1	<1	<1	<1	<1
Bicarbonate Alk (as CaCO ₃), mg/L	250	290	260	240	240
Hydroxide Alk (as CaCO ₃), mg/L	<1	<1	<1	<1	<1
Total Alkalinity (as CaCO ₃), mg/L	250	290	260	240	240
Calcium (6010/200.7), mg/L	100	110	100	100	100
Magnesium (6010/200.7), mg/L	24	25	24	24	24
Potassium (6010/200.7), mg/L	4.8	4.7	4.9	4.7	4.3
Sodium (6010/200.7), mg/L	29	26	27	27	27
Digestion (3010), Date	08/19/94	08/19/94	08/19/94	08/19/94	08/19/94

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES					DATE SAMPLED
08-190-1	GW-1					16 AUG 94
08-190-2	GW-2					16 AUG 94
08-190-3	GW-3					16 AUG 94
08-190-4	GW-4					16 AUG 94
08-190-5	GW-5					16 AUG 94
PARAMETER	08-190-1	08-190-2	08-190-3	08-190-4	08-190-5	
TPH (8015M)						
Date Analyzed	08/22/94	08/22/94	08/23/94	08/25/94	08/23/94	
Date Extracted	08/17/94	08/17/94	08/17/94	08/17/94	08/17/94	
Dilution Factor, Times	1	1	1	1	1	
TPH (total), mg/L	<1	<1	<1	<1	<1	
Other TPH (8015M)	---	---	---	---	---	

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Sunnyvale, CA 91201
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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES					DATE SAMPLED
08-190-1	GW-1					16 AUG 94
08-190-2	GW-2					16 AUG 94
08-190-3	GW-3					16 AUG 94
08-190-4	GW-4					16 AUG 94
08-190-5	GW-5					16 AUG 94
PARAMETER	08-190-1	08-190-2	08-190-3	08-190-4	08-190-5	
E524.2/VOC						
Date Analyzed	08/29/94	08/28/94	08/30/94	08/29/94	08/24/94	
Date Extracted	08/29/94	08/28/94	08/30/94	08/29/94	08/24/94	
Dilution Factor, Times	100	50	100	10	1	
1,1,1,2-Tetrachloroethane, ug/L	<20	<10	<20	<2	<0.2	
1,1,1-Trichloroethane, ug/L	20	10	21	11	0.96	
1,1,2,2-Tetrachloroethane, ug/L	<20	<10	<20	<2	<0.2	
1,1,2-Trichloroethane, ug/L	<20	<10	<20	<2	<0.2	
1,1-Dichloroethane, ug/L	<20	<10	<20	<2	<0.2	
1,1-Dichloroethene, ug/L	<20	<10	22	<2	0.79	
1,1-Dichloropropene, ug/L	<20	<10	<20	<2	<0.2	
1,2,3-Trichlorobenzene, ug/L	<20	<10	<20	<2	<0.2	
1,2,3-Trichloropropane, ug/L	<50	<30	<50	<5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<20	<10	<20	<2	<0.2	
1,2,4-Trimethylbenzene, ug/L	<20	<10	<20	<2	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<50	<30	<50	<5	<0.5	
1,2-Dibromoethane, ug/L	<20	<10	<20	<2	<0.2	
1,2-Dichloroethane, ug/L	<20	<10	<20	<2	<0.2	
1,2-Dichlorobenzene, ug/L	<20	<10	<20	<2	<0.2	
1,2-Dichloropropane, ug/L	<20	<10	<20	<2	<0.2	
1,3,5-Trimethylbenzene, ug/L	<20	<10	<20	<2	<0.2	
1,3-Dichlorobenzene, ug/L	<20	<10	<20	<2	<0.2	
1,3-Dichloropropane, ug/L	<20	<10	<20	<2	<0.2	

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San Jose, CA 95128
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LOG NO: G94-08-190

Received: 17 AUG 94

Mr. Greg Vogelpohl
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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED				
08-190-1	GW-1	16 AUG 94				
08-190-2	GW-2	16 AUG 94				
08-190-3	GW-3	16 AUG 94				
08-190-4	GW-4	16 AUG 94				
08-190-5	GW-5	16 AUG 94				
PARAMETER	08-190-1	08-190-2	08-190-3	08-190-4	08-190-5	
1,4-Dichlorobenzene, ug/L	<20	<10	<20	<2	<0.2	
2,2-Dichloropropane, ug/L	<20	<10	<20	<2	<0.2	
2-Chlorotoluene, ug/L	<20	<10	<20	<2	<0.2	
4-Chlorotoluene, ug/L	<20	<10	<20	<2	<0.2	
Bromobenzene, ug/L	<20	<10	<20	<2	<0.2	
Bromochloromethane, ug/L	<20	<10	<20	<2	<0.2	
Bromodichloromethane, ug/L	<20	<10	<20	<2	<0.2	
Bromomethane, ug/L	<50	<30	<50	<5	<0.5	
Benzene, ug/L	<20	<10	<20	<2	<0.2	
Bromoform, ug/L	<50	<30	<50	<5	<0.5	
Chlorobenzene, ug/L	<20	<10	<20	<2	<0.2	
Carbon Tetrachloride, ug/L	<20	12	<20	2.1	0.67	
Chloroethane, ug/L	<20	<10	<20	<2	<0.2	
Chloroform, ug/L	22	<10	<20	<2	0.50	
Chloromethane, ug/L	<50	<30	<50	<5	<0.5	
Dibromochloromethane, ug/L	<20	<10	<20	<2	<0.2	
Dibromomethane, ug/L	<20	<10	<20	<2	<0.2	
Dichlorodifluoromethane, ug/L	<50	<30	<50	<5	<0.5	
Ethylbenzene, ug/L	<20	<10	<20	<2	<0.2	
Freon 113, ug/L	<20	<10	<20	<2	<0.2	
Hexachlorobutadiene, ug/L	<20	<10	<20	<2	<0.2	
Isopropylbenzene, ug/L	<20	<10	<20	<2	<0.2	
Methylene chloride, ug/L	<20	<10	<20	<2	<0.2	

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LOG NO: G94-08-190

Received: 17 AUG 94

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REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED				
08-190-1	GW-1	16 AUG 94				
08-190-2	GW-2	16 AUG 94				
08-190-3	GW-3	16 AUG 94				
08-190-4	GW-4	16 AUG 94				
08-190-5	GW-5	16 AUG 94				
PARAMETER	08-190-1	08-190-2	08-190-3	08-190-4	08-190-5	
N-Butylbenzene, ug/L	<20	<10	<20	<2	<0.2	
N-Propylbenzene, ug/L	<20	<10	<20	<2	<0.2	
Naphthalene, ug/L	<100	<50	150	<10	<1	
Styrene, ug/L	<20	<10	<20	<2	<0.2	
Trichloroethene, ug/L	1800	830	1200	130	6.4	
Trichlorofluoromethane, ug/L	<20	<10	<20	<2	<0.2	
Toluene, ug/L	<20	<10	<20	<2	0.25	
Tetrachloroethene, ug/L	<20	<10	<20	<2	0.98	
Vinyl chloride, ug/L	<20	<10	<20	<2	<0.2	
cis-1,2-Dichloroethene, ug/L	36	<10	<20	<2	0.51	
cis-1,3-Dichloropropene, ug/L	<20	<10	<20	<2	<0.2	
m- and p-Xylene Isomers, ug/L	<20	<10	<20	<2	<0.2	
o-Xylene, ug/L	<20	<10	<20	<2	<0.2	
p-Isopropyl toluene, ug/L	<20	<10	<20	<2	<0.2	
sec-Butylbenzene, ug/L	<20	<10	<20	<2	<0.2	
trans-1,2-Dichloroethene, ug/L	<20	<10	<20	<2	<0.2	
trans-1,3-Dichloropropene, ug/L	<20	<10	<20	<2	<0.2	
tert-Butylbenzene, ug/L	<20	<10	<20	<2	<0.2	

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1 Western Avenue
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REPORT OF ANALYTICAL RESULTS

Page 6

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-190-6	GW-6	16 AUG 94
PARAMETER	08-190-6	
Ammonia (350.1), mg/L	0.10	
Chloride (300.0/9056), mg/L	44	
Nitrate (300.0/9056), mg/L	78	
Nitrite (300.0/9056), mg/L	<0.2	
Sulfate (300.0/9056), mg/L	73	
Turbidity (180.1), NTU	0.71	
Dissolved Solids (160.1), mg/L	530	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	260	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	260	
Calcium (6010/200.7), mg/L	110	
Magnesium (6010/200.7), mg/L	27	
Potassium (6010/200.7), mg/L	4.7	
Sodium (6010/200.7), mg/L	28	
Digestion (3010), Date	08/19/94	
TPH (8015M)		
Date Analyzed	08/25/94	
Date Extracted	08/17/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

B C Analytical

1 Western Avenue
Sunnyvale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-08-190

Received: 17 AUG 94

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SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Purchase Order: MSA92266

REPORT OF ANALYTICAL RESULTS

Page 7

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-190-6	GW-6	16 AUG 94
PARAMETER	08-190-6	
E524.2/VOC		
Date Analyzed	08/24/94	
Date Extracted	08/24/94	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	

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REPORT OF ANALYTICAL RESULTS

Page 8

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-190-6	GW-6	16 AUG 94
PARAMETER	08-190-6	
Bromobenzene, ug/L	<0.2	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.33	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	1.5	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	0.81	

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REPORT OF ANALYTICAL RESULTS

Page 9

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-190-6	GW-6	16 AUG 94
PARAMETER	08-190-6	
Vinyl chloride, ug/L	<0.2	
cis-1,2-Dichloroethene, ug/L	0.60	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	

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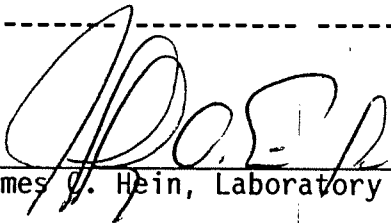
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REPORT OF ANALYTICAL RESULTS

Page 10

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
08-190-7	Trip Blank	16 AUG 94
PARAMETER	08-190-7	
TPH (8015M)		
Date Analyzed	08/23/94	
Date Extracted	08/17/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	


James G. Hein, Laboratory Director

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LOG NO: G94-09-100

Received: 08 SEP 94

Mailed: SEP 29 1994

Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
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Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
09-100-1	GW-1	08 SEP 94
09-100-2	GW-2	08 SEP 94
09-100-3	GW-3	08 SEP 94
09-100-4	GW-4	08 SEP 94
09-100-5	GW-5	08 SEP 94

PARAMETER	09-100-1	09-100-2	09-100-3	09-100-4	09-100-5
524.2/VOC					
Date Analyzed	09/15/94	09/14/94	09/15/94	09/14/94	09/14/94
Dilution Factor, Times	500	50	250	10	1
1,1,1,2-Tetrachloroethane, ug/L	<100	<10	<50	<2	<0.2
1,1,1-Trichloroethane, ug/L	140	12	83	8.0	0.70
1,1,2,2-Tetrachloroethane, ug/L	<100	<10	<50	<2	<0.2
1,1,2-Trichloroethane, ug/L	<100	<10	<50	<2	<0.2
1,1-Dichloroethane, ug/L	<100	<10	51	<2	<0.2
1,1-Dichloroethene, ug/L	<100	17	59	8.5	0.90
1,1-Dichloropropene, ug/L	<100	<10	<50	<2	<0.2
1,2,3-Trichlorobenzene, ug/L	<100	<10	<50	<2	<0.2
1,2,3-Trichloropropane, ug/L	<300	<30	<200	<5	<0.5
1,2,4-Trichlorobenzene, ug/L	<100	<10	<50	<2	<0.2
1,2,4-Trimethylbenzene, ug/L	<100	<10	<50	<2	<0.2
1,2-Dibromo-3-chloropropane, ug/L	<300	<30	<200	<5	<0.5
1,2-Dibromoethane, ug/L	<100	<10	<50	<2	<0.2
1,2-Dichloroethane, ug/L	<100	<10	<50	<2	<0.2
1,2-Dichlorobenzene, ug/L	<100	<10	<50	<2	<0.2
1,2-Dichloropropane, ug/L	<100	<10	<50	<2	<0.2
1,3,5-Trimethylbenzene, ug/L	<100	<10	<50	<2	<0.2
1,3-Dichlorobenzene, ug/L	<100	<10	<50	<2	<0.2
1,3-Dichloropropane, ug/L	<100	<10	<50	<2	<0.2
1,4-Dichlorobenzene, ug/L	<100	<10	<50	<2	<0.2
2,2-Dichloropropane, ug/L	<100	<10	<50	<2	<0.2

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LOG NO: G94-09-100

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED				
09-100-1	GW-1	08 SEP 94				
09-100-2	GW-2	08 SEP 94				
09-100-3	GW-3	08 SEP 94				
09-100-4	GW-4	08 SEP 94				
09-100-5	GW-5	08 SEP 94				
PARAMETER	09-100-1	09-100-2	09-100-3	09-100-4	09-100-5	
2-Chlorotoluene, ug/L	<100	<10	<50	<2	<0.2	
4-Chlorotoluene, ug/L	<100	<10	<50	<2	<0.2	
Bromobenzene, ug/L	<100	<10	<50	<2	<0.2	
Bromochloromethane, ug/L	<100	<10	<50	<2	<0.2	
Bromodichloromethane, ug/L	<100	<10	<50	<2	<0.2	
Bromomethane, ug/L	<300	<30	<200	<5	<0.5	
Benzene, ug/L	<100	<10	<50	<2	<0.2	
Bromoform, ug/L	<300	<30	<200	<5	<0.5	
Chlorobenzene, ug/L	<100	<10	<50	<2	<0.2	
Carbon Tetrachloride, ug/L	<100	14	<50	<2	0.50	
Chloroethane, ug/L	<100	<10	<50	<2	<0.2	
Chloroform, ug/L	<100	<10	<50	2.1	0.50	
Chloromethane, ug/L	<300	<30	<200	<5	<0.5	
Dibromochloromethane, ug/L	<100	<10	<50	<2	<0.2	
Dibromomethane, ug/L	<100	<10	<50	<2	<0.2	
Dichlorodifluoromethane, ug/L	<300	<30	<200	<5	<0.5	
Ethylbenzene, ug/L	<100	<10	<50	<2	<0.2	
Freon 113, ug/L	<100	<10	<50	<2	<0.2	
Hexachlorobutadiene, ug/L	<100	<10	<50	<2	<0.2	
Isopropylbenzene, ug/L	<100	<10	<50	<2	<0.2	
Methylene chloride, ug/L	<100	<10	<50	<2	<0.2	
N-Butylbenzene, ug/L	<100	<10	<50	<2	<0.2	
N-Propylbenzene, ug/L	<100	<10	<50	<2	<0.2	

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LOG NO: G94-09-100

Received: 08 SEP 94

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3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

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Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
09-100-1	GW-1	08 SEP 94
09-100-2	GW-2	08 SEP 94
09-100-3	GW-3	08 SEP 94
09-100-4	GW-4	08 SEP 94
09-100-5	GW-5	08 SEP 94

PARAMETER	09-100-1	09-100-2	09-100-3	09-100-4	09-100-5
Naphthalene, ug/L	<500	<50	<300	<10	<1
Styrene, ug/L	<100	<10	<50	<2	<0.2
Trichloroethene, ug/L	6400	810	4300	100	6.0
Trichlorofluoromethane, ug/L	<100	<10	<50	<2	<0.2
Toluene, ug/L	<100	<10	<50	<2	<0.2
Tetrachloroethene, ug/L	<100	<10	<50	<2	0.70
Vinyl chloride, ug/L	<100	<10	<50	<2	<0.2
cis-1,2-Dichloroethene, ug/L	160	<10	79	<2	0.30
cis-1,3-Dichloropropene, ug/L	<100	<10	<50	<2	<0.2
m- and p-Xylene Isomers, ug/L	<100	<10	<50	<2	<0.2
o-Xylene, ug/L	<100	<10	<50	<2	<0.2
p-Isopropyl toluene, ug/L	<100	<10	<50	<2	<0.2
sec-Butylbenzene, ug/L	<100	<10	<50	<2	<0.2
trans-1,2-Dichloroethene, ug/L	<100	<10	<50	<2	<0.2
trans-1,3-Dichloropropene, ug/L	<100	<10	<50	<2	<0.2
tert-Butylbenzene, ug/L	<100	<10	<50	<2	<0.2
Other E524.2/VOC	---	---	---	---	---

B C Analytical

601 Western Avenue
Sunnyvale, CA 91201
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LOG NO: G94-09-100

Received: 08 SEP 94

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
09-100-6	GW-6	08 SEP 94
PARAMETER	09-100-6	
E524.2/VOC		
Date Analyzed	09/14/94	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
09-100-6	GW-6	08 SEP 94
PARAMETER	09-100-6	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	0.40	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.30	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	1.1	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	0.70	
Vinyl chloride, ug/L	<0.2	

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901 Western Avenue
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LOG NO: G94-09-100

Received: 08 SEP 94

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SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

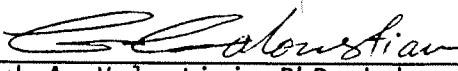
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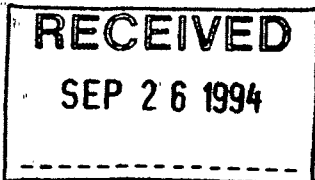
REPORT OF ANALYTICAL RESULTS

Page 6

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
09-100-6	GW-6	08 SEP 94
PARAMETER	09-100-6	
cis-1,2-Dichloroethene, ug/L	0.40	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	


Mark A. Valentini, PhD, Laboratory Director

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ndale, CA 91201
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**AMENDED REPORT**

SEP 22 1994

LOG NO: G94-09-099

Received: 08 SEP 94

Mailed:

Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
09-099-1	GW-7	07 SEP 94			
09-099-2	GW-8	07 SEP 94			
09-099-3	GW-9	07 SEP 94			
09-099-4	GW-10	07 SEP 94			
PARAMETER	09-099-1	09-099-2	09-099-3	09-099-4	
E524.2/VOC					
Date Analyzed	09/13/94	09/13/94	09/13/94	09/13/94	
Dilution Factor, Times	5	1	5	500	
1,1,1,2-Tetrachloroethane, ug/L	<1	<0.2	<1	<100	
1,1,1-Trichloroethane, ug/L	<1	<0.2	2.4	<100	
1,1,2,2-Tetrachloroethane, ug/L	<1	<0.2	<1	<100	
1,1,2-Trichloroethane, ug/L	<1	<0.2	<1	<100	
1,1-Dichloroethane, ug/L	<1	<0.2	<1	<100	
1,1-Dichloroethene, ug/L	<1	<0.2	2.9	<100	
1,1-Dichloropropene, ug/L	<1	<0.2	<1	<100	
1,2,3-Trichlorobenzene, ug/L	<1	<0.2	<1	<100	
1,2,3-Trichloropropane, ug/L	<3	<0.5	<3	<300	
1,2,4-Trichlorobenzene, ug/L	<1	<0.2	<1	<100	
1,2,4-Trimethylbenzene, ug/L	<1	<0.2	<1	<100	
1,2-Dibromo-3-chloropropane, ug/L	<3	<0.5	<3	<300	
1,2-Dibromoethane, ug/L	<1	<0.2	<1	<100	
1,2-Dichloroethane, ug/L	<1	<0.2	<1	<100	
1,2-Dichlorobenzene, ug/L	<1	<0.2	<1	<100	
1,2-Dichloropropane, ug/L	<1	<0.2	<1	<100	
1,3,5-Trimethylbenzene, ug/L	<1	<0.2	<1	<100	
1,3-Dichlorobenzene, ug/L	<1	<0.2	<1	<100	
1,3-Dichloropropane, ug/L	<1	<0.2	<1	<100	
1,4-Dichlorobenzene, ug/L	<1	<0.2	<1	<100	
2,2-Dichloropropane, ug/L	<1	<0.2	<1	<100	
2-Chlorotoluene, ug/L	<1	<0.2	<1	<100	

BC Analytical

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LOG NO: G94-09-099

Received: 08 SEP 94

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
09-099-1	GW-7	07 SEP 94			
09-099-2	GW-8	07 SEP 94			
09-099-3	GW-9	07 SEP 94			
09-099-4	GW-10	07 SEP 94			
PARAMETER	09-099-1	09-099-2	09-099-3	09-099-4	
4-Chlorotoluene, ug/L	<1	<0.2	<1	<100	
Bromobenzene, ug/L	<1	<0.2	<1	<100	
Bromochloromethane, ug/L	<1	<0.2	<1	<100	
Bromodichloromethane, ug/L	<1	<0.2	<1	<100	
Bromomethane, ug/L	<3	<0.5	<3	<300	
Benzene, ug/L	<1	<0.2	<1	<100	
Bromoform, ug/L	<3	<0.5	<1	<300	
Chlorobenzene, ug/L	<1	<0.2	<1	<100	
Carbon Tetrachloride, ug/L	<1	1.4	1.8	<100	
Chloroethane, ug/L	<1	<0.2	<1	<100	
Chloroform, ug/L	2.2	0.6	1.1	<100	
Chloromethane, ug/L	<3	<0.5	<3	<300	
Dibromochloromethane, ug/L	<1	<0.2	<1	<100	
Dibromomethane, ug/L	<1	<0.2	<1	<100	
Dichlorodifluoromethane, ug/L	<3	<0.5	<3	<300	
Ethylbenzene, ug/L	<1	<0.2	<1	<100	
Freon 113, ug/L	<1	<0.2	<1	<100	
Hexachlorobutadiene, ug/L	<1	<0.2	<1	<100	
Isopropylbenzene, ug/L	<1	<0.2	<1	<100	
Methylene chloride, ug/L	<1	<0.2	<1	<100	
N-Butylbenzene, ug/L	<1	<0.2	<1	<100	
N-Propylbenzene, ug/L	<1	<0.2	<1	<100	
Naphthalene, ug/L	<5	<1	<5	<500	
Styrene, ug/L	<1	<0.2	<1	<100	

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LOG NO: G94-09-099

Received: 08 SEP 94

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Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
09-099-1	GW-7	07 SEP 94			
09-099-2	GW-8	07 SEP 94			
09-099-3	GW-9	07 SEP 94			
09-099-4	GW-10	07 SEP 94			
PARAMETER	09-099-1	09-099-2	09-099-3	09-099-4	
Trichloroethene, ug/L	48	32	75	4700	
Trichlorofluoromethane, ug/L	<1	<0.2	<1	<100	
Toluene, ug/L	<1	<0.2	<1	<100	
Tetrachloroethene, ug/L	<1	0.4	4.4	<100	
Vinyl chloride, ug/L	<1	<0.2	<1	<100	
cis-1,2-Dichloroethene, ug/L	2.3	0.3	<1	100	
cis-1,3-Dichloropropene, ug/L	<1	<0.2	<1	<100	
m- and p-Xylene Isomers, ug/L	<1	<0.2	<1	<100	
o-Xylene, ug/L	<1	<0.2	<1	<100	
p-Isopropyl toluene, ug/L	<1	<0.2	<1	<100	
sec-Butylbenzene, ug/L	<1	<0.2	<1	<100	
trans-1,2-Dichloroethene, ug/L	<1	<0.2	<1	<100	
trans-1,3-Dichloropropene, ug/L	<1	<0.2	<1	<100	
tert-Butylbenzene, ug/L	<1	<0.2	<1	<100	
Other E524.2/VOC	---	---	---	---	



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LOG NO: G94-09-099

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED	
09-099-5	Equipment Blank	08 SEP 94	
09-099-6	Trip Blank #40825	08 SEP 94	
PARAMETER	09-099-5	09-099-6	
E524.2/VOC			
Date Analyzed	09/14/94	09/14/94	
Dilution Factor, Times	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	<0.2	
1,1-Dichloroethane, ug/L	<0.2	<0.2	
1,1-Dichloroethene, ug/L	<0.2	<0.2	
1,1-Dichloropropene, ug/L	<0.2	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5	
1,2-Dibromoethane, ug/L	<0.2	<0.2	
1,2-Dichloroethane, ug/L	<0.2	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	<0.2	
1,2-Dichloropropane, ug/L	<0.2	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	<0.2	
1,3-Dichloropropane, ug/L	<0.2	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	<0.2	
2,2-Dichloropropane, ug/L	<0.2	<0.2	
2-Chlorotoluene, ug/L	<0.2	<0.2	
4-Chlorotoluene, ug/L	<0.2	<0.2	

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REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED	
09-099-5	Equipment Blank	08 SEP 94	
09-099-6	Trip Blank #40825	08 SEP 94	
PARAMETER	09-099-5	09-099-6	
Bromobenzene, ug/L	<0.2	<0.2	
Bromochloromethane, ug/L	<0.2	<0.2	
Bromodichloromethane, ug/L	<0.2	<0.2	
Bromomethane, ug/L	<0.5	<0.5	
Benzene, ug/L	<0.2	<0.2	
Bromoform, ug/L	<0.5	<0.5	
Chlorobenzene, ug/L	<0.2	<0.2	
Carbon Tetrachloride, ug/L	<0.2	<0.2	
Chloroethane, ug/L	<0.2	<0.2	
Chloroform, ug/L	0.80	<0.2	
Chloromethane, ug/L	<0.5	<0.5	
Dibromochloromethane, ug/L	<0.2	<0.2	
Dibromomethane, ug/L	<0.2	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	<0.5	
Ethylbenzene, ug/L	<0.2	<0.2	
Freon 113, ug/L	0.30	<0.2	
Hexachlorobutadiene, ug/L	<0.2	<0.2	
Isopropylbenzene, ug/L	<0.2	<0.2	
Methylene chloride, ug/L	<0.2	<0.2	
N-Butylbenzene, ug/L	<0.2	<0.2	
N-Propylbenzene, ug/L	<0.2	<0.2	
Naphthalene, ug/L	<1	<1	
Styrene, ug/L	<0.2	<0.2	
Trichloroethene, ug/L	<0.2	<0.2	
Trichlorofluoromethane, ug/L	<0.2	<0.2	
Toluene, ug/L	<0.2	<0.2	

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REPORT OF ANALYTICAL RESULTS

Page 6

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED	
09-099-5	Equipment Blank	08 SEP 94	
09-099-6	Trip Blank #40825	08 SEP 94	
PARAMETER	09-099-5	09-099-6	
Tetrachloroethene, ug/L	<0.2	<0.2	
Vinyl chloride, ug/L	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	<0.2	<0.2	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	<0.2	
o-Xylene, ug/L	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	<0.2	
sec-Butylbenzene, ug/L	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	
Other E524.2/VOC	---	---	

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LOG NO: G94-12-189

Received: 10 DEC 94

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
12-189-1	GW-5	10 DEC 94		
12-189-2	GW-8	10 DEC 94		
12-189-3	GW-9	10 DEC 94		
PARAMETER	12-189-1	12-189-2	12-189-3	
Ammonia (350.1), mg/L	7.0	0.17	0.12	
Chloride (300.0/9056), mg/L	30	34	30	
Nitrate (300.0/9056), mg/L	56	58	58	
Nitrite (300.0/9056), mg/L	<0.5	<0.5	<0.5	
Sulfate (300.0/9056), mg/L	59	59	58	
Turbidity (180.1), NTU	3.2	12	17	
Dissolved Solids (160.1), mg/L	450	490	440	
Alkalinity (310.1)				
Carbonate Alk (as CaCO3), mg/L	<1	<1	<1	
Bicarbonate Alk (as CaCO3), mg/L	220	250	220	
Hydroxide Alk (as CaCO3), mg/L	<1	<1	<1	
Total Alkalinity (as CaCO3), mg/L	220	250	220	
Calcium (6010/200.7), mg/L	94	100	96	
Magnesium (6010/200.7), mg/L	21	22	21	
Potassium (6010/200.7), mg/L	3.8	4.5	4.7	
Sodium (6010/200.7), mg/L	24	27	29	
Digestion (3010), Date	12/19/94	12/19/94	12/19/94	

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
12-189-1	GW-5	10 DEC 94		
12-189-2	GW-8	10 DEC 94		
12-189-3	GW-9	10 DEC 94		
PARAMETER	12-189-1	12-189-2	12-189-3	
TPH (8015M)				
Date Analyzed	12/12/94	12/12/94	12/12/94	
Date Extracted	12/14/94	12/14/94	12/14/94	
Dilution Factor, Times	1	1	1	
TPH (total), mg/L	<1	<1	<1	
Other TPH (8015M)	---	---	---	

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
12-189-1	GW-5	10 DEC 94		
12-189-2	GW-8	10 DEC 94		
12-189-3	GW-9	10 DEC 94		
PARAMETER	12-189-1	12-189-2	12-189-3	
E524.2/VOC				
Date Analyzed	12/13/94	12/13/94	12/14/94	
Dilution Factor, Times	1	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	<0.2	0.5	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	<0.2	<0.2	
1,1-Dichloroethane, ug/L	<0.2	0.3	<0.2	
1,1-Dichloroethene, ug/L	<0.2	<0.2	0.5	
1,1-Dichloropropene, ug/L	<0.2	<0.2	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	<0.5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5	<0.5	
1,2-Dibromoethane, ug/L	<0.2	<0.2	<0.2	
1,2-Dichloroethane, ug/L	<0.2	<0.2	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	
1,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	
1,3-Dichloropropane, ug/L	<0.2	<0.2	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	
2,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	
2-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	

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Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
12-189-1	GW-5	10 DEC 94		
12-189-2	GW-8	10 DEC 94		
12-189-3	GW-9	10 DEC 94		
PARAMETER		12-189-1	12-189-2	12-189-3
4-Chlorotoluene, ug/L		<0.2	<0.2	<0.2
Bromobenzene, ug/L		<0.2	<0.2	<0.2
Bromochloromethane, ug/L		<0.2	<0.2	<0.2
Bromodichloromethane, ug/L		<0.2	<0.2	<0.2
Bromomethane, ug/L		<0.5	<0.5	<0.5
Benzene, ug/L		<0.2	<0.2	<0.2
Bromoform, ug/L		<0.5	<0.5	<0.5
Chlorobenzene, ug/L		<0.2	<0.2	<0.2
Carbon Tetrachloride, ug/L		<0.2	0.3	0.3
Chloroethane, ug/L		<0.2	<0.2	<0.2
Chloroform, ug/L		0.4	0.6	0.5
Chloromethane, ug/L		<0.5	<0.5	<0.5
Dibromochloromethane, ug/L		<0.2	<0.2	<0.2
Dibromomethane, ug/L		<0.2	<0.2	<0.2
Dichlorodifluoromethane, ug/L		2.4	<0.5	<0.5
Ethylbenzene, ug/L		<0.2	<0.2	<0.2
Freon 113, ug/L		<0.2	<0.2	<0.2
Hexachlorobutadiene, ug/L		<0.2	<0.2	<0.2
Isopropylbenzene, ug/L		<0.2	<0.2	<0.2
Methylene chloride, ug/L		<0.2	<0.2	<0.2
N-Butylbenzene, ug/L		<0.2	<0.2	<0.2
N-Propylbenzene, ug/L		<0.2	<0.2	<0.2
Naphthalene, ug/L		<1	<1	<1
Styrene, ug/L		<0.2	<0.2	<0.2
Trichloroethene, ug/L		1.6	8.6	9.4

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REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
12-189-1	GW-5	10 DEC 94		
12-189-2	GW-8	10 DEC 94		
12-189-3	GW-9	10 DEC 94		
PARAMETER	12-189-1	12-189-2	12-189-3	
Trichlorofluoromethane, ug/L	<0.2	<0.2	<0.2	
Toluene, ug/L	<0.2	<0.2	<0.2	
Tetrachloroethene, ug/L	1.1	2.9	1.9	
Vinyl chloride, ug/L	<0.2	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	1.0	1.7	0.5	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	<0.2	<0.2	
o-Xylene, ug/L	<0.2	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	<0.2	<0.2	
sec-Butylbenzene, ug/L	<0.2	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	<0.2	
Other E524.2/VOC	---	---	---	

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JAN - 9 1995

LOG NO: G94-12-358

Received: 21 DEC 94

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Purchase Order: 92266

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
12-358-1	Trip Blank	08 DEC 94
PARAMETER	12-358-1	
TPH (8015M)		
Date Analyzed	12/30/94	
Date Extracted	12/29/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

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LOG NO: G94-12-358

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
12-358-1	Trip Blank	08 DEC 94
PARAMETER	12-358-1	
Vol.Pri.Poll. (EPA-8240)		
Date Analyzed	12/22/94	
Dilution Factor, Times	1	
1,1,1-Trichloroethane, ug/L	<1	
1,1,2,2-Tetrachloroethane, ug/L	<1	
1,1,2-Trichloroethane, ug/L	<1	
1,1-Dichloroethane, ug/L	<1	
1,1-Dichloroethene, ug/L	<1	
1,2-Dichloroethane, ug/L	<1	
1,2-Dichlorobenzene, ug/L	<1	
1,2-Dichloropropane, ug/L	<1	
1,3-Dichlorobenzene, ug/L	<1	
1,4-Dichlorobenzene, ug/L	<1	
2-Chloroethylvinylether, ug/L	<1	
2-Hexanone, ug/L	<5	
Acetone, ug/L	<20	
Acrolein, ug/L	<50	
Acrylonitrile, ug/L	<50	
Bromodichloromethane, ug/L	<1	
Bromomethane, ug/L	<1	
Benzene, ug/L	<1	
Bromoform, ug/L	<1	
Chlorobenzene, ug/L	<1	
Carbon Tetrachloride, ug/L	<1	
Chloroethane, ug/L	<1	
Chloroform, ug/L	<1	
Chloromethane, ug/L	<1	

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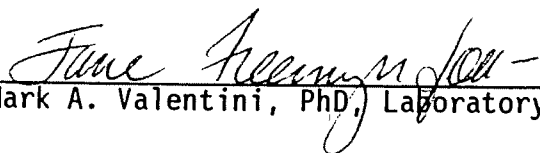
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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
12-358-1	Trip Blank	08 DEC 94
PARAMETER	12-358-1	
Carbon Disulfide, ug/L	<2	
Dibromochloromethane, ug/L	<1	
Ethylbenzene, ug/L	<1	
Freon 113, ug/L	<2	
Methyl ethyl ketone, ug/L	<5	
Methyl isobutyl ketone, ug/L	<5	
Methylene chloride, ug/L	<1	
Styrene, ug/L	<1	
Trichloroethene, ug/L	<1	
Trichlorofluoromethane, ug/L	<1	
Toluene, ug/L	<1	
Tetrachloroethene, ug/L	<1	
Vinyl acetate, ug/L	<10	
Vinyl chloride, ug/L	<1	
Total Xylene Isomers, ug/L	<3	
cis-1,2-Dichloroethene, ug/L	<1	
cis-1,3-Dichloropropene, ug/L	<1	
trans-1,2-Dichloroethene, ug/L	<1	
trans-1,3-Dichloropropene, ug/L	<1	


Mark A. Valentini, PhD, Laboratory Director

21 Western Avenue
ndale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-12-156

Received: 09 DEC 94

Mailed: DEC 20 1994

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
12-156-1	GW-6	08 DEC 94
PARAMETER	12-156-1	
Ammonia (350.1), mg/L	<0.1	
Chloride (300.0/9056), mg/L	42	
Nitrate (300.0/9056), mg/L	67	
Nitrite (300.0/9056), mg/L	<0.5	
Sulfate (300.0/9056), mg/L	74	
Turbidity (180.1), NTU	1.2	
Dissolved Solids (160.1), mg/L	510	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	240	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	240	
Calcium (6010/200.7), mg/L	110	
Magnesium (6010/200.7), mg/L	26	
Potassium (6010/200.7), mg/L	4.3	
Sodium (6010/200.7), mg/L	26	
Digestion (3010), Date	12/15/94	
TPH (8015M)		
Date Analyzed	12/12/94	
Date Extracted	12/14/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

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LOG NO: G94-12-156

Received: 09 DEC 94

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Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
12-156-1	GW-6	08 DEC 94
PARAMETER	12-156-1	
E524.2/VOC		
Date Analyzed	12/13/94	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
12-156-1	GW-6	08 DEC 94
PARAMETER	12-156-1	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	0.3	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.3	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	0.7	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	0.9	
Vinyl chloride, ug/L	<0.2	

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LOG NO: G94-12-156

Received: 09 DEC 94

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3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
12-156-1	GW-6	08 DEC 94
PARAMETER	12-156-1	
cis-1,2-Dichloroethene, ug/L	0.4	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	

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LOG NO: G94-12-156

Received: 09 DEC 94

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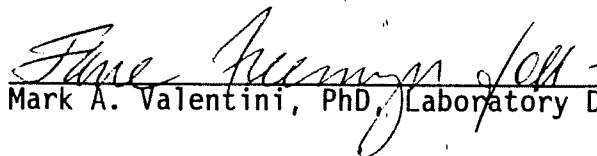
Purchase Order: 92266

Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
12-156-2	Trip Blank	08 DEC 94
PARAMETER	12-156-2	
Sample Held, Not Analyzed	HOLD	


Mark A. Valentini, PhD, Laboratory Director

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ndale, CA 91201
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RECEIVED**DEC 09 1994**

LOG NO: G94-11-445

Received: 23 NOV 94

Mailed: DEC 8 1994

Mr. Greg Vogelpohl
SEACOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: A0057-001-01

Requisition: ASN07

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-445-1	GW-2	22 NOV 94
PARAMETER	11-445-1	
TPH (8015M)		
Date Analyzed	12/06/94	
Date Extracted	12/05/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

B C Analytical

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LOG NO: G94-11-445

Received: 23 NOV 94

Mr. Greg Vogelpohl
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Purchase Order: A0057-001-01

Requisition: ASN07

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-445-1	GW-2	22 NOV 94
PARAMETER	11-445-1	
E524.2/VOC		
Date Analyzed	11/29/94	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	1.5	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	0.5	
1,1-Dichloroethene, ug/L	1.3	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.5	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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LOG NO: G94-11-445

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Requisition: ASN07

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-445-1	GW-2	22 NOV 94
PARAMETER	11-445-1	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	1.6	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.7	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	43	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	2.1	
Vinyl chloride, ug/L	<0.2	

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LOG NO: G94-11-445

Received: 23 NOV 94

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Requisition: ASN07

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-445-1	GW-2	22 NOV 94
PARAMETER	11-445-1	
cis-1,2-Dichloroethene, ug/L	1.7	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	

Mark A. Valentini for -
Mark A. Valentini, PhD, Laboratory Director



003538

301 Western Avenue
Sandydale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-12-190

Received: 12 DEC 94

Mailed: DEC 28 1994

Mr. Greg Vogelpohl
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3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED	
12-190-1	GW-10	11 DEC 94	
12-190-2	GW-7	11 DEC 94	
PARAMETER	12-190-1	12-190-2	
Ammonia (350.1), mg/L	<0.1	<0.1	
Chloride (300.0/9056), mg/L	32	31	
Nitrate (300.0/9056), mg/L	64	61	
Nitrite (300.0/9056), mg/L	<0.5	<0.5	
Sulfate (300.0/9056), mg/L	57	58	
Turbidity (180.1), NTU	78	1.5	
Dissolved Solids (160.1), mg/L	460	460	
Alkalinity (310.1)			
Carbonate Alk (as CaCO3), mg/L	<1	<1	
Bicarbonate Alk (as CaCO3), mg/L	240	220	
Hydroxide Alk (as CaCO3), mg/L	<1	<1	
Total Alkalinity (as CaCO3), mg/L	240	220	
Calcium (6010/200.7), mg/L	98	94	
Magnesium (6010/200.7), mg/L	22	21	
Potassium (6010/200.7), mg/L	4.4	4.0	
Sodium (6010/200.7), mg/L	28	26	
Digestion (3010), Date	12/19/94	12/19/94	
TPH (8015M)			
Date Analyzed	12/12/94	12/12/94	
Date Extracted	12/14/94	12/14/94	
Dilution Factor, Times	1	1	
TPH (total), mg/L	<1	<1	
Other TPH (8015M)	---	---	

B C Analytical

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LOG NO: G94-12-190

Received: 12 DEC 94

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Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED	
12-190-1	GW-10	11 DEC 94	
12-190-2	GW-7	11 DEC 94	
PARAMETER	12-190-1	12-190-2	
E524.2/VOC			
Date Analyzed	12/15/94	12/14/94	
Dilution Factor, Times	25	25	
1,1,1,2-Tetrachloroethane, ug/L	<5	<5	
1,1,1-Trichloroethane, ug/L	7.2	8.1	
1,1,2,2-Tetrachloroethane, ug/L	<5	<5	
1,1,2-Trichloroethane, ug/L	<5	<5	
1,1-Dichloroethane, ug/L	<5	<5	
1,1-Dichloroethene, ug/L	<5	7.7	
1,1-Dichloropropene, ug/L	<5	<5	
1,2,3-Trichlorobenzene, ug/L	<5	<5	
1,2,3-Trichloropropane, ug/L	<20	<20	
1,2,4-Trichlorobenzene, ug/L	<5	<5	
1,2,4-Trimethylbenzene, ug/L	<5	<5	
1,2-Dibromo-3-chloropropane, ug/L	<20	<20	
1,2-Dibromoethane, ug/L	<5	<5	
1,2-Dichloroethane, ug/L	<5	<5	
1,2-Dichlorobenzene, ug/L	<5	<5	
1,2-Dichloropropane, ug/L	<5	<5	
1,3,5-Trimethylbenzene, ug/L	<5	<5	
1,3-Dichlorobenzene, ug/L	<5	<5	
1,3-Dichloropropane, ug/L	<5	<5	
1,4-Dichlorobenzene, ug/L	<5	<5	
2,2-Dichloropropane, ug/L	<5	<5	
2-Chlorotoluene, ug/L	<5	<5	
4-Chlorotoluene, ug/L	<5	<5	

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LOG NO: G94-12-190

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Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED	
12-190-1	GW-10	11 DEC 94	
12-190-2	GW-7	11 DEC 94	
PARAMETER	12-190-1	12-190-2	
Bromobenzene, ug/L	<5	<5	
Bromochloromethane, ug/L	<5	<5	
Bromodichloromethane, ug/L	<5	<5	
Bromomethane, ug/L	<20	<20	
Benzene, ug/L	<5	<5	
Bromoform, ug/L	<20	<20	
Chlorobenzene, ug/L	<5	<5	
Carbon Tetrachloride, ug/L	<5	<5	
Chloroethane, ug/L	<5	<5	
Chloroform, ug/L	5.4	<5	
Chloromethane, ug/L	<20	<20	
Dibromochloromethane, ug/L	<5	<5	
Dibromomethane, ug/L	<5	<5	
Dichlorodifluoromethane, ug/L	<20	<20	
Ethylbenzene, ug/L	<5	<5	
Freon 113, ug/L	<5	<5	
Hexachlorobutadiene, ug/L	<5	<5	
Isopropylbenzene, ug/L	<5	<5	
Methylene chloride, ug/L	<5	<5	
N-Butylbenzene, ug/L	<5	<5	
N-Propylbenzene, ug/L	<5	<5	
Naphthalene, ug/L	<30	<30	
Styrene, ug/L	<5	<5	
Trichloroethene, ug/L	360	440	
Trichlorofluoromethane, ug/L	<5	<5	
Toluene, ug/L	<5	<5	

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LOG NO: G94-12-190

Received: 12 DEC 94

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED	
12-190-1	GW-10	11 DEC 94	
12-190-2	GW-7	11 DEC 94	
PARAMETER	12-190-1	12-190-2	
Tetrachloroethene, ug/L	<5	<5	
Vinyl chloride, ug/L	<5	<5	
cis-1,2-Dichloroethene, ug/L	7.5	8.9	
cis-1,3-Dichloropropene, ug/L	<5	<5	
m- and p-Xylene Isomers, ug/L	<5	<5	
o-Xylene, ug/L	<5	<5	
p-Isopropyl toluene, ug/L	<5	<5	
sec-Butylbenzene, ug/L	<5	<5	
trans-1,2-Dichloroethene, ug/L	<5	<5	
trans-1,3-Dichloropropene, ug/L	<5	<5	
tert-Butylbenzene, ug/L	<5	<5	
Other E524.2/VOC	---	---	

Mark A. Valentini
Mark A. Valentini, PhD, Laboratory Director

1 Western Avenue
Sunnyvale, CA 91201
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LOG NO: G94-12-213

Received: 13 DEC 94

Mailed: JAN 17 1995

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
12-213-1	GW-3	13 DEC 94		
12-213-2	GW-2	12 DEC 94		
12-213-3	GW-4	12 DEC 94		
PARAMETER	12-213-1	12-213-2	12-213-3	
Ammonia (350.1), mg/L	0.12	<0.1	0.15	
Chloride (300.0/9056), mg/L	35	35	22	
Nitrate (300.0/9056), mg/L	64	65	44	
Nitrite (300.0/9056), mg/L	<0.5	<0.5	<0.5	
Sulfate (300.0/9056), mg/L	57	58	37	
Turbidity (180.1), NTU	30	130	58	
Dissolved Solids (160.1), mg/L	490	500	300	
Alkalinity (310.1)				
Carbonate Alk (as CaCO ₃), mg/L	<1	<1	<1	
Bicarbonate Alk (as CaCO ₃), mg/L	240	250	150	
Hydroxide Alk (as CaCO ₃), mg/L	<1	<1	<1	
Total Alkalinity (as CaCO ₃), mg/L	240	250	150	
Calcium (6010/200.7), mg/L	110	95	62	
Magnesium (6010/200.7), mg/L	22	21	14	
Potassium (6010/200.7), mg/L	4.3	3.9	2.6	
Sodium (6010/200.7), mg/L	25	23	16	
Digestion (3010), Date	12/21/94	12/21/94	12/21/94	

BC Analytical

31 Western Avenue
Sunnyvale, CA 91201

818/247-5737

Fax: 818/247-9797

LOG NO: G94-12-213

Received: 13 DEC 94

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Purchase Order: 92266

Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
12-213-1	GW-3	13 DEC 94		
12-213-2	GW-2	12 DEC 94		
12-213-3	GW-4	12 DEC 94		
PARAMETER	12-213-1	12-213-2	12-213-3	
TPH (8015M)				
Date Analyzed	12/20/94	12/20/94	12/20/94	
Date Extracted	12/16/94	12/16/94	12/16/94	
Dilution Factor, Times	1	1	1	
TPH (total), mg/L	<1	<1	<1	
Other TPH (8015M)	---	---	---	

BC Analytical

71 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-12-213

Received: 13 DEC 94

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
12-213-1	GW-3	13 DEC 94		
12-213-2	GW-2	12 DEC 94		
12-213-3	GW-4	12 DEC 94		
PARAMETER	12-213-1	12-213-2	12-213-3	
524.2/VOC				
Date Analyzed	12/15/94	12/15/94	12/15/94	
Dilution Factor, Times	5	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<1	<0.2	<0.2	
1,1,1-Trichloroethane, ug/L	1.4	0.5	0.6	
1,1,2,2-Tetrachloroethane, ug/L	<1	<0.2	<0.2	
1,1,2-Trichloroethane, ug/L	<1	<0.2	<0.2	
1,1-Dichloroethane, ug/L	<1	0.3	<0.2	
1,1-Dichloroethene, ug/L	1.5	0.5	1.0	
1,1-Dichloropropene, ug/L	<1	<0.2	<0.2	
1,2,3-Trichlorobenzene, ug/L	<1	<0.2	<0.2	
1,2,3-Trichloropropane, ug/L	<3	<0.5	<0.5	
1,2,4-Trichlorobenzene, ug/L	<1	<0.2	<0.2	
1,2,4-Trimethylbenzene, ug/L	<1	<0.2	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<3	<0.5	<0.5	
1,2-Dibromoethane, ug/L	<1	<0.2	<0.2	
1,2-Dichloroethane, ug/L	<1	<0.2	<0.2	
1,2-Dichlorobenzene, ug/L	<1	<0.2	<0.2	
1,2-Dichloropropane, ug/L	<1	<0.2	<0.2	
1,3,5-Trimethylbenzene, ug/L	<1	<0.2	<0.2	
1,3-Dichlorobenzene, ug/L	<1	<0.2	<0.2	
1,3-Dichloropropane, ug/L	<1	<0.2	<0.2	
1,4-Dichlorobenzene, ug/L	<1	<0.2	<0.2	
2,2-Dichloropropane, ug/L	<1	<0.2	<0.2	
2-Chlorotoluene, ug/L	<1	<0.2	<0.2	

B C Analytical

21 Western Avenue
Sunnyvale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-12-213

Received: 13 DEC 94

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
12-213-1	GW-3		13 DEC 94	
12-213-2	GW-2		12 DEC 94	
12-213-3	GW-4		12 DEC 94	
PARAMETER	12-213-1	12-213-2	12-213-3	
4-Chlorotoluene, ug/L	<1	<0.2	<0.2	
Bromobenzene, ug/L	<1	<0.2	<0.2	
Bromochloromethane, ug/L	<1	<0.2	<0.2	
Bromodichloromethane, ug/L	<1	<0.2	<0.2	
Bromomethane, ug/L	<3	<0.5	<0.5	
Benzene, ug/L	<1	<0.2	<0.2	
Bromoform, ug/L	<3	<0.5	<0.5	
Chlorobenzene, ug/L	<1	<0.2	<0.2	
Carbon Tetrachloride, ug/L	<1	0.7	0.2	
Chloroethane, ug/L	<1	<0.2	<0.2	
Chloroform, ug/L	<1	0.5	0.4	
Chloromethane, ug/L	<3	<0.5	<0.5	
Dibromochloromethane, ug/L	<1	<0.2	<0.2	
Dibromomethane, ug/L	<1	<0.2	<0.2	
Dichlorodifluoromethane, ug/L	<3	0.5	<0.5	
Ethylbenzene, ug/L	<1	<0.2	<0.2	
Freon 113, ug/L	<1	<0.2	<0.2	
Hexachlorobutadiene, ug/L	<1	<0.2	<0.2	
Isopropylbenzene, ug/L	<1	<0.2	<0.2	
Methylene chloride, ug/L	<1	<0.2	<0.2	
N-Butylbenzene, ug/L	<1	<0.2	<0.2	
N-Propylbenzene, ug/L	<1	<0.2	<0.2	
Naphthalene, ug/L	<5	<1	<1	
Styrene, ug/L	<1	<0.2	<0.2	
Trichloroethene, ug/L	36	13	12	

B C Analytical

11 Western Avenue
Alhambra, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-12-213

Received: 13 DEC 94

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
12-213-1	GW-3	13 DEC 94		
12-213-2	GW-2	12 DEC 94		
12-213-3	GW-4	12 DEC 94		
PARAMETER	12-213-1	12-213-2	12-213-3	
Trichlorofluoromethane, ug/L	<1	<0.2	<0.2	
Toluene, ug/L	<1	<0.2	0.4	
Tetrachloroethene, ug/L	2.4	1.9	0.8	
Vinyl chloride, ug/L	<1	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	1.7	1.4	0.5	
cis-1,3-Dichloropropene, ug/L	<1	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<1	<0.2	<0.2	
o-Xylene, ug/L	<1	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<1	<0.2	0.3	
sec-Butylbenzene, ug/L	<1	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<1	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<1	<0.2	<0.2	
tert-Butylbenzene, ug/L	<1	<0.2	<0.2	
Other E524.2/VOC	---	---	---	

BC Analytical

1 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-12-213

Received: 13 DEC 94

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 6

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
12-213-4	Equipment Blank	12 DEC 94
PARAMETER	12-213-4	
Ammonia (350.1), mg/L	<0.1	
Chloride (300.0/9056), mg/L	<0.1	
Nitrate (300.0/9056), mg/L	<0.1	
Nitrite (300.0/9056), mg/L	<0.1	
Sulfate (300.0/9056), mg/L	<0.1	
Turbidity (180.1), NTU	<0.1	
Dissolved Solids (160.1), mg/L	<10	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	<10	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	<10	
Calcium (6010/200.7), mg/L	<0.5	
Magnesium (6010/200.7), mg/L	<0.1	
Potassium (6010/200.7), mg/L	<0.5	
Sodium (6010/200.7), mg/L	0.72	
Digestion (3010), Date	12/21/94	
TPH (8015M)		
Date Analyzed	12/20/94	
Date Extracted	12/16/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

BC Analytical

1 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-12-213

Received: 13 DEC 94

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 7

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
12-213-4	Equipment Blank	12 DEC 94

PARAMETER	12-213-4
-----------	----------

E524.2/VOC

Date Analyzed	12/14/94
Dilution Factor, Times	1
1,1,1,2-Tetrachloroethane, ug/L	<0.2
1,1,1-Trichloroethane, ug/L	0.3
1,1,2,2-Tetrachloroethane, ug/L	<0.2
1,1,2-Trichloroethane, ug/L	<0.2
1,1-Dichloroethane, ug/L	<0.2
1,1-Dichloroethene, ug/L	<0.2
1,1-Dichloropropene, ug/L	<0.2
1,2,3-Trichlorobenzene, ug/L	<0.2
1,2,3-Trichloropropane, ug/L	<0.5
1,2,4-Trichlorobenzene, ug/L	<0.2
1,2,4-Trimethylbenzene, ug/L	0.4
1,2-Dibromo-3-chloropropane, ug/L	<0.5
1,2-Dibromoethane, ug/L	<0.2
1,2-Dichloroethane, ug/L	<0.2
1,2-Dichlorobenzene, ug/L	<0.2
1,2-Dichloropropane, ug/L	<0.2
1,3,5-Trimethylbenzene, ug/L	<0.2
1,3-Dichlorobenzene, ug/L	<0.2
1,3-Dichloropropane, ug/L	<0.2
1,4-Dichlorobenzene, ug/L	<0.2
2,2-Dichloropropane, ug/L	<0.2
2-Chlorotoluene, ug/L	<0.2
4-Chlorotoluene, ug/L	<0.2
Bromobenzene, ug/L	<0.2

B C Analytical

11 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-12-213

Received: 13 DEC 94

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 8

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
12-213-4	Equipment Blank	12 DEC 94
PARAMETER	12-213-4	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	0.4	
Bromoform, ug/L	<0.5	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.3	
Chloromethane, ug/L	<0.5	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Dichlorodifluoromethane, ug/L	<0.5	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	15	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	0.5	
Tetrachloroethene, ug/L	0.3	
Vinyl chloride, ug/L	<0.2	

BC Analytical

1 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-12-213

Received: 13 DEC 94

Mr. Greg Vogelpohl
SECOR
3437 Empressa Dr., Suite A
San Luis Obispo, California 93401


Purchase Order: 92266

Requisition: ASN07
Project: A0057-001-01

REPORT OF ANALYTICAL RESULTS

Page 9

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
12-213-4	Equipment Blank	12 DEC 94
PARAMETER	12-213-4	
cis-1,2-Dichloroethene, ug/L	<0.2	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	0.4	
o-Xylene, ug/L	0.3	
p-Isopropyl toluene, ug/L	0.9	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	0.3	
Other E524.2/VOC	---	


Mark A. Valentini, PhD, Laboratory Director

APPENDIX C
CHAIN OF CUSTODY DOCUMENTS

544-119-049

BCA Log Number

C ANALYTICAL
☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894
☒ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737

***KEY:** AG—Aqueous NA—Nonaqueous SL—Sludge
 GW—Groundwater SO—Soil PE—Petroleum

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
 Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

BCA Log Number GQH-84-172

BCA Log Number

20

10

100

10

Age Group	Percentage (%)
18-29	65
30-49	75
50-69	85
70+	100

BODY RECORD

HAIN OF CUST

Age Group	Percentage of Respondents
18-29	85%
30-49	80%
50-69	75%
70+	70%

[illegible]

3 C ANALYTICAL
☒ 1255 Powell Street, Emeryville, CA 94608 (510) 428-2300
☒ 5901 Western Avenue, Glendale, CA 91201 (818) 247-5737
☐ 1700 Coca Cola Drive, Warminster, PA 18956 (717) 978-0113

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
 GW—Groundwater SO—Soil OT—Other PE—Petroleum

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
 Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

BCA Log Number: 6274-08-170

BCA Log Number

[illegible]

B C ANALYTICAL
 1255 Powell Street, Emeryville, CA 94608 (510) 428-2300
☒ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
☐ 1200 Gane Avenue, Walnut, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
 Hazardous samples will be returned to client or disposed of at client's expense.
 Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
 GW—Groundwater SO—Soll OT—Other PE—Petroleum

94-12-1076 BCA Log Number

[illegible]

BCA Log Number

*KEY: AG—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements:

BC ANALYTICAL

☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894

801 Western Avenue, Glendale, CA 91201 (818) 247-5737

6214-17126

C ANALYTICAL
1085 Shary Circle, Concord, CA 94518 (510) 825-3894
301 Western Avenue, Glendale, CA 91201 (818) 247-5737

*KEY: AG---Aqueous NA---Nonaqueous SL---Sludge
GW---Groundwater SO---Soil PE---Petroleum

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

] 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
] 1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Disposal arrangements: _____

*KEY: AG—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil PE—Petroleum

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.

Hazardous sample

Disposal arrangements:

BC ANALYTICAL

☐ 1085 Shary Circle, Concord, CA 94518 (510) 825-3894

☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737

1200 Gene Aulry Way, Anaheim, CA 92805 (714) 978-0113

September 7, 1995

Mr. Barry Foose
Kaiser Regional Laboratories
Health Environmental Safety Office
11668 Sherman Way
North Hollywood, CA 91605

RE: REQUESTED DOCUMENT

Dear Mr. Foose:

Per our agreement, one (1) copy is enclosed for the below referenced document:

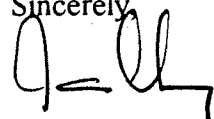
RESULTS OF GROUNDWATER MONITORING
THIRD AND FOURTH QUARTERS 1994
AlliedSignal AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA
VOLUME I

dated August 17, 1995

Prepared by SECOR International Incorporated
Job Number: A0057-001/ASN40

If you have any questions or comments, please call me at (310) 512-2296

Sincerely,



James C. Long
Program Manager
Environmental Remediation
Facility Operations

(1) Enclosure

cc: K. Berke, AlliedSignal Automotive
B. Dehghi, Merit Services
J. Lambert, Kaiser Permanente
J. Stubbs, AES
A. Zimmerman, Kaiser Permanente

003563

September 7, 1995

Mr. Barry Foose
Kaiser Regional Laboratories
Health Environmental Safety Office
11668 Sherman Way
North Hollywood, CA 91605

RE: REQUESTED DOCUMENT

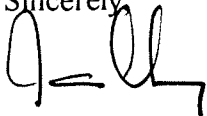
Dear Mr. Foose:

Per our agreement, one (1) copy is enclosed for the below referenced document:

RESULTS OF GROUNDWATER MONITORING
THIRD AND FOURTH QUARTERS 1994
AlliedSignal AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA
VOLUME I
dated August 17, 1995
Prepared by SECOR International Incorporated
Job Number: A0057-001/ASN40

If you have any questions or comments, please call me at (310) 512-2296

Sincerely,



James C. Long
Program Manager
Environmental Remediation
Facility Operations

(1) Enclosure

cc: K. Berke, AlliedSignal Automotive
B. Dehghi, Merit Services
J. Lambert, Kaiser Permanente
J. Stubbs, AES
A. Zimmerman, Kaiser Permanente

003564



AlliedSignal Inc.
Aerospace Equipment Systems
2525 W. 190th Street
Torrance, CA 90504-6099

(310) 528-9500
(310) 512-2221 Fax

September 7, 1995

Mr. Barry Foose
Kaiser Regional Laboratories
Health Environmental Safety Office
11668 Sherman Way
North Hollywood, CA 91605

RE: REQUESTED DOCUMENT

Dear Mr. Foose:

Per our agreement, one (1) copy is enclosed for the below referenced document:

RESULTS OF GROUNDWATER MONITORING
THIRD AND FOURTH QUARTERS 1994

AlliedSignal AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA

VOLUME I

dated August 17, 1995

Prepared by SECOR International Incorporated
Job Number: A0057-001/ASN40

If you have any questions or comments, please call me at (310) 512-2296

Sincerely,

James C. Long
Program Manager
Environmental Remediation
Facility Operations

(1) Enclosure

cc: K. Berke, AlliedSignal Automotive
B. Dehghi, Merit Services
J. Lambert, Kaiser Permanente
J. Stubbs, AES
A. Zimmerman, Kaiser Permanente

003565

1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the third quarter of 1994 was conducted at the AlliedSignal Aerospace property in North Hollywood, California on August 15-16 and September 7-8, 1994, and groundwater monitoring for the fourth quarter of 1994 was conducted on November 22 and December 8-13, 1994. The groundwater monitoring was conducted in accordance with the California Regional Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. Six on-site groundwater monitoring wells (GW-1 through GW-6) and four off-site groundwater monitoring wells (GW-7 through GW-10) were sampled during the August/September 1994 groundwater monitoring event. Nine groundwater monitoring wells (GW-2 through GW-10) were sampled during the November/December groundwater monitoring event.

The groundwater level measurements obtained on August 15, 1994 indicate that the instantaneous groundwater flow direction was southerly beneath the eastern portion of the Site and southwesterly beneath the central and western portions of the Site and the Kaiser property. The groundwater level measurements obtained on September 7, 1994 indicate that the instantaneous groundwater flow direction was southwesterly beneath the Site and the Kaiser property. Based on groundwater level measurements obtained on November 21, 1994, the instantaneous groundwater flow direction was westerly beneath the Site and the Kaiser property. The groundwater level measurements obtained on December 8, 1994 indicate that the instantaneous groundwater flow direction was northwesterly beneath the Site and the Kaiser property. Determination of an average groundwater flow direction based on the groundwater contours in a transient system such as the one present beneath the Site is questionable.

Nitrate was detected in the groundwater samples collected from all the groundwater monitoring wells at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL) during the August 1994 groundwater sampling event and in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3, and GW-5 through GW-10 during the December 1994 groundwater sampling episode. Although VOC concentrations in groundwater monitoring well GW-10 historically correlated with those of groundwater monitoring well GW-7, during August and September 1994, VOC concentrations in groundwater monitoring well GW-7 did not correlate with those of groundwater monitoring well GW-10. On November 22, 1994, during routine maintenance of groundwater monitoring wells, the bladder pump of groundwater monitoring well GW-7 was removed from the well and it was observed

that the bladder was ruptured. This was consistent with the low flow rate observed during purging of the groundwater monitoring well GW-7 during the August and September 1994 groundwater sampling episodes. For this reason, the VOC test results of the groundwater samples collected from groundwater monitoring well GW-7 for August and September 1994 are not valid. A comparison of historic test results of groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 indicate that VOC results of groundwater samples collected from groundwater monitoring well GW-7 may not be valid since March 1994.

Trichloroethene (TCE) was detected at concentrations above the MCL in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-5 and GW-7 through GW-10 during the August and September 1994 groundwater sampling events, in groundwater monitoring well GW-2 only during the November 1994 groundwater sampling event, and in groundwater monitoring wells GW-2 through GW-4 and GW-7 through GW-10 during the December 1994 groundwater sampling event. Only the Tetrachloroethene (PCE) concentration detected in the groundwater sample collected from groundwater monitoring well GW-9 during the August 1994 groundwater sampling event was above the MCL. The Carbon Tetrachloride (CT) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-2, GW-4, GW-5 and GW-8 (August 1994), groundwater monitoring wells GW-2, GW-5, GW-8, and GW-9 (September 1994), groundwater monitoring well GW-2 (November 1994), and groundwater monitoring wells GW-2, GW-7, and GW-10 (December 1994) were above the MCL. The cis-1,2-Dichloroethene (cis-1,2-DCE) concentrations detected in groundwater samples collected from groundwater monitoring wells GW-1 and GW-10 (August 1994), groundwater monitoring wells GW-1, GW-3, and GW-10 (September 1994), and groundwater monitoring wells GW-7 and GW-10 (December 1994) were above the MCL. The 1,1-Dichloroethene (1,1-DCE) concentrations detected in groundwater samples collected from groundwater monitoring well GW-3 (August 1994), groundwater monitoring wells GW-2, GW-3, and GW-4 (September 1994), and groundwater well GW-7 (December 1994) were above the MCL. The concentration of 1,1-Dichloroethane (1,1-DCA) detected in the groundwater sample obtained from groundwater monitoring well GW-3 during the September 7-8, 1994 groundwater sampling event was above the MCL. Groundwater samples collected from the ten groundwater monitoring wells sampled during the August 15-16, 1994, September 7-8, 1994 and the November 22, 1994 groundwater monitoring episodes and the nine groundwater monitoring wells sampled during the December 8-13, 1994 groundwater sampling event did not contain other VOCs at concentrations at or above their respective MCLs.

Several VOCs, including TCE, were detected in the equipment blank sample collected during the August and December 1994 groundwater sampling episodes. In addition, TCE was detected in the trip blank samples provided by the laboratory for the August 1994 groundwater monitoring event. Several other chemical compounds including 1,1,2-Trichloroethane (1,1,2-TCA), Naphthalene and 1,1,2,2-Tetrachloroethane (1,1,2,2-PCA), which were detected in the method blank, were also detected in the equipment blank samples. Since VOC concentrations of groundwater samples

collected from groundwater monitoring well GW-7 were not correlated with those of groundwater monitoring well GW-10 in the August 1994 groundwater sampling episode, groundwater samples were collected from groundwater monitoring wells GW-1 through GW-10 on September 7-8, 1994 and were analyzed for VOCs. During the December 1994 groundwater sampling episode, the sample bottles for the equipment blank samples, which were supplied by BCA, were filled with Arrowhead™ deionized water using a submersible pump. It appears likely that the source of the TCE and other VOCs detected in the equipment blank sample collected during the December, 1994 groundwater sampling event is either the bottled Arrowhead™ deionized water or the tubing connected to the submersible pump.

During the last six groundwater sampling events, concentrations of TCE in groundwater generally increased from November 1993 to February 1994, but subsequently decreased in several of the groundwater monitoring wells between February/March 1994 and May 1994. TCE concentrations again increased in all the groundwater monitoring wells between May 1994 and August/September 1994 and then decreased in groundwater monitoring wells GW-2 through GW-10 between August/September 1994 and November/December 1994. Groundwater monitoring well GW-1 was damaged by the treatment contractor during the on-site remediation of shallow soil impacted by Total Petroleum Hydrocarbons (TPH). Subsequently, no groundwater samples were collected from this monitoring well during the December 1994 groundwater monitoring episode. For example, the TCE concentrations detected in groundwater monitoring wells GW-1, GW-2, GW-4 and GW-7 through GW-10 increased between one and two orders of magnitude from the November 1993 to the February 1994 groundwater sampling episode, whereas the TCE concentrations in groundwater monitoring wells GW-3, GW-5 and GW-6 remained consistent during this period. However, the TCE concentrations detected in all ten groundwater monitoring wells decreased as much as two orders of magnitude from the February/March 1994 groundwater sampling episode to the May 1994 groundwater sampling event. The concentrations of TCE detected in all ten groundwater monitoring wells increased as much as three orders of magnitude from the May 1994 groundwater monitoring event to the August/September 1994 groundwater sampling episode. In addition, the concentrations of TCE detected in groundwater monitoring wells decreased up to two orders of magnitude from the August/September 1994 groundwater monitoring event to the November/December 1994 groundwater sampling episode. An off-site source together with pumping of the production wells in the North Hollywood and Rinaldi-Toluca well fields likely accounts for the fluctuation in TCE concentrations detected in groundwater monitoring wells at the Site.

7.0 DISCUSSION

Based on groundwater level measurements obtained between July 19 and November 21, 1994, groundwater elevations dropped between 20.69 feet (groundwater monitoring well GW-5) and 26.25 feet (groundwater monitoring well GW-9) beneath the Site. Between November 21 and December 8, 1994, groundwater elevations rose between 0.82 feet (groundwater monitoring well GW-6) and 3.29 feet (groundwater monitoring well GW-9) feet beneath the Site. Based on the groundwater level measurements obtained on July 19, 1994, the instantaneous groundwater flow direction was southeasterly beneath the Site and the Kaiser property. The groundwater level measurements collected on August 15 and October 11, 1994 indicated that the instantaneous groundwater flow direction was southerly beneath the eastern portion of the Site and southwesterly beneath the central and western portions of the Site and the Kaiser property. Based on the groundwater level measurements obtained on September 7, 1994, the instantaneous groundwater flow direction was southwesterly beneath the Site and the Kaiser property. The groundwater level measurements collected on November 21, 1994 indicated that the instantaneous groundwater flow direction was westerly and the groundwater level measurements obtained on December 8, 1994, indicated the instantaneous groundwater flow direction was northwesterly beneath the Site and the Kaiser property. Instantaneous groundwater flow beneath the Site is significantly impacted by pumping of aeration wells and supply wells located within the Rinaldi-Toluca and North Hollywood well fields.

TCE was detected at concentrations greater than the MCL in the groundwater samples collected from groundwater monitoring wells GW-1 through GW-5 and GW-7 through GW-10 during the August 15-16 and September 7-8, 1994 groundwater sampling events, groundwater monitoring well GW-2 during the November 22, 1994 groundwater sampling event, and groundwater monitoring wells GW-2 through GW-4 and GW-7 through GW-10 during the December 8-13, 1994 groundwater sampling event. Historically, VOC concentration of groundwater samples collected from groundwater monitoring wells GW-7 and GW-10 correlated. During a routine maintenance operation of groundwater monitoring wells on November 22, 1994, the bladder of the dedicated bladder pump in groundwater monitoring well GW-7 was observed to be ruptured. Additionally, the purging flow rate of groundwater monitoring well GW-7 was abnormally low. Consequently, the VOC concentration of groundwater samples collected from groundwater monitoring well GW-7 since March 1994 should be considered underestimated and invalid.

The PCE concentration detected in the groundwater samples collected during the August 15-16, 1994 groundwater sampling event from groundwater monitoring well GW-9 was above the MCL. The CT concentrations detected in the groundwater samples collected from groundwater monitoring wells GW-2, GW-4, GW-5 and GW-8 during the August 15-16, 1994 groundwater sampling event, groundwater monitoring wells GW-2, GW-5, GW-8, and GW-9 during the September 7-8, 1994

groundwater sampling event, groundwater monitoring well GW-2 during the November 22, 1994, and groundwater monitoring wells GW-2, GW-7, and GW-10 during the December 8-13, 1994 groundwater sampling event were above the MCL.

The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from groundwater monitoring wells GW-1 and GW-10 during the August 15-16, 1994 groundwater sampling event, groundwater monitoring wells GW-1, GW-3, and GW-10 during the September 7-8, 1994 groundwater sampling event, and groundwater monitoring wells GW-7 and GW-10 during the December 8-13, 1994 groundwater sampling event were above the MCL. The concentration of 1,1-DCE detected in the groundwater sample collected from groundwater monitoring well GW-3 (August 15-16, 1994 groundwater sampling event), groundwater monitoring wells GW-2, GW-3, and GW-4 (September 7-8, 1994 groundwater sampling event) and groundwater monitoring well GW-7 (December 8-13, 1994 groundwater sampling event) was above the MCL. The concentration of 1,1-DCA detected in the groundwater sample obtained from groundwater monitoring well GW-3 during the September 7-8, 1994 groundwater sampling event was above the MCL. All other VOCs detected in the groundwater samples collected from the ten groundwater monitoring wells sampled during the August 15-16 and September 7-8, 1994 groundwater sampling events, and the nine groundwater monitoring wells sampled during the December 8-13, 1994 groundwater sampling event were present at concentrations below their respective MCLs.

Nitrate was detected at concentrations above the MCL in groundwater samples collected from all ten groundwater monitoring wells during the August 15-16, 1994 groundwater sampling episode, and in the groundwater samples collected from groundwater monitoring wells GW-2, GW-3, and GW-5 through GW-10 during the December 8-13, 1994 groundwater sampling episode. The turbidity levels were above the secondary MCL in the groundwater sample collected from groundwater monitoring well GW-4 during the August 15-16, 1994 groundwater sampling event, and in the groundwater samples collected from groundwater monitoring wells GW-2 through GW-4 and GW-8 through GW-10 during the December 8-13, 1994 groundwater sampling event. No other inorganic constituents were detected above the primary or secondary MCLs during the August 15-16, or December 8-13, 1994 groundwater sampling episodes.

During the August 15-16, 1994 groundwater sampling episode, several VOCs, including TCE, were detected in the field/equipment blank sample. In addition, TCE was detected in the trip blank sample provided by BCA for the August 15-16, 1994 groundwater monitoring event. The sample bottles for the field/equipment blank samples, which were supplied by BCA, were filled with laboratory grade water provided by BCA. The presence of TCE at concentrations exceeding the MCL in equipment blank samples raises questions about the validity of the corresponding reported TCE concentrations. Taking into account the dilution factors, the reported TCE concentrations in diluted groundwater samples may be significantly exaggerated. Because the VOC concentrations in groundwater monitoring wells GW-7 and GW-10 did not correlate, groundwater samples were

collected from groundwater monitoring wells GW-1 through GW-10 on September 8, 1994, and were analyzed for VOCs.

Several VOCs, including TCE, were detected in the equipment blank sample collected during the December 8-13, 1994 groundwater sampling episode. The sample bottles for the field/equipment blank samples, which were supplied by BCA, were filled with Arrowhead™ distilled water using a submersible pump. Detection of TCE in the equipment blank sample raises concerns that the reported TCE concentrations in diluted groundwater samples may be exaggerated.

In general, the concentrations of VOCs detected in groundwater samples from all ten groundwater monitoring wells increased from the May 1994 groundwater sampling event to the August/September 1994 groundwater sampling episode. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-1 through GW-10 increased from 3.5 µg/l, 9.6 µg/l, 6.0 µg/l, 0.63 µg/l, 0.77 µg/l, 0.95 µg/l, 0.36 µg/l, 1.2 µg/l, 3.4 µg/l and 12 µg/l, respectively, during the May 1994 groundwater sampling event to 1,800 µg/l, 830 µg/l, 1,200 µg/l, 130 µg/l, 6.4 µg/l, 1.5 µg/l, 22 µg/l, 28 µg/l, 110 µg/l and 9,000 µg/l, respectively, during the August 1994 groundwater sampling event and 6,400 µg/l, 810 µg/l, 4,300 µg/l, 100 µg/l, 6.0 µg/l, 1.1 µg/l, 48 µg/l, 32 µg/l, 75 µg/l and 4,700 µg/l during the September 1994 groundwater monitoring episode.

Between the August/September 1994 and the December 1994 groundwater sampling episodes, the concentrations of VOCs decreased in the groundwater samples collected. The concentrations of TCE detected in groundwater samples collected from groundwater monitoring wells GW-2 through GW-6 and GW-8 through GW-10 decreased from 810 µg/l, 4,300 µg/l, 100 µg/l, 6.0 µg/l, 1.1 µg/l, 32 µg/l, 75 µg/l and 4,700 µg/l, respectively, during the September 1994 groundwater sampling event to 13 µg/l, 36 µg/l, 12 µg/l, 1.6 µg/l, 0.7 µg/l, 8.6 µg/l, 9.4 µg/l and 360 µg/l, respectively, during the December 1994 groundwater monitoring episode, whereas the TCE concentration increased in the groundwater samples collected from groundwater monitoring well GW-7 from 48 µg/l to 440 µg/l over the same period. However, the VOC concentration of groundwater samples collected from groundwater monitoring well GW-7 during August and September 1994 groundwater sampling episodes are underestimated because of the ruptured bladder of its dedicated bladder pump. The pumping of the production wells in the Tujunga and Rinaldi-Toluca well fields together with an off-site source likely accounts for the fluctuation in TCE concentrations detected in groundwater samples collected from certain groundwater monitoring wells at the Site.

APPENDIX A
QC SUMMARY

: ORDER PLACED FOR CLIENT: SEACOR 9311378 :
 : BC ANALYTICAL : GLEN LAB : 13:00:07 15 DEC 1993 - P. 1 :
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ES...	SAMPLE DESCRIPTION..	DETERM.....	DATE....	METHOD.....	EQUIP.	BATCH..	ID.NO
			ANALYZED				
9311378*1	GW-2	ANIONS,CL	12.02.93	300.0	533-23	9328	7725
		ANIONS,SO4	12.02.93	300.0	533-23	9328	7725
		ANIONS,NO3	12.02.93	300.0	533-23	9328	7725
		NO2.IC	12.01.93	300.0	533-23	9328	7725
		NH3-N	12.03.93	350.1	533-20	93202	7325
		TURB	12.02.93	180.1	533-10	93163	
		TDS	12.13.93	160.1		93114	
		ALK	12.06.93	310.1	533-16	9353	8106
		CA	12.10.93	6010	535-02	931724	7725
		MG	12.10.93	6010	535-02	931724	7725
		K	12.10.93	6010	535-02	931724	7725
		NA	12.10.93	6010	535-02	931724	7725
		DIG,AQ.HCL	12.09.93	3010		931724	7620
		FUEL.TOT	12.07.93	8015M	536-25	93129	8042
		VOA.524.2	12.03.93	524.2	537-03	93815	8444
9311378*2	GW-3	ANIONS,CL	12.02.93	300.0	533-23	9328	7725
		ANIONS,SO4	12.02.93	300.0	533-23	9328	7725
		ANIONS,NO3	12.02.93	300.0	533-23	9328	7725
		NO2.IC	12.01.93	300.0	533-23	9328	7725
		NH3-N	12.03.93	350.1	533-20	93202	7325
		TURB	12.02.93	180.1	533-10	93163	
		TDS	12.13.93	160.1		93114	
		ALK	12.06.93	310.1	533-16	9353	8106
		CA	12.10.93	6010	535-02	931724	7725
		MG	12.10.93	6010	535-02	931724	7725
		K	12.10.93	6010	535-02	931724	7725
		NA	12.10.93	6010	535-02	931724	7725
		DIG,AQ.HCL	12.09.93	3010		931724	7620
		FUEL.TOT	12.07.93	8015M	536-25	93129	8042
		VOA.524.2	12.06.93	524.2	537-03	93816	8444
9311378*3	GW-4	ANIONS,CL	12.02.93	300.0	533-23	9328	7725
		ANIONS,SO4	12.02.93	300.0	533-23	9328	7725
		ANIONS,NO3	12.02.93	300.0	533-23	9328	7725
		NO2.IC	12.01.93	300.0	533-23	9328	7725
		NH3-N	12.03.93	350.1	533-20	93202	7325
		TURB	12.02.93	180.1	533-10	93163	
		TDS	12.13.93	160.1		93114	
		ALK	12.06.93	310.1	533-16	9353	8106
		CA	12.10.93	6010	535-02	931724	7725
		MG	12.10.93	6010	535-02	931724	7725
		K	12.10.93	6010	535-02	931724	7725
		NA	12.10.93	6010	535-02	931724	7725
		DIG,AQ.HCL	12.09.93	3010		931724	7620
		FUEL.TOT	12.07.93	8015M	536-25	93129	8042

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of analyst.

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: ORDER PLACED FOR CLIENT: SEACOR 9311378 :
: BC ANALYTICAL : GLEN LAB : 13:00:08 15 DEC 1993 - P. 3 :
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LES...	SAMPLE DESCRIPTION..	DETERM.....	DATE....	METHOD.....	EQUIP.	BATCH..	ID.NO
			ANALYZED				
		FUEL.TOT	12.07.93	8015M	536-25	93129	8042
		VOA.524.2	12.06.93	524.2	537-03	93816	8444
9311378*7	Trip Blank	FUEL.TOT	12.07.93	8015M	536-25	93129	8042
		VOA.524.2	12.06.93	524.2	537-03	93816	8444

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of analyst.

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ORDER QC REPORT FOR G9311378

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DATE REPORTED : 12/15/93

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1. Anions by IC (C1-3	12.02.93	9328	9.71	10.0	mg/L	97
2. Anions by IC (S04-	12.02.93	9328	24.2	25.0	mg/L	97
3. Nitrate as NO3 (30	12.02.93	9328	9.83	10.0	mg/L	98
4. Nitrite (by IC)	12.01.93	9328	2.38	2.50	mg/L	95
5. Ammonia (350.1)	12.03.93	93202	4.99	5.00	mg/L	100
6. Turbidity (180.1)	12.02.93	93163	1.62	1.56	NTU	104
7. Turbidity (180.1)	12.02.93	93163	16.5	16.4	NTU	101
8. Turbidity (180.1)	12.02.93	93163	190	191	NTU	99
9. Filterable Residue	12.13.93	93114	1010	1000	mg/L	101
10. Filterable Residue	12.13.93	93114	980	1000	mg/L	98
11. Alkalinity (310.1)	C3112319*1					
Bicarbonate Alk (as CaCO3)	12.06.93	9353	605	605	mg/L	100
Total Alkalinity (as CaCO3)	12.06.93	9353	605	605	mg/L	100
12. Calcium (EPA 6010)	C3102627*1					
Date Analyzed	12.10.93	931724	12/10/93	12/10/93	Date	N/A
Calcium (6010)	12.10.93	931724	48.1	50.0	mg/L	96
Magnesium (EPA 6010)	C3102620*1					
Date Analyzed	12.10.93	931724	12/10/93	12/10/93	Date	N/A
Magnesium (6010)	12.10.93	931724	46.3	50.0	mg/L	93
14. Potassium (EPA 6010)	C3102617*1					
Date Analyzed	12.10.93	931724	12/10/93	12/10/93	Date	N/A
Potassium (6010)	12.10.93	931724	45.5	50.0	mg/L	91
15. Sodium (EPA 6010)	C3102616*1					
Date Analyzed	12.10.93	931724	12/10/93	12/10/93	Date	N/A
Sodium (6010)	12.10.93	931724	48.9	50.0	mg/L	98
16. Digestion (3010)	C312769*1					
17. SW3010/ICP Digest	C312771*1					
18. TPH (8015M)	C312762*1					
Date Analyzed	12.08.93	93129	12/08/93	12/08/93	Date	N/A
Date Extracted	12.08.93	93129	12/07/93	12/07/93	Date	N/A
TPH (total)	12.08.93	93129	28.4	30.0	mg/L	95
19. TPH (8015M)	C312763*1					
Date Analyzed	12.08.93	93129	12/08/93	12/08/93	Date	N/A
Date Extracted	12.08.93	93129	12/07/93	12/07/93	Date	N/A
TPH (total)	12.08.93	93129	28.1	30.0	mg/L	94
20. E524.2/VOC	C312376*1					
Date Analyzed	12.03.93	93815	12/03/93	12/03/93	Date	N/A
1,1,1,2-Tetrachloroethane	12.03.93	93815	3.37	4.00	ug/L	84
1,1,1-Trichloroethane	12.03.93	93815	3.66	4.00	ug/L	91
1,1,2,2-Tetrachloroethane	12.03.93	93815	3.82	4.00	ug/L	95
1,2-Trichloroethane	12.03.93	93815	3.25	4.00	ug/L	81
1,1-Dichloroethane	12.03.93	93815	3.54	4.00	ug/L	88
1,1-Dichloroethene	12.03.93	93815	3.57	4.00	ug/L	89
1,1-Dichloropropene	12.03.93	93815	3.66	4.00	ug/L	91
1,2,3-Trichlorobenzene	12.03.93	93815	3.92	4.00	ug/L	98

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FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1,2,3-Trichloropropane	12.03.93	93815	3.20	4.00	ug/L	80
1,2,4-Trichlorobenzene	12.03.93	93815	3.97	4.00	ug/L	99
1,2,4-Trimethylbenzene	12.03.93	93815	3.86	4.00	ug/L	96
1,2-Dibromo-3-chloropropane	12.03.93	93815	3.44	4.00	ug/L	86
1,2-Dibromoethane	12.03.93	93815	3.43	4.00	ug/L	86
1,2-Dichloroethane	12.03.93	93815	3.23	4.00	ug/L	81
1,2-Dichlorobenzene	12.03.93	93815	4.07	4.00	ug/L	102
1,2-Dichloropropane	12.03.93	93815	3.51	4.00	ug/L	88
1,3,5-Trimethylbenzene	12.03.93	93815	3.92	4.00	ug/L	98
1,3-Dichlorobenzene	12.03.93	93815	4.22	4.00	ug/L	105
1,3-Dichloropropane	12.03.93	93815	3.23	4.00	ug/L	81
1,4-Dichlorobenzene	12.03.93	93815	4.15	4.00	ug/L	104
2,2-Dichloropropane	12.03.93	93815	3.92	4.00	ug/L	98
2-Chlorotoluene	12.03.93	93815	3.80	4.00	ug/L	95
4-Chlorotoluene	12.03.93	93815	4.50	4.00	ug/L	112
Bromobenzene	12.03.93	93815	4.35	4.00	ug/L	109
Bromochloromethane	12.03.93	93815	3.59	4.00	ug/L	90
Bromodichloromethane	12.03.93	93815	3.25	4.00	ug/L	81
Bromomethane	12.03.93	93815	3.55	4.00	ug/L	89
Benzene	12.03.93	93815	3.53	4.00	ug/L	88
Bromoform	12.03.93	93815	3.00	4.00	ug/L	75
Chlorobenzene	12.03.93	93815	3.41	4.00	ug/L	85
Carbon Tetrachloride	12.03.93	93815	3.69	4.00	ug/L	92
Chloroethane	12.03.93	93815	3.20	4.00	ug/L	80
Chloroform	12.03.93	93815	3.62	4.00	ug/L	90
Chloromethane	12.03.93	93815	2.90	4.00	ug/L	72
Dibromochloromethane	12.03.93	93815	3.99	4.00	ug/L	100
Dibromomethane	12.03.93	93815	3.44	4.00	ug/L	86
Ethylbenzene	12.03.93	93815	3.58	4.00	ug/L	89
Hexachlorobutadiene	12.03.93	93815	4.34	4.00	ug/L	108
Isopropylbenzene	12.03.93	93815	4.29	4.00	ug/L	107
Methylene chloride	12.03.93	93815	3.34	4.00	ug/L	83
N-Butylbenzene	12.03.93	93815	4.40	4.00	ug/L	110
N-Propylbenzene	12.03.93	93815	4.04	4.00	ug/L	101
Naphthalene	12.03.93	93815	3.25	4.00	ug/L	81
Styrene	12.03.93	93815	3.38	4.00	ug/L	84
Trichloroethene	12.03.93	93815	3.62	4.00	ug/L	90
Trichlorofluoromethane	12.03.93	93815	4.07	4.00	ug/L	102
Toluene	12.03.93	93815	3.58	4.00	ug/L	89
Tetrachloroethene	12.03.93	93815	3.87	4.00	ug/L	97
Vinyl chloride	12.03.93	93815	3.11	4.00	ug/L	78
trans-1,2-Dichloroethene	12.03.93	93815	3.54	4.00	ug/L	88
cis-1,3-Dichloropropene	12.03.93	93815	1.60	2.00	ug/L	80
m- and p-Xylene Isomers	12.03.93	93815	6.96	8.00	ug/L	87
o-Xylene	12.03.93	93815	3.63	4.00	ug/L	91

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DATE REPORTED : 12/15/93

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
p-Isopropyl toluene	12.03.93	93815	4.13	4.00	ug/L	103
sec-Butylbenzene	12.03.93	93815	4.40	4.00	ug/L	110
trans-1,2-Dichloroethene	12.03.93	93815	3.64	4.00	ug/L	91
trans-1,3-Dichloropropene	12.03.93	93815	1.51	2.00	ug/L	75
tert-Butylbenzene	12.03.93	93815	4.14	4.00	ug/L	103
21. E524.2/VOC	C312485*1					
Date Analyzed	12.06.93	93816	12/06/93	12/06/93	Date	N/A
1,1,1,2-Tetrachloroethane	12.06.93	93816	3.52	4.00	ug/L	88
1,1,1-Trichloroethane	12.06.93	93816	3.92	4.00	ug/L	98
1,1,2,2-Tetrachloroethane	12.06.93	93816	4.05	4.00	ug/L	101
1,1,2-Trichloroethane	12.06.93	93816	3.58	4.00	ug/L	89
1,1-Dichloroethane	12.06.93	93816	3.65	4.00	ug/L	91
1,1-Dichloroethene	12.06.93	93816	3.85	4.00	ug/L	96
1,1-Dichloropropene	12.06.93	93816	3.86	4.00	ug/L	96
1,2,3-Trichlorobenzene	12.06.93	93816	4.19	4.00	ug/L	105
1,2,3-Trichloropropane	12.06.93	93816	3.76	4.00	ug/L	94
1,2,4-Trichlorobenzene	12.06.93	93816	4.17	4.00	ug/L	104
1,2,4-Trimethylbenzene	12.06.93	93816	4.01	4.00	ug/L	100
1,2-Dibromo-3-chloropropane	12.06.93	93816	3.79	4.00	ug/L	95
1,2-Dibromoethane	12.06.93	93816	3.74	4.00	ug/L	93
1,2-Dichloroethane	12.06.93	93816	3.55	4.00	ug/L	89
1,2-Dichlorobenzene	12.06.93	93816	4.31	4.00	ug/L	108
1,2-Dichloropropane	12.06.93	93816	3.69	4.00	ug/L	92
1,3,5-Trimethylbenzene	12.06.93	93816	4.03	4.00	ug/L	101
1,3-Dichlorobenzene	12.06.93	93816	4.38	4.00	ug/L	109
1,3-Dichloropropane	12.06.93	93816	3.60	4.00	ug/L	90
1,4-Dichlorobenzene	12.06.93	93816	4.29	4.00	ug/L	107
2,2-Dichloropropane	12.06.93	93816	4.11	4.00	ug/L	103
2-Chlorotoluene	12.06.93	93816	4.14	4.00	ug/L	103
4-Chlorotoluene	12.06.93	93816	4.45	4.00	ug/L	111
Bromobenzene	12.06.93	93816	4.56	4.00	ug/L	114
Bromochloromethane	12.06.93	93816	3.86	4.00	ug/L	96
Bromodichloromethane	12.06.93	93816	3.37	4.00	ug/L	84
Bromomethane	12.06.93	93816	3.57	4.00	ug/L	89
Benzene	12.06.93	93816	3.70	4.00	ug/L	92
Bromoform	12.06.93	93816	3.25	4.00	ug/L	81
Chlorobenzene	12.06.93	93816	3.65	4.00	ug/L	91
Carbon Tetrachloride	12.06.93	93816	3.98	4.00	ug/L	99
Chloroethane	12.06.93	93816	3.20	4.00	ug/L	80
Chloroform	12.06.93	93816	3.69	4.00	ug/L	92
Chloromethane	12.06.93	93816	2.68	4.00	ug/L	67
Dibromochloromethane	12.06.93	93816	3.27	4.00	ug/L	82
Dibromomethane	12.06.93	93816	3.68	4.00	ug/L	92
Ethylbenzene	12.06.93	93816	3.80	4.00	ug/L	95
Hexachlorobutadiene	12.06.93	93816	4.56	4.00	ug/L	114

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LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Isopropylbenzene	12.06.93	93816	4.49	4.00	ug/L	112
Methylene chloride	12.06.93	93816	3.52	4.00	ug/L	88
N-Butylbenzene	12.06.93	93816	4.50	4.00	ug/L	112
N-Propylbenzene	12.06.93	93816	4.19	4.00	ug/L	105
Naphthalene	12.06.93	93816	3.37	4.00	ug/L	84
Styrene	12.06.93	93816	3.53	4.00	ug/L	88
Trichloroethene	12.06.93	93816	3.81	4.00	ug/L	95
Trichlorofluoromethane	12.06.93	93816	4.17	4.00	ug/L	104
Toluene	12.06.93	93816	3.71	4.00	ug/L	93
Tetrachloroethene	12.06.93	93816	4.08	4.00	ug/L	102
Vinyl chloride	12.06.93	93816	3.15	4.00	ug/L	79
cis-1,2-Dichloroethene	12.06.93	93816	3.68	4.00	ug/L	92
cis-1,3-Dichloropropene	12.06.93	93816	1.72	2.00	ug/L	86
m- and p-Xylene Isomers	12.06.93	93816	7.16	8.00	ug/L	89
o-Xylene	12.06.93	93816	3.83	4.00	ug/L	96
isopropyl toluene	12.06.93	93816	4.29	4.00	ug/L	107
sec-Butylbenzene	12.06.93	93816	4.57	4.00	ug/L	114
trans-1,2-Dichloroethene	12.06.93	93816	3.73	4.00	ug/L	93
trans-1,3-Dichloropropene	12.06.93	93816	1.60	2.00	ug/L	80
tert-Butylbenzene	12.06.93	93816	4.31	4.00	ug/L	108

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ADDITIONAL LCS PRECISION (DUPLICATES)
FOR SAMPLES ON THIS ORDER

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	LC1 RESULT	LC2 RESULT	UNIT	RELATIVE % DIFF
1. Filterable Residue		12.13.93	93114	1010	980	mg/L	3
2. SW3010/ICP Digest		12.09.93	931724	12/08/93	12/08/93	mg/L	N/A
3. TPH (8015M)							
Date Analyzed		12.08.93	93129	12/08/93	12/08/93	Date	N/A
Date Extracted		12.08.93	93129	12/07/93	12/07/93	Date	N/A
TPH (total)		12.08.93	93129	28.4	28.1	mg/L	1

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MATRIX QC PRECISION (DUPLICATES)
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PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	R1 RESULT	R2 RESULT	UNIT	RELATIVE % DIFF
1. Turbidity (180.1)	9311378*1	12.02.93	93163	4.4	4.0	NTU	9

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MATRIX QC PRECISION (DUPLICATE SPIKES)
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PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS RESULT	MSD RESULT	UNIT	RELATIVE % DIFF
1. Anions by IC (Cl-3	9311378*1	12.02.93	9328	41.8	41.1	mg/L	2
2. Anions by IC (SO4-	9311378*1	12.02.93	9328	105	105	mg/L	0
3. Nitrate as NO3 (30	9311378*1	12.02.93	9328	98.0	98.2	mg/L	0
4. Nitrite (by IC)	9311378*1	12.01.93	9328	4.96	5.30	mg/L	7
5. Ammonia (350.1)	9311378*1	12.03.93	93202	0.98	1.05	mg/L	7
5. Filterable Residue	9311378*1	12.13.93	93114	1490	1480	mg/L	1
7. Alkalinity (310.1)	9311378*1						
Bicarbonate Alk (as CaCO3)		12.06.93	9353	724	726	mg/L	0
Total Alkalinity (as CaCO3)		12.06.93	9353	724	726	mg/L	0
8. Calcium (6010)	9311378*1	12.10.93	931724	140	132	mg/L	6
9. Magnesium (6010)	9311378*1	12.10.93	931724	66.0	62.3	mg/L	6
10. Potassium (6010)	9311378*1	12.10.93	931724	13.0	12.3	mg/L	5
11. Sodium (6010)	9311378*1	12.10.93	931724	73.8	69.4	mg/L	6
12. Digestion (3010)	9311378*1	12.09.93	931724	12/08/93	12/08/93	Date	N/A
13. TPH (8015M)	9311378*1						
Date Analyzed		12.07.93	93129	12/07/93	12/07/93	Date	N/A
Date Extracted		12.07.93	93129	12/07/93	12/07/93	Date	N/A
TPH (total)		12.07.93	93129	21.1	22.3	mg/L	5
14. E524.2/VOC	9311378*1						
Date Analyzed		12.03.93	93815	12/03/93	12/03/93	Date	N/A
1,1,1,2-Tetrachloroethane		12.03.93	93815	3.59	3.91	ug/L	8
1,1,1-Trichloroethane		12.03.93	93815	4.24	4.34	ug/L	2
1,1,2,2-Tetrachloroethane		12.03.93	93815	4.15	4.26	ug/L	3
1,1,2-Trichloroethane		12.03.93	93815	3.41	3.66	ug/L	7
1,1-Dichloroethane		12.03.93	93815	3.83	3.94	ug/L	3
1,1-Dichloroethene		12.03.93	93815	3.88	4.01	ug/L	3
1,1-Dichloropropene		12.03.93	93815	3.99	3.96	ug/L	1
1,2,3-Trichlorobenzene		12.03.93	93815	4.27	4.28	ug/L	0
1,2,3-Trichloropropane		12.03.93	93815	3.63	3.61	ug/L	1
1,2,4-Trichlorobenzene		12.03.93	93815	4.35	4.33	ug/L	0
1,2,4-Trimethylbenzene		12.03.93	93815	4.37	4.37	ug/L	0
1,2-Dibromo-3-chloropropane		12.03.93	93815	3.71	3.91	ug/L	5
1,2-Dibromoethane		12.03.93	93815	3.60	3.77	ug/L	5
1,2-Dichloroethane		12.03.93	93815	3.37	3.45	ug/L	2
1,2-Dichlorobenzene		12.03.93	93815	4.44	4.41	ug/L	1
1,2-Dichloropropane		12.03.93	93815	3.62	3.70	ug/L	2
1,3,5-Trimethylbenzene		12.03.93	93815	4.48	4.43	ug/L	1
1,3-Dichlorobenzene		12.03.93	93815	4.64	4.66	ug/L	0
1,3-Dichloropropane		12.03.93	93815	3.45	3.82	ug/L	10
1,4-Dichlorobenzene		12.03.93	93815	4.53	4.56	ug/L	1
1,4-Dichloropropane		12.03.93	93815	4.26	4.30	ug/L	1
o-Chlorotoluene		12.03.93	93815	4.10	4.05	ug/L	1
p-Chlorotoluene		12.03.93	93815	4.85	4.77	ug/L	2
Bromobenzene		12.03.93	93815	4.74	4.78	ug/L	1
Bromochloromethane		12.03.93	93815	3.62	3.89	ug/L	7

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MATRIX QC PRECISION (DUPLICATE SPIKES)
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PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS RESULT	MSD RESULT	UNIT	RELATIVE % DIFF
Bromodichloromethane		12.03.93	93815	3.48	3.83	ug/L	10
Bromomethane		12.03.93	93815	3.78	3.83	ug/L	1
Benzene		12.03.93	93815	3.76	3.87	ug/L	3
Bromoform		12.03.93	93815	3.22	3.47	ug/L	7
Chlorobenzene		12.03.93	93815	3.67	3.94	ug/L	7
Carbon Tetrachloride		12.03.93	93815	4.28	4.20	ug/L	2
Chloroethane		12.03.93	93815	3.24	3.47	ug/L	7
Chloroform		12.03.93	93815	4.06	4.21	ug/L	4
Chloromethane		12.03.93	93815	3.56	3.00	ug/L	17
Dibromochloromethane		12.03.93	93815	3.13	3.43	ug/L	9
Dibromomethane		12.03.93	93815	3.56	3.86	ug/L	8
Ethylbenzene		12.03.93	93815	4.05	4.19	ug/L	3
Hexachlorobutadiene		12.03.93	93815	4.60	4.87	ug/L	6
Isopropylbenzene		12.03.93	93815	4.87	4.82	ug/L	1
Methylene chloride		12.03.93	93815	3.53	3.78	ug/L	7
n-Butylbenzene		12.03.93	93815	5.03	4.91	ug/L	2
Isopropylbenzene		12.03.93	93815	4.58	4.52	ug/L	1
Naphthalene		12.03.93	93815	3.72	3.58	ug/L	4
Styrene		12.03.93	93815	3.56	3.82	ug/L	7
Trichloroethene		12.03.93	93815	30.0	33.9	ug/L	12
Trichlorofluoromethane		12.03.93	93815	4.39	4.26	ug/L	3
Toluene		12.03.93	93815	4.00	4.31	ug/L	7
Tetrachloroethene		12.03.93	93815	5.79	6.25	ug/L	8
Vinyl chloride		12.03.93	93815	3.45	3.34	ug/L	3
cis-1,2-Dichloroethene		12.03.93	93815	3.97	4.15	ug/L	4
cis-1,3-Dichloropropene		12.03.93	93815	1.69	1.83	ug/L	8
m- and p-Xylene Isomers		12.03.93	93815	7.57	8.04	ug/L	6
o-Xylene		12.03.93	93815	3.93	4.16	ug/L	6
p-Isopropyl toluene		12.03.93	93815	4.77	4.66	ug/L	2
sec-Butylbenzene		12.03.93	93815	5.02	4.89	ug/L	3
trans-1,2-Dichloroethene		12.03.93	93815	3.90	3.96	ug/L	1
trans-1,3-Dichloropropene		12.03.93	93815	1.58	1.79	ug/L	12
tert-Butylbenzene		12.03.93	93815	4.71	4.65	ug/L	1
15. E524.2/VOC	9311378*2						
Date Analyzed		12.06.93	93816	12/06/93	12/06/93	Date	N/A
1,1,1,2-Tetrachloroethane		12.06.93	93816	3.60	3.57	ug/L	1
1,1,1-Trichloroethane		12.06.93	93816	4.20	4.43	ug/L	5
1,1,2,2-Tetrachloroethane		12.06.93	93816	3.86	4.11	ug/L	6
1,1,2-Trichloroethane		12.06.93	93816	3.52	3.55	ug/L	1
1,1-Dichloroethane		12.06.93	93816	3.51	3.71	ug/L	5
1,2-Dichloroethane		12.06.93	93816	3.99	4.23	ug/L	6
1,1-Dichloropropene		12.06.93	93816	3.65	3.92	ug/L	7
1,2,3-Trichlorobenzene		12.06.93	93816	3.99	4.28	ug/L	7
1,2,3-Trichloropropane		12.06.93	93816	3.75	3.96	ug/L	5
1,2,4-Trichlorobenzene		12.06.93	93816	4.07	4.27	ug/L	5

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MATRIX QC PRECISION (DUPLICATE SPIKES)
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PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS RESULT	MSD RESULT	UNIT	RELATIVE % DIFF
1,2,4-Trimethylbenzene		12.06.93	93816	3.79	4.09	ug/L	8
1,2-Dibromo-3-chloropropane		12.06.93	93816	3.64	3.90	ug/L	7
1,2-Dibromoethane		12.06.93	93816	3.75	3.67	ug/L	2
1,2-Dichloroethane		12.06.93	93816	3.34	3.42	ug/L	2
1,2-Dichlorobenzene		12.06.93	93816	4.13	4.25	ug/L	3
1,2-Dichloropropane		12.06.93	93816	3.55	3.68	ug/L	4
1,3,5-Trimethylbenzene		12.06.93	93816	3.85	4.11	ug/L	6
1,3-Dichlorobenzene		12.06.93	93816	4.16	4.46	ug/L	7
1,3-Dichloropropane		12.06.93	93816	3.55	3.49	ug/L	2
1,4-Dichlorobenzene		12.06.93	93816	4.14	4.48	ug/L	8
2,2-Dichloropropane		12.06.93	93816	3.92	4.12	ug/L	5
2-Chlorotoluene		12.06.93	93816	3.75	4.13	ug/L	10
4-Chlorotoluene		12.06.93	93816	4.38	4.54	ug/L	4
Bromobenzene		12.06.93	93816	4.33	4.57	ug/L	5
mochloromethane		12.06.93	93816	3.58	3.68	ug/L	3
omodichloromethane		12.06.93	93816	3.49	3.45	ug/L	1
Bromomethane		12.06.93	93816	3.43	3.61	ug/L	5
Benzene		12.06.93	93816	3.48	3.78	ug/L	8
Bromoform		12.06.93	93816	3.39	3.31	ug/L	2
Chlorobenzene		12.06.93	93816	3.64	3.62	ug/L	1
Carbon Tetrachloride		12.06.93	93816	3.96	4.12	ug/L	4
Chloroethane		12.06.93	93816	3.27	3.36	ug/L	3
Chloroform		12.06.93	93816	3.81	3.95	ug/L	4
Chloromethane		12.06.93	93816	2.45	2.58	ug/L	5
Dibromochloromethane		12.06.93	93816	3.36	3.30	ug/L	2
Dibromomethane		12.06.93	93816	3.74	3.72	ug/L	0
Ethylbenzene		12.06.93	93816	3.79	3.82	ug/L	1
Hexachlorobutadiene		12.06.93	93816	4.29	4.62	ug/L	7
Isopropylbenzene		12.06.93	93816	4.14	4.53	ug/L	9
Methylene chloride		12.06.93	93816	3.65	3.65	ug/L	0
N-Butylbenzene		12.06.93	93816	4.23	4.61	ug/L	9
N-Propylbenzene		12.06.93	93816	3.91	4.24	ug/L	8
Naphthalene		12.06.93	93816	3.18	3.33	ug/L	5
Styrene		12.06.93	93816	3.58	3.57	ug/L	0
Trichloroethene		12.06.93	93816	17.4	18.1	ug/L	4
Trichlorofluoromethane		12.06.93	93816	4.25	4.00	ug/L	6
Toluene		12.06.93	93816	3.95	3.93	ug/L	0
Tetrachloroethene		12.06.93	93816	5.59	5.68	ug/L	2
Vinyl chloride		12.06.93	93816	2.96	3.06	ug/L	3
cis-1,2-Dichloroethene		12.06.93	93816	3.51	3.71	ug/L	5
cis-1,3-Dichloropropene		12.06.93	93816	1.72	1.68	ug/L	2
o- and p-Xylene Isomers		12.06.93	93816	7.31	7.29	ug/L	0
o-Xylene		12.06.93	93816	3.85	3.90	ug/L	1
p-Isopropyl toluene		12.06.93	93816	4.02	4.37	ug/L	8
sec-Butylbenzene		12.06.93	93816	4.25	4.60	ug/L	8

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MATRIX QC PRECISION (DUPLICATE SPIKES)
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PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS RESULT	MSD RESULT	UNIT	RELATIVE % DIFF
trans-1,2-Dichloroethene		12.06.93	93816	3.55	3.71	ug/L	4
trans-1,3-Dichloropropene		12.06.93	93816	1.68	1.66	ug/L	1
tert-Butylbenzene		12.06.93	93816	4.03	4.35	ug/L	8

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MATRIX QC ACCURACY (SPIKES)
FOR SAMPLES ON THIS ORDER

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS %	MSD %	TRUE RESULT	UNIT	NC
1. Anions by IC (Cl-3	9311378*1	12.02.93	9328	NC	NC	43.0	mg/L	NC
2. Anions by IC (SO4-	9311378*1	12.02.93	9328	82	82	116	mg/L	
3. Nitrate as NO3 (30	9311378*1	12.02.93	9328	92	93	101	mg/L	
4. Nitrite (by IC)	9311378*1	12.01.93	9328	99	106	5.00	mg/L	
5. Ammonia (350.1)	9311378*1	12.03.93	93202	98	105	1.00	mg/L	
6. Filterable Residue	9311378*1	12.13.93	93114	103	102	1460	mg/L	
7. Alkalinity (310.1)	9311378*1							
Bicarbonate Alk (as CaCO3)		12.06.93	9353	94	94	752	mg/L	
Total Alkalinity (as CaCO3)		12.06.93	9353	94	94	752	mg/L	
8. Calcium (6010)	9311378*1	12.10.93	931724	108	92	136	mg/L	
9. Magnesium (6010)	9311378*1	12.10.93	931724	94	87	69.0	mg/L	
10. Potassium (6010)	9311378*1	12.10.93	931724	97	90	13.3	mg/L	
11. Sodium (6010)	9311378*1	12.10.93	931724	100	91	74.0	mg/L	
12. TPH (8015M)	9311378*1							
TPH (total)		12.07.93	93129	70	74	30.0	mg/L	
13. 524.2/VOC	9311378*1							
1,1,1,2-Tetrachloroethane		12.03.93	93815	90	98	4.00	ug/L	
1,1,1-Trichloroethane		12.03.93	93815	97	99	4.37	ug/L	
1,1,2,2-Tetrachloroethane		12.03.93	93815	104	106	4.00	ug/L	
1,1,2-Trichloroethane		12.03.93	93815	85	91	4.00	ug/L	
1,1-Dichloroethane		12.03.93	93815	96	98	4.00	ug/L	
1,1-Dichloroethene		12.03.93	93815	97	100	4.00	ug/L	
1,1-Dichloropropene		12.03.93	93815	100	99	4.00	ug/L	
1,2,3-Trichlorobenzene		12.03.93	93815	107	107	4.00	ug/L	
1,2,3-Trichloropropane		12.03.93	93815	91	90	4.00	ug/L	
1,2,4-Trichlorobenzene		12.03.93	93815	109	108	4.00	ug/L	
1,2,4-Trimethylbenzene		12.03.93	93815	109	109	4.00	ug/L	
1,2-Dibromo-3-chloropropane		12.03.93	93815	93	98	4.00	ug/L	
1,2-Dibromoethane		12.03.93	93815	90	94	4.00	ug/L	
1,2-Dichloroethane		12.03.93	93815	84	86	4.00	ug/L	
1,2-Dichlorobenzene		12.03.93	93815	111	110	4.00	ug/L	
1,2-Dichloropropane		12.03.93	93815	90	92	4.00	ug/L	
1,3,5-Trimethylbenzene		12.03.93	93815	112	111	4.00	ug/L	
1,3-Dichlorobenzene		12.03.93	93815	116	116	4.00	ug/L	
1,3-Dichloropropane		12.03.93	93815	86	95	4.00	ug/L	
1,4-Dichlorobenzene		12.03.93	93815	113	114	4.00	ug/L	
2,2-Dichloropropane		12.03.93	93815	106	107	4.00	ug/L	
2-Chlorotoluene		12.03.93	93815	102	101	4.00	ug/L	
4-Chlorotoluene		12.03.93	93815	121	119	4.00	ug/L	
Bromobenzene		12.03.93	93815	118	119	4.00	ug/L	
bromochloromethane		12.03.93	93815	90	97	4.00	ug/L	
bromodichloromethane		12.03.93	93815	87	96	4.00	ug/L	
Bromomethane		12.03.93	93815	94	96	4.00	ug/L	
Benzene		12.03.93	93815	94	97	4.00	ug/L	
Bromoform		12.03.93	93815	80	87	4.00	ug/L	

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MATRIX QC ACCURACY (SPIKES)
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PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS %	MSD %	TRUE RESULT	UNIT
Chlorobenzene		12.03.93	93815	92	98	4.00	ug/L
Carbon Tetrachloride		12.03.93	93815	107	105	4.00	ug/L
Chloroethane		12.03.93	93815	81	87	4.00	ug/L
Chloroform		12.03.93	93815	93	97	4.33	ug/L
Chloromethane		12.03.93	93815	89	75	4.00	ug/L
Dibromochloromethane		12.03.93	93815	78	86	4.00	ug/L
Dibromomethane		12.03.93	93815	89	96	4.00	ug/L
Ethylbenzene		12.03.93	93815	101	105	4.00	ug/L
Hexachlorobutadiene		12.03.93	93815	115	122	4.00	ug/L
Isopropylbenzene		12.03.93	93815	122	120	4.00	ug/L
Methylene chloride		12.03.93	93815	88	94	4.00	ug/L
N-Butylbenzene		12.03.93	93815	126	123	4.00	ug/L
N-Propylbenzene		12.03.93	93815	114	113	4.00	ug/L
Naphthalene		12.03.93	93815	93	89	4.00	ug/L
styrene		12.03.93	93815	89	95	4.00	ug/L
1,1-Dichloroethene		12.03.93	93815	NC	NC	32.5	ug/L
1,1,1-Trichlorofluoromethane		12.03.93	93815	110	106	4.00	ug/L
Toluene		12.03.93	93815	100	108	4.00	ug/L
Tetrachloroethene		12.03.93	93815	103	115	5.65	ug/L
Vinyl chloride		12.03.93	93815	86	83	4.00	ug/L
cis-1,2-Dichloroethene		12.03.93	93815	89	94	4.40	ug/L
cis-1,3-Dichloropropene		12.03.93	93815	84	91	2.00	ug/L
m- and p-Xylene Isomers		12.03.93	93815	95	100	8.00	ug/L
o-Xylene		12.03.93	93815	98	104	4.00	ug/L
p-Isopropyl toluene		12.03.93	93815	119	116	4.00	ug/L
sec-Butylbenzene		12.03.93	93815	125	122	4.00	ug/L
trans-1,2-Dichloroethene		12.03.93	93815	97	99	4.00	ug/L
trans-1,3-Dichloropropene		12.03.93	93815	79	89	2.00	ug/L
tert-Butylbenzene		12.03.93	93815	118	116	4.00	ug/L
14. E524.2/VOC	9311378*2						
1,1,1,2-Tetrachloroethane		12.06.93	93816	90	89	4.00	ug/L
1,1,1-Trichloroethane		12.06.93	93816	91	97	4.56	ug/L
1,1,2,2-Tetrachloroethane		12.06.93	93816	96	103	4.00	ug/L
1,1,2-Trichloroethane		12.06.93	93816	88	89	4.00	ug/L
1,1-Dichloroethane		12.06.93	93816	88	93	4.00	ug/L
1,1-Dichloroethene		12.06.93	93816	90	96	4.37	ug/L
1,1-Dichloropropene		12.06.93	93816	91	98	4.00	ug/L
1,2,3-Trichlorobenzene		12.06.93	93816	100	107	4.00	ug/L
1,2,3-Trichloropropane		12.06.93	93816	94	99	4.00	ug/L
1,2,4-Trichlorobenzene		12.06.93	93816	102	107	4.00	ug/L
1,2,4-Trimethylbenzene		12.06.93	93816	95	102	4.00	ug/L
1,2-Dibromo-3-chloropropane		12.06.93	93816	91	97	4.00	ug/L
1,2-Dibromoethane		12.06.93	93816	94	92	4.00	ug/L
1,2-Dichloroethane		12.06.93	93816	83	85	4.00	ug/L
1,2-Dichlorobenzene		12.06.93	93816	103	106	4.00	ug/L

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PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS %	MSD %	TRUE RESULT	UNIT
1,2-Dichloropropane		12.06.93	93816	89	92	4.00	ug/L
1,3,5-Trimethylbenzene		12.06.93	93816	96	103	4.00	ug/L
1,3-Dichlorobenzene		12.06.93	93816	104	111	4.00	ug/L
1,3-Dichloropropane		12.06.93	93816	89	87	4.00	ug/L
1,4-Dichlorobenzene		12.06.93	93816	103	112	4.00	ug/L
2,2-Dichloropropane		12.06.93	93816	98	103	4.00	ug/L
2-Chlorotoluene		12.06.93	93816	94	103	4.00	ug/L
4-Chlorotoluene		12.06.93	93816	109	113	4.00	ug/L
Bromobenzene		12.06.93	93816	108	114	4.00	ug/L
Bromochloromethane		12.06.93	93816	89	92	4.00	ug/L
Bromodichloromethane		12.06.93	93816	87	86	4.00	ug/L
Bromomethane		12.06.93	93816	86	90	4.00	ug/L
Benzene		12.06.93	93816	87	94	4.00	ug/L
Bromoform		12.06.93	93816	85	83	4.00	ug/L
Chlorobenzene		12.06.93	93816	91	90	4.00	ug/L
Carbon Tetrachloride		12.06.93	93816	99	103	4.00	ug/L
Chloroethane		12.06.93	93816	82	84	4.00	ug/L
Chloroform		12.06.93	93816	87	91	4.31	ug/L
Chloromethane		12.06.93	93816	61	64	4.00	ug/L
Dibromochloromethane		12.06.93	93816	84	82	4.00	ug/L
Dibromomethane		12.06.93	93816	93	93	4.00	ug/L
Ethylbenzene		12.06.93	93816	95	95	4.00	ug/L
Hexachlorobutadiene		12.06.93	93816	107	115	4.00	ug/L
Isopropylbenzene		12.06.93	93816	103	113	4.00	ug/L
Methylene chloride		12.06.93	93816	91	91	4.00	ug/L
N-Butylbenzene		12.06.93	93816	106	115	4.00	ug/L
N-Propylbenzene		12.06.93	93816	98	106	4.00	ug/L
Naphthalene		12.06.93	93816	79	83	4.00	ug/L
Styrene		12.06.93	93816	89	89	4.00	ug/L
Trichloroethene		12.06.93	93816	NC	NC	19.1	ug/L
Trichlorofluoromethane		12.06.93	93816	106	100	4.00	ug/L
Toluene		12.06.93	93816	93	93	4.21	ug/L
Tetrachloroethene		12.06.93	93816	100	102	5.58	ug/L
Vinyl chloride		12.06.93	93816	74	76	4.00	ug/L
cis-1,2-Dichloroethene		12.06.93	93816	88	93	4.00	ug/L
cis-1,3-Dichloropropene		12.06.93	93816	86	84	2.00	ug/L
m- and p-Xylene Isomers		12.06.93	93816	91	91	8.00	ug/L
o-Xylene		12.06.93	93816	96	97	4.00	ug/L
p-Isopropyl toluene		12.06.93	93816	100	109	4.00	ug/L
sec-Butylbenzene		12.06.93	93816	106	115	4.00	ug/L
trans-1,2-Dichloroethene		12.06.93	93816	89	93	4.00	ug/L
trans-1,3-Dichloropropene		12.06.93	93816	84	83	2.00	ug/L
tert-Butylbenzene		12.06.93	93816	101	109	4.00	ug/L

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METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)
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PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
1. Anions by IC (C1-3 B312219*1	12.02.93	9328	0	0.5	mg/L	300.0
2. Anions by IC (S04- B312217*1	12.02.93	9328	0	0.1	mg/L	300.0
3. Nitrate as NO3 (30 B312218*1	12.02.93	9328	0	0.2	mg/L	300.0
4. Nitrite (by IC) B312216*1	12.01.93	9328	0	NA	mg/L	300.0
5. Ammonia (350.1) B312212*1	12.03.93	93202	0.03	0.1	mg/L	350.1
5. Turbidity (180.1) B312178*1	12.02.93	93163	.02	0.1	NTU	180.1
7. Filterable Residue B312980*1	12.13.93	93114	0	10	mg/L	160.1
3. Alkalinity (310.1) B3111961*1						
Carbonate Alk (as CaCO3)	12.06.93	9353	<1	1	mg/L	310.1
Bicarbonate Alk (as CaCO3)	12.06.93	9353	0	10	mg/L	310.1
Hydroxide Alk (as CaCO3)	12.06.93	9353	<1	1	mg/L	310.1
Total Alkalinity (as CaCO3)	12.06.93	9353	0	10	mg/L	310.1
9. Calcium (EPA 6010) B3111911*1						
Date Analyzed	12.10.93	931724	12/10/93	NA	Date	6010
Calcium (6010)	12.10.93	931724	0.10	0.5	mg/L	6010
Magnesium (EPA 6010) B3111347*1						
Date Analyzed	12.10.93	931724	12/10/93	NA	Date	6010
Magnesium (6010)	12.10.93	931724	0.08	0.1	mg/L	6010
11. Potassium (EPA 6010) B3111346*1						
Date Analyzed	12.10.93	931724	12/10/93	NA	Date	6010
Potassium (6010)	12.10.93	931724	0	0.5	mg/L	6010
12. Sodium (EPA 6010) B3111253*1						
Date Analyzed	12.10.93	931724	12/10/93	NA	Date	6010
Sodium (6010)	12.10.93	931724	0	0.5	mg/L	6010
13. Digestion (3010) B312602*1	12.09.93	931724	12/08/93	NA	Date	3010
14. SW3010/ICP Digest B312604*1	12.09.93	931724	12/08/93	NA	Date	3010
15. TPH (8015M) B312599*1						
Date Analyzed	12.07.93	93129	12/07/93	NA	Date	8015M
Date Extracted	12.07.93	93129	12/07/93	NA	Date	8015M
TPH (total)	12.07.93	93129	0	1	mg/L	8015M
6. E524.2/VOC B312275*1						
Date Analyzed	12.03.93	93815	12/03/93	NA	Date	524.2
1,1,1,2-Tetrachloroethane	12.03.93	93815	0	0.2	ug/L	524.2
1,1,1-Trichloroethane	12.03.93	93815	0	0.2	ug/L	524.2
1,1,2,2-Tetrachloroethane	12.03.93	93815	0	0.2	ug/L	524.2
1,1,2-Trichloroethane	12.03.93	93815	0	0.2	ug/L	524.2
1,1-Dichloroethane	12.03.93	93815	0	0.2	ug/L	524.2
1,1-Dichloroethene	12.03.93	93815	0	0.2	ug/L	524.2
1,1-Dichloropropene	12.03.93	93815	0	0.2	ug/L	524.2
1,2,3-Trichlorobenzene	12.03.93	93815	0	0.2	ug/L	524.2
1,3-Trichloropropane	12.03.93	93815	0	0.2	ug/L	524.2
1,2,4-Trichlorobenzene	12.03.93	93815	0	0.2	ug/L	524.2
1,2,4-Trimethylbenzene	12.03.93	93815	0	0.2	ug/L	524.2
1,2-Dibromo-3-chloropropane	12.03.93	93815	0	0.5	ug/L	524.2
1,2-Dibromoethane	12.03.93	93815	0	0.2	ug/L	524.2

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PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
1,2-Dichloroethane	12.03.93	93815	0	0.2	ug/L	524.2
1,2-Dichlorobenzene	12.03.93	93815	0	0.2	ug/L	524.2
1,2-Dichloropropane	12.03.93	93815	0	0.2	ug/L	524.2
1,3,5-Trimethylbenzene	12.03.93	93815	0	0.2	ug/L	524.2
1,3-Dichlorobenzene	12.03.93	93815	0	0.2	ug/L	524.2
1,3-Dichloropropane	12.03.93	93815	0	0.2	ug/L	524.2
1,4-Dichlorobenzene	12.03.93	93815	0	0.2	ug/L	524.2
2,2-Dichloropropane	12.03.93	93815	0	0.2	ug/L	524.2
2-Chlorotoluene	12.03.93	93815	0	0.2	ug/L	524.2
4-Chlorotoluene	12.03.93	93815	0	0.2	ug/L	524.2
Bromobenzene	12.03.93	93815	0	0.2	ug/L	524.2
Bromochloromethane	12.03.93	93815	0	0.2	ug/L	524.2
Bromodichloromethane	12.03.93	93815	0	0.2	ug/L	524.2
Bromomethane	12.03.93	93815	0	0.5	ug/L	524.2
Benzene	12.03.93	93815	0	0.2	ug/L	524.2
Chloroform	12.03.93	93815	0	0.2	ug/L	524.2
Chlorobenzene	12.03.93	93815	0	0.2	ug/L	524.2
Carbon Tetrachloride	12.03.93	93815	0	0.2	ug/L	524.2
Chloroethane	12.03.93	93815	0	0.2	ug/L	524.2
Chloroform	12.03.93	93815	0	0.2	ug/L	524.2
Chloromethane	12.03.93	93815	0	0.2	ug/L	524.2
Dibromochloromethane	12.03.93	93815	0	0.2	ug/L	524.2
Dibromomethane	12.03.93	93815	0	0.2	ug/L	524.2
Ethylbenzene	12.03.93	93815	0	0.2	ug/L	524.2
Freon 113	12.03.93	93815	0	0.2	ug/L	524.2
Hexachlorobutadiene	12.03.93	93815	0	0.2	ug/L	524.2
Isopropylbenzene	12.03.93	93815	0	0.2	ug/L	524.2
Methylene chloride	12.03.93	93815	0	0.2	ug/L	524.2
N-Butylbenzene	12.03.93	93815	0	0.2	ug/L	524.2
N-Propylbenzene	12.03.93	93815	0	0.2	ug/L	524.2
Naphthalene	12.03.93	93815	0	0.2	ug/L	524.2
Styrene	12.03.93	93815	0	0.2	ug/L	524.2
Trichloroethene	12.03.93	93815	0	0.2	ug/L	524.2
Trichlorofluoromethane	12.03.93	93815	0	0.2	ug/L	524.2
Toluene	12.03.93	93815	0	0.2	ug/L	524.2
Tetrachloroethene	12.03.93	93815	0	0.2	ug/L	524.2
Vinyl chloride	12.03.93	93815	0	0.2	ug/L	524.2
cis-1,2-Dichloroethene	12.03.93	93815	0	0.2	ug/L	524.2
cis-1,3-Dichloropropene	12.03.93	93815	0	0.2	ug/L	524.2
m- and p-Xylene Isomers	12.03.93	93815	0	0.2	ug/L	524.2
Xylene	12.03.93	93815	0	0.2	ug/L	524.2
o-Isopropyl toluene	12.03.93	93815	0	0.2	ug/L	524.2
sec-Butylbenzene	12.03.93	93815	0	0.2	ug/L	524.2
trans-1,2-Dichloroethene	12.03.93	93815	0	0.2	ug/L	524.2
trans-1,3-Dichloropropene	12.03.93	93815	0	0.2	ug/L	524.2

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PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
tert-Butylbenzene	12.03.93	93815	0	0.2	ug/L	524.2
17. E524.2/VOC		B312378*1				
Date Analyzed	12.06.93	93816	12/06/93	NA	Date	524.2
1,1,1,2-Tetrachloroethane	12.06.93	93816	0	0.2	ug/L	524.2
1,1,1-Trichloroethane	12.06.93	93816	0	0.2	ug/L	524.2
1,1,2,2-Tetrachloroethane	12.06.93	93816	0	0.2	ug/L	524.2
1,1,2-Trichloroethane	12.06.93	93816	0	0.2	ug/L	524.2
1,1-Dichloroethane	12.06.93	93816	0	0.2	ug/L	524.2
1,1-Dichloroethene	12.06.93	93816	0	0.2	ug/L	524.2
1,1-Dichloropropene	12.06.93	93816	0	0.2	ug/L	524.2
1,2,3-Trichlorobenzene	12.06.93	93816	0	0.2	ug/L	524.2
1,2,3-Trichloropropane	12.06.93	93816	0	0.2	ug/L	524.2
1,2,4-Trichlorobenzene	12.06.93	93816	0	0.2	ug/L	524.2
1,2,4-Trimethylbenzene	12.06.93	93816	0	0.2	ug/L	524.2
1,2-Dibromo-3-chloropropane	12.06.93	93816	0	0.5	ug/L	524.2
1,2-Dibromoethane	12.06.93	93816	0	0.2	ug/L	524.2
1,2-Dichloroethane	12.06.93	93816	0	0.2	ug/L	524.2
1,2-Dichlorobenzene	12.06.93	93816	0	0.2	ug/L	524.2
1,2-Dichloropropane	12.06.93	93816	0	0.2	ug/L	524.2
1,3,5-Trimethylbenzene	12.06.93	93816	0	0.2	ug/L	524.2
1,3-Dichlorobenzene	12.06.93	93816	0	0.2	ug/L	524.2
1,3-Dichloropropane	12.06.93	93816	0	0.2	ug/L	524.2
1,4-Dichlorobenzene	12.06.93	93816	0	0.2	ug/L	524.2
2,2-Dichloropropane	12.06.93	93816	0	0.2	ug/L	524.2
2-Chlorotoluene	12.06.93	93816	0	0.2	ug/L	524.2
4-Chlorotoluene	12.06.93	93816	0	0.2	ug/L	524.2
Bromobenzene	12.06.93	93816	0	0.2	ug/L	524.2
Bromochloromethane	12.06.93	93816	0	0.2	ug/L	524.2
Bromodichloromethane	12.06.93	93816	0	0.2	ug/L	524.2
Bromomethane	12.06.93	93816	0	0.5	ug/L	524.2
Benzene	12.06.93	93816	0	0.2	ug/L	524.2
Bromoform	12.06.93	93816	0	0.2	ug/L	524.2
Chlorobenzene	12.06.93	93816	0	0.2	ug/L	524.2
Carbon Tetrachloride	12.06.93	93816	0	0.2	ug/L	524.2
Chloroethane	12.06.93	93816	0	0.2	ug/L	524.2
Chloroform	12.06.93	93816	0	0.2	ug/L	524.2
Chloromethane	12.06.93	93816	0	0.2	ug/L	524.2
Dibromochloromethane	12.06.93	93816	0	0.2	ug/L	524.2
Dibromomethane	12.06.93	93816	0	0.2	ug/L	524.2
Dichlorodifluoromethane	12.06.93	93816	0	NA	ug/L	524.2
1,2-Dichlorobenzene	12.06.93	93816	0	0.2	ug/L	524.2
Freon 113	12.06.93	93816	0	0.2	ug/L	524.2
Hexachlorobutadiene	12.06.93	93816	0	0.2	ug/L	524.2
Isopropylbenzene	12.06.93	93816	0	0.2	ug/L	524.2
Methylene chloride	12.06.93	93816	0	0.2	ug/L	524.2

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BC ANALYTICAL

ORDER QC REPORT FOR G9311378

DATE REPORTED : 12/15/93

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METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
N-Butylbenzene	12.06.93	93816	0	0.2	ug/L	524.2
N-Propylbenzene	12.06.93	93816	0	0.2	ug/L	524.2
Naphthalene	12.06.93	93816	0	0.2	ug/L	524.2
Styrene	12.06.93	93816	0	0.2	ug/L	524.2
Trichloroethene	12.06.93	93816	0	0.2	ug/L	524.2
Trichlorofluoromethane	12.06.93	93816	0	0.2	ug/L	524.2
Toluene	12.06.93	93816	0	0.2	ug/L	524.2
Tetrachloroethene	12.06.93	93816	0	0.2	ug/L	524.2
Vinyl chloride	12.06.93	93816	0	0.2	ug/L	524.2
cis-1,2-Dichloroethene	12.06.93	93816	0	0.2	ug/L	524.2
cis-1,3-Dichloropropene	12.06.93	93816	0	0.2	ug/L	524.2
m- and p-Xylene Isomers	12.06.93	93816	0	0.2	ug/L	524.2
o-Xylene	12.06.93	93816	0	0.2	ug/L	524.2
p-Isopropyl toluene	12.06.93	93816	0	0.2	ug/L	524.2
-Butylbenzene	12.06.93	93816	0	0.2	ug/L	524.2
trans-1,2-Dichloroethene	12.06.93	93816	0	0.2	ug/L	524.2
trans-1,3-Dichloropropene	12.06.93	93816	0	0.2	ug/L	524.2
tert-Butylbenzene	12.06.93	93816	0	0.2	ug/L	524.2

003591

ORDER PLACED FOR CLIENT: SEACOR 9312066 :
BC ANALYTICAL : GLEN LAB : 09:58:35 29 DEC 1993 - P. 1 :
=====

AM	S...	SAMPLE DESCRIPTION...	DETERM.....	DATE....	METHOD.....	EQUIP.	BATCH..	ID.NO
				ANALYZED				
312066*1	GW-1		ANIONS,CL	12.08.93	300.0	533-23	9329	7725
			ANIONS,SO4	12.08.93	300.0	533-23	9329	7725
			ANIONS,NO3	12.08.93	300.0	533-23	9329	7725
			NO2.IC	12.08.93	300.0	533-23	9329	7725
			NH3-N	12.21.93	350.1	533-20	93218	7772
			TURB	12.07.93	180.1	533-10	93167	8488
			TDS	12.16.93	160.1		93116	
			ALK	12.20.93	310.1	533-16	9355	8106
			CA	12.21.93	6010	535-02	931783	7396
			MG	12.21.93	6010	535-02	931783	7396
			K	12.21.93	6010	535-02	931783	7396
			NA	12.21.93	6010	535-02	931783	7396
			DIG,AQ.HCL	12.21.93	3010		931783	7725
			FUEL.TOT	12.09.93	8015M	536-25	93131	8042
			VOA.524.2	12.14.93	524.2	537-03	93822	8444

**

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of analyst.

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BC ANALYTICAL

ORDER QC REPORT FOR G9312066

DATE REPORTED : 12/29/93

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LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1. Anions by IC (C1-3	C312944*1	12.08.93 9329	8.86	10.0	mg/L	89
2. Anions by IC (S04-	C312942*1	12.08.93 9329	22.1	25.0	mg/L	88
3. Nitrate as NO3 (30	C312943*1	12.08.93 9329	8.93	10.0	mg/L	89
4. Nitrite (by IC)	C312941*1	12.08.93 9329	2.19	2.50	mg/L	88
5. Ammonia, distillat	C312841*1	12.21.93 93218	95	100	mg/L	95
6. Ammonia (350.1)	C3121549*1	12.21.93 93218	4.99	5.00	mg/L	100
7. Ammonia, distillat	C3121759*1	12.21.93 93218	91.1	100	mg/L	91
8. Turbidity (180.1)	C312729*1	12.07.93 93167	1.61	1.56	93167	103
9. Turbidity (180.1)	C312730*1	12.07.93 93167	16.5	16.4	NTU	101
10. Turbidity (180.1)	C312731*1	12.07.93 93167	190	191	NTU	99
11. Filterable Residue	C3121222*1	12.16.93 93116	1010	1000	mg/L	101
12. Alkalinity (310.1)	C3121651*1					
Bicarbonate Alk (as CaCO3)		12.20.93 9355	587	596	mg/L	98
Total Alkalinity (as CaCO3)		12.20.93 9355	587	596	mg/L	98
13. Calcium (6010)	C3121761*1	12.21.93 931783	55.6	50.0	mg/L	111
14. Magnesium (6010)	C3121765*1	12.21.93 931783	50.4	50.0	mg/L	101
15. Potassium (6010)	C3121764*1	12.21.93 931783	46.5	50.0	mg/L	93
16. Sodium (6010)	C3121767*1	12.21.93 931783	46.4	50.0	mg/L	93
17. Digestion (3010)	C3121758*1	12.21.93 931783	12/21/93	12/21/93	Date	N/A
18. TPH (8015M)	C312939*1					
Date Analyzed		12.09.93 93131	12/09/93	12/09/93	Date	N/A
Date Extracted		12.09.93 93131	12/09/93	12/09/93	Date	N/A
TPH (total)		12.09.93 93131	22.7	30.0	mg/L	76
19. TPH (8015M)	C312940*1					
Date Analyzed		12.10.93 93131	12/10/93	12/10/93	Date	N/A
Date Extracted		12.10.93 93131	12/09/93	12/09/93	Date	N/A
TPH (total)		12.10.93 93131	28.1	30.0	mg/L	94
20. E524.2/VOC	C3121298*1					
Date Analyzed		12.14.93 93822	12/14/93	12/14/93	Date	N/A
1,1,1,2-Tetrachloroethane		12.14.93 93822	3.37	4.00	ug/L	84
1,1,1-Trichloroethane		12.14.93 93822	3.87	4.00	ug/L	97
1,1,2,2-Tetrachloroethane		12.14.93 93822	4.01	4.00	ug/L	100
1,1,2-Trichloroethane		12.14.93 93822	3.36	4.00	ug/L	84
1,1-Dichloroethane		12.14.93 93822	3.49	4.00	ug/L	87
1,1-Dichloroethene		12.14.93 93822	3.90	4.00	ug/L	97
1,1-Dichloropropene		12.14.93 93822	3.84	4.00	ug/L	96
1,2,3-Trichlorobenzene		12.14.93 93822	4.02	4.00	ug/L	100
1,2,3-Trichloropropane		12.14.93 93822	3.56	4.00	ug/L	89
1,2,4-Trichlorobenzene		12.14.93 93822	4.08	4.00	ug/L	102
1,2,4-Trimethylbenzene		12.14.93 93822	4.05	4.00	ug/L	101
1,2-Dibromo-3-chloropropane		12.14.93 93822	3.87	4.00	ug/L	97
1,1-Dibromoethane		12.14.93 93822	3.47	4.00	ug/L	87
1,1-Dichloroethane		12.14.93 93822	3.17	4.00	ug/L	79
1,2-Dichlorobenzene		12.14.93 93822	4.15	4.00	ug/L	104
1,2-Dichloropropane		12.14.93 93822	3.42	4.00	ug/L	85

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BC ANALYTICAL

ORDER QC REPORT FOR G9312066

TE REPORTED : 12/29/93

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LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1,3,5-Trimethylbenzene	12.14.93	93822	4.16	4.00	ug/L	104
1,3-Dichlorobenzene	12.14.93	93822	4.38	4.00	ug/L	109
1,3-Dichloropropane	12.14.93	93822	3.24	4.00	ug/L	81
1,4-Dichlorobenzene	12.14.93	93822	4.20	4.00	ug/L	105
2,2-Dichloropropane	12.14.93	93822	4.08	4.00	ug/L	102
2-Chlorotoluene	12.14.93	93822	4.04	4.00	ug/L	101
4-Chlorotoluene	12.14.93	93822	4.44	4.00	ug/L	111
Bromobenzene	12.14.93	93822	4.34	4.00	ug/L	108
Bromochloromethane	12.14.93	93822	3.65	4.00	ug/L	91
Bromodichloromethane	12.14.93	93822	3.23	4.00	ug/L	81
Bromomethane	12.14.93	93822	3.50	4.00	ug/L	87
Benzene	12.14.93	93822	3.57	4.00	ug/L	89
Bromoform	12.14.93	93822	3.16	4.00	ug/L	79
Chlorobenzene	12.14.93	93822	3.52	4.00	ug/L	88
Carbon Tetrachloride	12.14.93	93822	4.05	4.00	ug/L	101
Chloroethane	12.14.93	93822	3.27	4.00	ug/L	82
Chloroform	12.14.93	93822	3.52	4.00	ug/L	88
Chloromethane	12.14.93	93822	2.86	4.00	ug/L	71
Dibromochloromethane	12.14.93	93822	3.03	4.00	ug/L	76
Dibromomethane	12.14.93	93822	3.55	4.00	ug/L	89
Ethylbenzene	12.14.93	93822	3.73	4.00	ug/L	93
Hexachlorobutadiene	12.14.93	93822	4.89	4.00	ug/L	122
Isopropylbenzene	12.14.93	93822	4.65	4.00	ug/L	116
Methylene chloride	12.14.93	93822	3.34	4.00	ug/L	83
N-Butylbenzene	12.14.93	93822	4.63	4.00	ug/L	116
N-Propylbenzene	12.14.93	93822	4.31	4.00	ug/L	108
Naphthalene	12.14.93	93822	3.16	4.00	ug/L	79
Styrene	12.14.93	93822	3.45	4.00	ug/L	86
Trichloroethene	12.14.93	93822	3.80	4.00	ug/L	95
Trichlorofluoromethane	12.14.93	93822	3.99	4.00	ug/L	100
Toluene	12.14.93	93822	3.69	4.00	ug/L	92
Tetrachloroethene	12.14.93	93822	4.16	4.00	ug/L	104
Vinyl chloride	12.14.93	93822	3.13	4.00	ug/L	78
cis-1,2-Dichloroethene	12.14.93	93822	3.46	4.00	ug/L	86
cis-1,3-Dichloropropene	12.14.93	93822	1.61	2.00	ug/L	80
m- and p-Xylene Isomers	12.14.93	93822	7.25	8.00	ug/L	91
o-Xylene	12.14.93	93822	3.76	4.00	ug/L	94
p-Isopropyl toluene	12.14.93	93822	4.48	4.00	ug/L	112
sec-Butylbenzene	12.14.93	93822	4.79	4.00	ug/L	120
trans-1,2-Dichloroethene	12.14.93	93822	3.74	4.00	ug/L	93
trans-1,3-Dichloropropene	12.14.93	93822	1.51	2.00	ug/L	75
tert-Butylbenzene	12.14.93	93822	4.49	4.00	ug/L	112
24.2/VOC	C3121299*1					
Date Analyzed	12.15.93	93822	12/14/93	12/14/93	Date	N/A
1,1,1,2-Tetrachloroethane	12.15.93	93822	3.58	4.00	ug/L	89

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BC ANALYTICAL

ORDER QC REPORT FOR G9312066

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DATE REPORTED : 12/29/93

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1,1,1-Trichloroethane	12.15.93	93822	4.02	4.00	ug/L	100
1,1,2,2-Tetrachloroethane	12.15.93	93822	3.99	4.00	ug/L	100
1,1,2-Trichloroethane	12.15.93	93822	3.39	4.00	ug/L	85
1,1-Dichloroethane	12.15.93	93822	3.63	4.00	ug/L	91
1,1-Dichloroethene	12.15.93	93822	4.01	4.00	ug/L	100
1,1-Dichloropropene	12.15.93	93822	4.05	4.00	ug/L	101
1,2,3-Trichlorobenzene	12.15.93	93822	4.32	4.00	ug/L	108
1,2,3-Trichloropropane	12.15.93	93822	3.80	4.00	ug/L	95
1,2,4-Trichlorobenzene	12.15.93	93822	4.37	4.00	ug/L	109
1,2,4-Trimethylbenzene	12.15.93	93822	4.29	4.00	ug/L	107
1,2-Dibromo-3-chloropropane	12.15.93	93822	3.75	4.00	ug/L	94
1,2-Dibromoethane	12.15.93	93822	3.67	4.00	ug/L	92
1,2-Dichloroethane	12.15.93	93822	3.32	4.00	ug/L	83
1,2-Dichlorobenzene	12.15.93	93822	4.47	4.00	ug/L	112
1,2-Dichloropropane	12.15.93	93822	3.66	4.00	ug/L	91
1,3,5-Trimethylbenzene	12.15.93	93822	4.43	4.00	ug/L	111
1,3-Dichlorobenzene	12.15.93	93822	4.59	4.00	ug/L	115
1,3-Dichloropropane	12.15.93	93822	3.42	4.00	ug/L	85
1,4-Dichlorobenzene	12.15.93	93822	4.57	4.00	ug/L	114
2,2-Dichloropropane	12.15.93	93822	4.23	4.00	ug/L	106
2-Chlorotoluene	12.15.93	93822	4.29	4.00	ug/L	107
4-Chlorotoluene	12.15.93	93822	4.70	4.00	ug/L	117
Bromobenzene	12.15.93	93822	4.66	4.00	ug/L	116
Bromochloromethane	12.15.93	93822	3.82	4.00	ug/L	95
Bromodichloromethane	12.15.93	93822	3.35	4.00	ug/L	84
Bromomethane	12.15.93	93822	3.53	4.00	ug/L	88
Benzene	12.15.93	93822	3.73	4.00	ug/L	93
Bromoform	12.15.93	93822	3.19	4.00	ug/L	80
Chlorobenzene	12.15.93	93822	3.79	4.00	ug/L	95
Carbon Tetrachloride	12.15.93	93822	4.14	4.00	ug/L	103
Chloroethane	12.15.93	93822	3.19	4.00	ug/L	80
Chloroform	12.15.93	93822	3.72	4.00	ug/L	93
Chloromethane	12.15.93	93822	2.52	4.00	ug/L	63
Dibromochloromethane	12.15.93	93822	3.25	4.00	ug/L	81
Dibromomethane	12.15.93	93822	3.71	4.00	ug/L	93
Ethylbenzene	12.15.93	93822	3.96	4.00	ug/L	99
Hexachlorobutadiene	12.15.93	93822	4.60	4.00	ug/L	115
Isopropylbenzene	12.15.93	93822	4.90	4.00	ug/L	122
Methylene chloride	12.15.93	93822	3.57	4.00	ug/L	89
N-Butylbenzene	12.15.93	93822	4.88	4.00	ug/L	122
N-Propylbenzene	12.15.93	93822	4.56	4.00	ug/L	114
Naphthalene	12.15.93	93822	3.36	4.00	ug/L	84
Phenylacetylene	12.15.93	93822	3.69	4.00	ug/L	92
1,1-Dichloroethene	12.15.93	93822	4.06	4.00	ug/L	101
Trichlorofluoromethane	12.15.93	93822	4.02	4.00	ug/L	100

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BC ANALYTICAL

ORDER QC REPORT FOR G9312066

TE REPORTED : 12/29/93

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LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
Toluene	12.15.93	93822	3.91	4.00	ug/L	98
Tetrachloroethene	12.15.93	93822	4.35	4.00	ug/L	109
Vinyl chloride	12.15.93	93822	3.04	4.00	ug/L	76
cis-1,2-Dichloroethene	12.15.93	93822	3.79	4.00	ug/L	95
cis-1,3-Dichloropropene	12.15.93	93822	1.70	2.00	ug/L	85
m- and p-Xylene Isomers	12.15.93	93822	7.55	8.00	ug/L	94
o-Xylene	12.15.93	93822	3.98	4.00	ug/L	99
p-Isopropyl toluene	12.15.93	93822	4.70	4.00	ug/L	117
sec-Butylbenzene	12.15.93	93822	5.00	4.00	ug/L	125
trans-1,2-Dichloroethene	12.15.93	93822	3.88	4.00	ug/L	97
trans-1,3-Dichloropropene	12.15.93	93822	1.60	2.00	ug/L	80
tert-Butylbenzene	12.15.93	93822	4.68	4.00	ug/L	117

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BC ANALYTICAL

ORDER QC REPORT FOR G9312066

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TE REPORTED : 12/29/93

ADDITIONAL LCS PRECISION (DUPLICATES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	LC1 RESULT	LC2 RESULT	UNIT	RELATIVE % DIFF
TPH (8015M)							
Date Analyzed		12.09.93	93131	12/09/93	12/10/93	Date	N/A
Date Extracted		12.09.93	93131	12/09/93	12/09/93	Date	N/A
TPH (total)		12.09.93	93131	22.7	28.1	mg/L	21
E524.2/VOC							
Date Analyzed		12.14.93	93822	12/14/93	12/14/93	Date	N/A
1,1,1,2-Tetrachloroethane		12.14.93	93822	3.37	3.58	ug/L	6
1,1,1-Trichloroethane		12.14.93	93822	3.87	4.02	ug/L	4
1,1,2,2-Tetrachloroethane		12.14.93	93822	4.01	3.99	ug/L	0
1,1,2-Trichloroethane		12.14.93	93822	3.36	3.39	ug/L	1
1,1-Dichloroethane		12.14.93	93822	3.49	3.63	ug/L	4
1,1-Dichloroethene		12.14.93	93822	3.90	4.01	ug/L	3
1,1-Dichloropropene		12.14.93	93822	3.84	4.05	ug/L	5
1,2,3-Trichlorobenzene		12.14.93	93822	4.02	4.32	ug/L	7
1,2,3-Trichloropropane		12.14.93	93822	3.56	3.80	ug/L	6
1,2,4-Trichlorobenzene		12.14.93	93822	4.08	4.37	ug/L	7
1,3,5-Trimethylbenzene		12.14.93	93822	4.05	4.29	ug/L	6
1,2-Dibromo-3-chloropropane		12.14.93	93822	3.87	3.75	ug/L	3
1,2-Dibromoethane		12.14.93	93822	3.47	3.67	ug/L	6
1,2-Dichloroethane		12.14.93	93822	3.17	3.32	ug/L	5
1,2-Dichlorobenzene		12.14.93	93822	4.15	4.47	ug/L	7
1,2-Dichloropropane		12.14.93	93822	3.42	3.66	ug/L	7
1,3,5-Trimethylbenzene		12.14.93	93822	4.16	4.43	ug/L	6
1,3-Dichlorobenzene		12.14.93	93822	4.38	4.59	ug/L	5
1,3-Dichloropropane		12.14.93	93822	3.24	3.42	ug/L	5
1,4-Dichlorobenzene		12.14.93	93822	4.20	4.57	ug/L	8
2,2-Dichloropropane		12.14.93	93822	4.08	4.23	ug/L	4
2-Chlorotoluene		12.14.93	93822	4.04	4.29	ug/L	6
4-Chlorotoluene		12.14.93	93822	4.44	4.70	ug/L	6
Bromobenzene		12.14.93	93822	4.34	4.66	ug/L	7
Bromochloromethane		12.14.93	93822	3.65	3.82	ug/L	5
Bromodichloromethane		12.14.93	93822	3.23	3.35	ug/L	4
Bromomethane		12.14.93	93822	3.50	3.53	ug/L	1
Benzene		12.14.93	93822	3.57	3.73	ug/L	4
Bromoform		12.14.93	93822	3.16	3.19	ug/L	1
Chlorobenzene		12.14.93	93822	3.52	3.79	ug/L	7
Carbon Tetrachloride		12.14.93	93822	4.05	4.14	ug/L	2
Chloroethane		12.14.93	93822	3.27	3.19	ug/L	2
Chloroform		12.14.93	93822	3.52	3.72	ug/L	5
Chloromethane		12.14.93	93822	2.86	2.52	ug/L	13
Dibromochloromethane		12.14.93	93822	3.03	3.25	ug/L	7
Dibromomethane		12.14.93	93822	3.55	3.71	ug/L	4
Dibromobenzene		12.14.93	93822	3.73	3.96	ug/L	6
Dichlorobutadiene		12.14.93	93822	4.89	4.60	ug/L	6
Isopropylbenzene		12.14.93	93822	4.65	4.90	ug/L	5

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ORDER QC REPORT FOR G9312066

Page 2

ADDITIONAL LCS PRECISION (DUPLICATES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	LC1 RESULT	LC2 RESULT	UNIT	RELATIVE % DIFF
Methylene chloride		12.14.93	93822	3.34	3.57	ug/L	7
N-Butylbenzene		12.14.93	93822	4.63	4.88	ug/L	5
N-Propylbenzene		12.14.93	93822	4.31	4.56	ug/L	6
Naphthalene		12.14.93	93822	3.16	3.36	ug/L	6
Styrene		12.14.93	93822	3.45	3.69	ug/L	7
Trichloroethene		12.14.93	93822	3.80	4.06	ug/L	7
Trichlorofluoromethane		12.14.93	93822	3.99	4.02	ug/L	1
Toluene		12.14.93	93822	3.69	3.91	ug/L	6
Tetrachloroethene		12.14.93	93822	4.16	4.35	ug/L	4
Vinyl chloride		12.14.93	93822	3.13	3.04	ug/L	3
cis-1,2-Dichloroethene		12.14.93	93822	3.46	3.79	ug/L	9
cis-1,3-Dichloropropene		12.14.93	93822	1.61	1.70	ug/L	5
m- and p-Xylene Isomers		12.14.93	93822	7.25	7.55	ug/L	4
o-Xylene		12.14.93	93822	3.76	3.98	ug/L	6
p-Isopropyl toluene		12.14.93	93822	4.48	4.70	ug/L	5
sec-Butylbenzene		12.14.93	93822	4.79	5.00	ug/L	4
trans-1,2-Dichloroethene		12.14.93	93822	3.74	3.88	ug/L	4
trans-1,3-Dichloropropene		12.14.93	93822	1.51	1.60	ug/L	6
tert-Butylbenzene		12.14.93	93822	4.49	4.68	ug/L	4

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Page 1

DATE REPORTED : 12/29/93

MATRIX QC PRECISION (DUPLICATES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	R1 RESULT	R2 RESULT	UNIT	RELATIVE % DIFF
Turbidity (180.1)	9312066*1	12.07.93	93167	1.42	1.47	NTU	3

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ORDER QC REPORT FOR G9312066

Page 1

MATRIX QC PRECISION (DUPLICATE SPIKES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS RESULT	MSD RESULT	UNIT	RELATIVE % DIFF
Anions by IC (Cl-3	9312066*1	12.08.93	9329	33.0	34.1	mg/L	3
Anions by IC (SO4-	9312066*1	12.08.93	9329	99.7	100	mg/L	0
Nitrate as NO3 (30	9312066*1	12.08.93	9329	65.9	66.8	mg/L	1
Nitrite (by IC)	9312066*1	12.08.93	9329	8.45	8.52	mg/L	1
Ammonia (350.1)	9312066*1	12.21.93	93218	1.22	1.26	mg/L	3
Filterable Residue	9312066*1	12.16.93	93116	1440	1400	mg/L	3
Alkalinity (310.1)	9312066*1						
Bicarbonate Alk (as CaCO3)		12.20.93	9355	672	670	mg/L	0
Total Alkalinity (as CaCO3)		12.20.93	9355	672	670	mg/L	0
Calcium (6010)	9312162*1	12.22.93	931783	638	627	mg/L	2
Magnesium (6010)	9312162*1	12.22.93	931783	457	449	mg/L	2
. Potassium (6010)	9312162*1	12.21.93	931783	27	27.6	mg/L	2
. Sodium (6010)	9312162*1	12.22.93	931783	2600	2560	mg/L	2
. Digestion (3010)	9312162*1	12.21.93	931783	12/21/93	12/21/93	Date	N/A

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ORDER QC REPORT FOR G9312066

Page 1

DATE REPORTED : 12/29/93

MATRIX QC ACCURACY (SPIKES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS %	MSD %	TRUE RESULT	UNIT	
Anions by IC (Cl-3	9312066*1	12.08.93	9329	NC	NC	37.0	mg/L	NC
Anions by IC (SO4-	9312066*1	12.08.93	9329	73	73	116	mg/L	
Nitrate as NO3 (30	9312066*1	12.08.93	9329	75	77	76.0	mg/L	
Nitrite (by IC)	9312066*1	12.08.93	9329	84	85	10.0	mg/L	
Ammonia (350.1)	9312066*1	12.21.93	93218	84	88	1.38	mg/L	
Filterable Residue	9312066*1	12.16.93	93116	103	99	1410	mg/L	
Alkalinity (310.1)	9312066*1							
Bicarbonate Alk (as CaCO3)		12.20.93	9355	100	100	672	mg/L	
Total Alkalinity (as CaCO3)		12.20.93	9355	100	100	672	mg/L	
Calcium (6010)	9312162*1	12.22.93	931783	NC	NC	620	mg/L	NC
Magnesium (6010)	9312162*1	12.22.93	931783	NC	NC	440	mg/L	NC
Potassium (6010)	9312162*1	12.21.93	931783	100	106	27.0	mg/L	
Sodium (6010)	9312162*1	12.22.93	931783	NC	NC	2550	mg/L	NC

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BC ANALYTICAL

ORDER QC REPORT FOR G9312066

TE REPORTED : 12/29/93

Page 1

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
Anions by IC (C1-3	12.08.93	9329	0.48	0.05	mg/L	300.0
Anions by IC (S04-	12.08.93	9329	0	0.1	mg/L	300.0
Nitrate as NO3 (30	12.08.93	9329	0	0.2	mg/L	300.0
Nitrite (by IC)	12.08.93	9329	0	NA	mg/L	300.0
Ammonia (350.1)	12.21.93	93218	0.03	0.1	mg/L	350.1
Ammonia, distillat	12.21.93	93218	0	0.1	mg/L	350.1
Turbidity (180.1)	12.07.93	93167	0	0.1	NTU	180.1
Filterable Residue	12.16.93	93116	0	10	mg/L	160.1
Alkalinity (310.1)	12.20.93	9355	<1	1	mg/L	310.1
Carbonate Alk (as CaCO3)	12.20.93	9355	0	10	mg/L	310.1
Bicarbonate Alk (as CaCO3)	12.20.93	9355	<1	1	mg/L	310.1
Hydroxide Alk (as CaCO3)	12.20.93	9355	0	10	mg/L	310.1
Total Alkalinity (as CaCO3)	12.21.93	931783	0	0.5	mg/L	6010
. Calcium (6010)	12.21.93	931783	0	0.1	mg/L	6010
. Magnesium (6010)	12.21.93	931783	0	0.5	mg/L	6010
. Potassium (6010)	12.21.93	931783	0	0.5	mg/L	6010
. Sodium (6010)	12.21.93	931783	12/21/93	NA	Date	3010
Digestion (3010)	12.09.93	93131	12/09/93	NA	Date	8015M
. TPH (8015M)	12.09.93	93131	12/09/93	NA	Date	8015M
Date Analyzed	12.09.93	93131	0	1	mg/L	8015M
Date Extracted	12.14.93	93822	12/14/93	NA	Date	524.2
TPH (total)	12.14.93	93822	0	0.2	ug/L	524.2
. E524.2/VOC	12.14.93	93822	0	0.2	ug/L	524.2
Date Analyzed	12.14.93	93822	0	0.2	ug/L	524.2
1,1,1,2-Tetrachloroethane	12.14.93	93822	0	0.2	ug/L	524.2
1,1,1-Trichloroethane	12.14.93	93822	0	0.2	ug/L	524.2
1,1,2,2-Tetrachloroethane	12.14.93	93822	0	0.2	ug/L	524.2
1,1,2-Trichloroethane	12.14.93	93822	0	0.2	ug/L	524.2
1,1-Dichloroethane	12.14.93	93822	0	0.2	ug/L	524.2
1,1-Dichloroethene	12.14.93	93822	0	0.2	ug/L	524.2
1,1-Dichloropropene	12.14.93	93822	0	0.2	ug/L	524.2
1,2,3-Trichlorobenzene	12.14.93	93822	0	0.2	ug/L	524.2
1,2,3-Trichloropropane	12.14.93	93822	0	0.2	ug/L	524.2
1,2,4-Trichlorobenzene	12.14.93	93822	0	0.2	ug/L	524.2
1,2,4-Trimethylbenzene	12.14.93	93822	0	0.2	ug/L	524.2
1,2-Dibromo-3-chloropropane	12.14.93	93822	0	0.5	ug/L	524.2
1,2-Dibromoethane	12.14.93	93822	0	0.2	ug/L	524.2
1,2-Dichloroethane	12.14.93	93822	0	0.2	ug/L	524.2
1,2-Dichlorobenzene	12.14.93	93822	0	0.2	ug/L	524.2
1,2-Dichloropropane	12.14.93	93822	0	0.2	ug/L	524.2
1,3,5-Trimethylbenzene	12.14.93	93822	0	0.2	ug/L	524.2
1,4-Dichlorobenzene	12.14.93	93822	0	0.2	ug/L	524.2
1,4-Dichloropropane	12.14.93	93822	0	0.2	ug/L	524.2
1,4-Dichlorobenzene	12.14.93	93822	0	0.2	ug/L	524.2
2,2-Dichloropropane	12.14.93	93822	0	0.2	ug/L	524.2

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ORDER QC REPORT FOR G9312066

TE REPORTED : 12/29/93

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METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
2-Chlorotoluene	12.14.93	93822	0	0.2	ug/L	524.2
4-Chlorotoluene	12.14.93	93822	0	0.2	ug/L	524.2
Bromobenzene	12.14.93	93822	0	0.2	ug/L	524.2
Bromochloromethane	12.14.93	93822	0	0.2	ug/L	524.2
Bromodichloromethane	12.14.93	93822	0	0.2	ug/L	524.2
Bromomethane	12.14.93	93822	0	0.5	ug/L	524.2
Benzene	12.14.93	93822	0	0.2	ug/L	524.2
Bromoform	12.14.93	93822	0	0.2	ug/L	524.2
Chlorobenzene	12.14.93	93822	0	0.2	ug/L	524.2
Carbon Tetrachloride	12.14.93	93822	0	0.2	ug/L	524.2
Chloroethane	12.14.93	93822	0	0.2	ug/L	524.2
Chloroform	12.14.93	93822	0	0.2	ug/L	524.2
Chloromethane	12.14.93	93822	0	0.2	ug/L	524.2
Dibromochloromethane	12.14.93	93822	0	0.2	ug/L	524.2
Dibromomethane	12.14.93	93822	0	0.2	ug/L	524.2
Diiododifluoromethane	12.14.93	93822	0	NA	ug/L	524.2
Ethylbenzene	12.14.93	93822	0	0.2	ug/L	524.2
Ion 113	12.14.93	93822	0	0.2	ug/L	524.2
Hexachlorobutadiene	12.14.93	93822	0	0.2	ug/L	524.2
Isopropylbenzene	12.14.93	93822	0	0.2	ug/L	524.2
Methylene chloride	12.14.93	93822	0	0.2	ug/L	524.2
N-Butylbenzene	12.14.93	93822	0	0.2	ug/L	524.2
N-Propylbenzene	12.14.93	93822	0	0.2	ug/L	524.2
Naphthalene	12.14.93	93822	0	0.2	ug/L	524.2
Styrene	12.14.93	93822	0	0.2	ug/L	524.2
Trichloroethene	12.14.93	93822	0	0.2	ug/L	524.2
Trichlorofluoromethane	12.14.93	93822	0	0.2	ug/L	524.2
Toluene	12.14.93	93822	0	0.2	ug/L	524.2
Tetrachloroethene	12.14.93	93822	0	0.2	ug/L	524.2
Vinyl chloride	12.14.93	93822	0	0.2	ug/L	524.2
cis-1,2-Dichloroethene	12.14.93	93822	0	0.2	ug/L	524.2
cis-1,3-Dichloropropene	12.14.93	93822	0	0.2	ug/L	524.2
m- and p-Xylene Isomers	12.14.93	93822	0	0.2	ug/L	524.2
o-Xylene	12.14.93	93822	0	0.2	ug/L	524.2
o-Isopropyl toluene	12.14.93	93822	0	0.2	ug/L	524.2
sec-Butylbenzene	12.14.93	93822	0	0.2	ug/L	524.2
trans-1,2-Dichloroethene	12.14.93	93822	0	0.2	ug/L	524.2
trans-1,3-Dichloropropene	12.14.93	93822	0	0.2	ug/L	524.2
tert-Butylbenzene	12.14.93	93822	0	0.2	ug/L	524.2

003603

APPENDIX B
CASE NARRATIVE

003604

BCA CASE NARRATIVE

BC Analytical

291 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

SEACOR

CASE NARRATIVE FOR GENERAL CHEMISTRY

This case narrative pertains to the following samples:

<u>BCA ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Analyses Requested</u>
G93-11-378-1	GW-2	GW	Anions, NH3-N, TDS, ALK, TURB
G93-11-378-2	GW-3	GW	Anions, NH3-N, TDS, ALK, TURB
G93-11-378-3	GW-4	GW	Anions, NH3-N, TDS, ALK, TURB
G93-11-378-4	GW-5	GW	Anions, NH3-N, TDS, ALK, TURB
G93-11-378-5	GW-6	GW	Anions, NH3-N, TDS, ALK, TURB
G93-11-378-6	Equipment Blank	BW	Anions, NH3-N, TDS, ALK, TURB
G93-12-066-1	GW-1	GW	Anions, NH3-N, TDS, ALK, TURB

These aqueous samples were received at BCA Glendale on November 30 and December 7, 1993.

The samples were analyzed for NH3-N according to EPA Method 350.1; for Alkalinity according to EPA Method 310.1; for TDS according to standard operating procedure GE00188.G; for Turbidity according to standard operating procedure GE01489.G and for Anions according to EPA Method 300.0. There were no deviations from the methods.

QC Criteria:

Total Dissolved Solids (TDS):

Because no QC was done on the G93-11-378 groundwaters, the samples were reset (past holding time and with client's knowledge and permission). Similarly, G93-12-066, also done originally without QC, was reset past holding time.

Anions:

The chloride concentration in the method blank in Batch 29 was 0.54 mg/L, possibly due to the nanowater. The samples (G93-12-066-1 and its matrix spike and matrix spike duplicate) were reported since their chloride concentrations were greater than 10 times the method blank.

No problems were noted with the other analyses and all QC criteria were met.

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SEACOR**CASE NARRATIVE FOR METALS**

This case narrative pertains to the following samples:

<u>BCA ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Batch</u>	<u>Inst</u>
G93-11-378-1	GW-2	GW	931724	535-02
G93-11-378-2	GW-3	GW	931724	535-02
G93-11-378-3	GW-4	GW	931724	535-02
G93-11-378-4	GW-5	GW	931724	535-02
G93-11-378-5	GW-6	GW	931724	535-02
G93-11-378-6	Equipment Blank	BW	931724	535-02
G93-12-066-1	GW-1	GW	931783	535-02

The 6 groundwater samples (G93-11-378) were received at BCA Laboratory in Glendale on November 30 and sample G93-12-066 was received on December 7, 1993.

They were prepped according to standard operating procedure PR00488 and analyzed for calcium, magnesium, potassium and sodium according to standard operating procedure ME00288.G (Inductively Coupled Plasma Emission Spectroscopy). There were no deviations from the method and holding times were met. No dilutions or reruns were needed in any of the batches.

QC Criteria:

All QC criteria were met in all batches.

BCA CASE NARRATIVE

BC Analytical

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SEACOR

CASE NARRATIVE FOR SEMIVOLATILES (EPA 8015 Modified)

This case narrative pertains to the following samples:

<u>BCA ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Batch</u>	<u>Inst</u>
G93-11-378-1	GW-2	GW	93129	536-25
G93-11-378-2	GW-3	GW	93129	536-25
G93-11-378-3	GW-4	GW	93129	536-25
G93-11-378-4	GW-5	GW	93129	536-25
G93-11-378-5	GW-6	GW	93129	536-25
G93-11-378-6	Equipment Blank	BW	93129	536-25
G93-11-378-7	Trip Blank	BW	93129	536-25
G93-12-066-1	GW-1	GW	93131	536-25

These groundwater samples were received at BCA Laboratory in Glendale on November 30 and December 7, 1993. They were analyzed for fuels (EPA 8015 Modified) according to standard operating procedure GC00288. There were no deviations from the method. Holding times were met.

QC Criteria for Batches 93129 and 93131:

Daily Midpoint: The QC requirement for the daily midpoints is that they fall within + or - 25% of the initial calibration standards.

Batch 93129: Gasoline - 92% (in control)

Diesel - 101% (in control)

Batch 93131: Gasoline - 94% (in control)

Diesel - 105% (in control)

Method Blank: No gasoline or diesel was detected above the RDL in the method blanks.

Matrix Spike and Matrix Spike Duplicate: MS and MSD were spiked with both gasoline and diesel. All spiked compound recoveries were within control limits.

LCS: All recoveries were within control limits. Gasoline and diesel were used to spike the LCS.

All surrogates were in control.

BCA CASE NARRATIVE

BC Analytical

291 Western Avenue
Glendale, CA 91201
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Fax: 818/247-9797

SEACOR

CASE NARRATIVE FOR VOLATILES (EPA 524.2)

This case narrative pertains to the following samples:

<u>BCA ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Batch</u>	<u>Inst</u>
G93-11-378-1	GW-2	GW	93815	537-03
G93-11-378-2	GW-3	GW	93816	537-03
G93-11-378-3	GW-4	GW	93816	537-03
G93-11-378-4	GW-5	GW	93815	537-03
G93-11-378-5	GW-6	GW	93816	537-03
G93-11-378-6	Equipment Blank	BW	93816	537-03
G93-11-378-7	Trip Blank	BW	93816	537-03
G93-12-066-1	GW-1	GW	93822	537-03

These groundwater samples were received at BCA Laboratory in Glendale on November 30 and December 7, 1993. They were analyzed for volatile organics according to standard operating procedure MS00792.G. There were no deviations from the method and holding times were met.

Sample G93-11-378-2 and G93-11-378-3 had low internal standard recoveries in Batch 815. They were rerun in Batch 816 along with samples G93-11-378-5,6,7. Sample G93-11-378-5 was rerun in the same batch because of low internal standards.

QC Criteria for Batches 93815, 93816 and 93822:

Daily Midpoint Standard: 65 compounds met the + or - 30% criteria in Batches 815 and 816. Chloromethane and Trichlorofluoromethane were outside the control limits in Batch 822.

Method Blank: No compounds above the RDL were detected in any of the method blanks.

Matrix Spike/Matrix Spike Duplicate (MS/MSD): Matrix QC was performed on sample G93-11-378-1 in Batch 815, and on G93-11-378-3 in Batch 816. All compound recoveries were within the control limits. Sample G93-12-066-1, which had been spiked in Batch 822, exhibited low internal standards in the MS and MSD. There was not enough sample for a rerun and 2 LCSs were analyzed instead.

Laboratory Control Standard (LCS): All compounds were in control in all batches.

All surrogates were in control.

APPENDIX C
GENERAL CHEMISTRY

003609

MDL Summary

003610

Order No.: 69309243
Reported: 10.11.93

REPORT OF MDL RESULTS

Page 1

PARAMETER	CONE	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AVG	SD	MDL	MDL(AQ)	MDL(MAQ)
Anions by IC (Method E300) 533-23													
Bromide (300.0)	0.25	0.30	0.31	0.37	0.27	0.29	0.27	0.27	0.297143	0.035923	0.112798	0.2 ng/L	2 ng/kg
Anions by IC (CI-300.0)	0.1	0.52	0.52	0.52	0.51	0.54	0.53	0.53	0.524286	0.009739	0.030643	0.05 ng/L	0.5 ng/kg
Fluoride (300.0)	0.25	0.20	0.21	0.20	0.20	0.20	0.20	0.19	0.200000	0.005773	0.018127	0.05 ng/L	0.5 ng/kg
Nitrite (300.0)	0.25	0.394	0.396	0.416	0.441	0.361	0.401	0.418	0.403857	0.024936	0.078299	0.1 ng/L	1 ng/kg
Nitrate as NH3 (300.0)	0.25	0.35	0.29	0.32	0.30	0.30	0.28	0.32	0.308571	0.023401	0.073479	0.1 ng/L	1 ng/kg
o-Phosphate as PO4 (300.0)	0.5	0.58	0.60	0.60	0.59	0.62	0.60	0.68	0.610000	0.033166	0.104141	0.3 ng/L	3 ng/kg
Anions by IC (SD4-300.0)	0.25	0.15	0.15	0.14	0.13	0.18	0.12	0.13	0.142857	0.019760	0.062046	0.1 ng/L	1 ng/kg

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Report No.: 69309242
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REPORT OF MDL RESULTS

Page 1

METER	CUNC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AVG	SD	MDL	MDL(AQ)	MDL(MAQ)
Mercuric Residue, TDS (160.1)	20	27	31	25	30	26	26	23	26.857143	2.794553	8.774896	10 ng/L	---

003612

Order No.: 69210376
 Reported: 11.06.92

REPORT OF MDL RESULTS

Page 1

PARAMETER	CONC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AUC	SD	MDL	MDL (RQ)	MDL (H88)
turbidity 533-10	0.5	0.49	0.49	0.49	0.50	0.48	0.49	0.52	0.46	0.018757	0.057327	0.1	NTU

003613

Standard Operating Procedures

003614

NH3-N Method 350.1

003615

NITROGEN, AMMONIA

Method 350.1 (Colorimetric, Automated Phenate)

STORET NO. Total 00610

Dissolved 00608

1. Scope and Application
 - 1.1 This method covers the determination of ammonia in drinking, surface, and saline waters, domestic and industrial wastes in the range of 0.01 to 2.0 mg/l NH_3 as N. This range is for photometric measurements made at 630–660 nm in a 15 mm or 50 mm tubular flow cell. Higher concentrations can be determined by sample dilution. Approximately 20 to 60 samples per hour can be analyzed.
2. Summary of Method
 - 2.1 Alkaline phenol and hypochlorite react with ammonia to form indophenol blue that is proportional to the ammonia concentration. The blue color formed is intensified with sodium nitroprusside.
3. Sample Handling and Preservation
 - 3.1 Preservation by addition of 2 ml conc. H_2SO_4 per liter and refrigeration at 4°C.
4. Interferences
 - 4.1 Calcium and magnesium ions may be present in concentration sufficient to cause precipitation problems during analysis. A 5% EDTA solution is used to prevent the precipitation of calcium and magnesium ions from river water and industrial waste. For sea water a sodium potassium tartrate solution is used.
 - 4.2 Sample turbidity and color may interfere with this method. Turbidity must be removed by filtration prior to analysis. Sample color that absorbs in the photometric range used will also interfere.
5. Apparatus
 - 5.1 Technicon AutoAnalyzer Unit (AAI or AAI) consisting of:
 - 5.1.1 Sampler.
 - 5.1.2 Manifold (AAI) or Analytical Cartridge (AAII).
 - 5.1.3 Proportioning pump.
 - 5.1.4 Heating bath with double delay coil (AAI).
 - 5.1.5 Colorimeter equipped with 15 mm tubular flow cell and 630–660 nm filters.
 - 5.1.6 Recorder.
 - 5.1.7 Digital printer for AAI (optional).

Approved for NPDES following preliminary distillation, Method 350.2.

Issued 1974

Editorial revision 1978

6. Reagents

- 6.1 Distilled water: Special precaution must be taken to insure that distilled water is free of ammonia. Such water is prepared by passage of distilled water through an ion exchange column comprised of a mixture of both strongly acidic cation and strongly basic anion exchange resins. The regeneration of the ion exchange column should be carried out according to the instruction of the manufacturer.

NOTE 1: All solutions must be made using ammonia-free water.

- 6.2 Sulfuric acid 5N: Air scrubber solution. Carefully add 139 ml of conc. sulfuric acid to approximately 500 ml of ammonia-free distilled water. Cool to room temperature and dilute to 1 liter with ammonia-free distilled water.

- 6.3 Sodium phenolate: Using a 1 liter Erlenmeyer flask, dissolve 83 g phenol in 500 ml of distilled water. In small increments, cautiously add with agitation, 32 g of NaOH. Periodically cool flask under water faucet. When cool, dilute to 1 liter with distilled water.

- 6.4 Sodium hypochlorite solution: Dilute 250 ml of a bleach solution containing 5.25% NaOCl (such as "Clorox") to 500 ml with distilled water. Available chlorine level should approximate 2 to 3%. Since "Clorox" is a proprietary product, its formulation is subject to change. The analyst must remain alert to detecting any variation in this product significant to its use in this procedure. Due to the instability of this product, storage over an extended period should be avoided.

- 6.5 Disodium ethylenediamine-tetraacetate (EDTA) (5%): Dissolve 50 g of EDTA (disodium salt) and approximately six pellets of NaOH in 1 liter of distilled water.

NOTE 2: On salt water samples where EDTA solution does not prevent precipitation of cations, sodium potassium tartrate solution may be used to advantage. It is prepared as follows:

- 6.5.1 Sodium potassium tartrate solution: 10% $\text{NaKC}_4\text{H}_4\text{O}_6 \cdot 4\text{H}_2\text{O}$. To 900 ml of distilled water add 100 g sodium potassium tartrate. Add 2 pellets of NaOH and a few boiling chips, boil gently for 45 minutes. Cover, cool, and dilute to 1 liter with ammonia-free distilled water. Adjust pH to 5.2 ± 0.05 with H_2SO_4 . After allowing to settle overnight in a cool place, filter to remove precipitate. Then add 1/2 ml Brij-35TM (available from Technicon Corporation) solution and store in stoppered bottle.
- 6.6 Sodium nitroprusside (0.05%): Dissolve 0.5 g of sodium nitroprusside in 1 liter of distilled water.
- 6.7 Stock solution: Dissolve 3.819 g of anhydrous ammonium chloride, NH_4Cl , dried at 105°C , in distilled water, and dilute to 1000 ml. 1.0 ml = 1.0 mg $\text{NH}_3\text{-N}$.
- 6.8 Standard Solution A: Dilute 10.0 ml of stock solution (6.7) to 1000 ml with distilled water. 1.0 ml = 0.01 mg $\text{NH}_3\text{-N}$.
- 6.9 Standard solution B: Dilute 10.0 ml of standard solution A (6.8) to 100.0 ml with distilled water. 1.0 ml = 0.001 mg $\text{NH}_3\text{-N}$.

- 6.10 Using standard solutions A and B, prepare the following standards in 100 ml volumetric flasks (prepare fresh daily):

<u>NH₃-N, mg/l</u>	<u>ml Standard Solution/100 ml</u>
	<u>Solution B</u>
0.01	1.0
0.02	2.0
0.05	5.0
0.10	10.0
	<u>Solution A</u>
0.20	2.0
0.50	5.0
0.80	8.0
1.00	10.0
1.50	15.0
2.00	20.0

NOTE 3: When saline water samples are analyzed, Substitute Ocean Water (SOW) should be used for preparing the above standards used for the calibration curve; otherwise, distilled water is used. If SOW is used, subtract its blank background response from the standards before preparing the standard curve.

<u>Substitute Ocean Water (SOW)</u>			
NaCl	24.53 g/l	NaHCO ₃	0.20 g/l
MgCl ₂	5.20 g/l	KBr	0.10 g/l
Na ₂ SO ₄	4.09 g/l	H ₃ BO ₃	0.03 g/l
CaCl ₂	1.16 g/l	SrCl ₂	0.03 g/l
KCl	0.70 g/l	NaF	0.003 g/l

7. Procedure

- 7.1 Since the intensity of the color used to quantify the concentration is pH dependent, the acid concentration of the wash water and the standard ammonia solutions should approximate that of the samples. For example, if the samples have been preserved with 2 ml conc. H₂SO₄/liter, the wash water and standards should also contain 2 ml conc. H₂SO₄/liter.
- 7.2 For a working range of 0.01 to 2.00 mg NH₃-N/l (AAI), set up the manifold as shown in Figure 1. For a working range of .01 to 1.0 mg NH₃-N/l (AAII), set up the manifold as shown in Figure 2. Higher concentrations may be accommodated by sample dilution.
- 7.3 Allow both colorimeter and recorder to warm up for 30 minutes. Obtain a stable baseline with all reagents, feeding distilled water through sample line.
- 7.4 For the AAI system, sample at a rate of 20/hr, 1:1. For the AAII use a 60/hr 6:1 cam with a common wash.

- 7.5 Arrange ammonia standards in sampler in order of decreasing concentration of nitrogen. Complete loading of sampler tray with unknown samples.
- 7.6 Switch sample line from distilled water to sampler and begin analysis.
8. Calculations
 - 8.1 Prepare appropriate standard curve derived from processing ammonia standards through manifold. Compute concentration of samples by comparing sample peak heights with standard curve.
9. Precision and Accuracy
 - 9.1 In a single laboratory (EMSL), using surface water samples at concentrations of 1.41, 0.77, 0.59 and 0.43 mg $\text{NH}_3\text{-N/l}$, the standard deviation was ± 0.005 .
 - 9.2 In a single laboratory (EMSL), using surface water samples at concentrations of 0.16 and 1.44 mg $\text{NH}_3\text{-N/l}$, recoveries were 107% and 99%, respectively.

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4. A wetting agent recommended and supplied by the Technicon Corporation for use in AutoAnalyzers.
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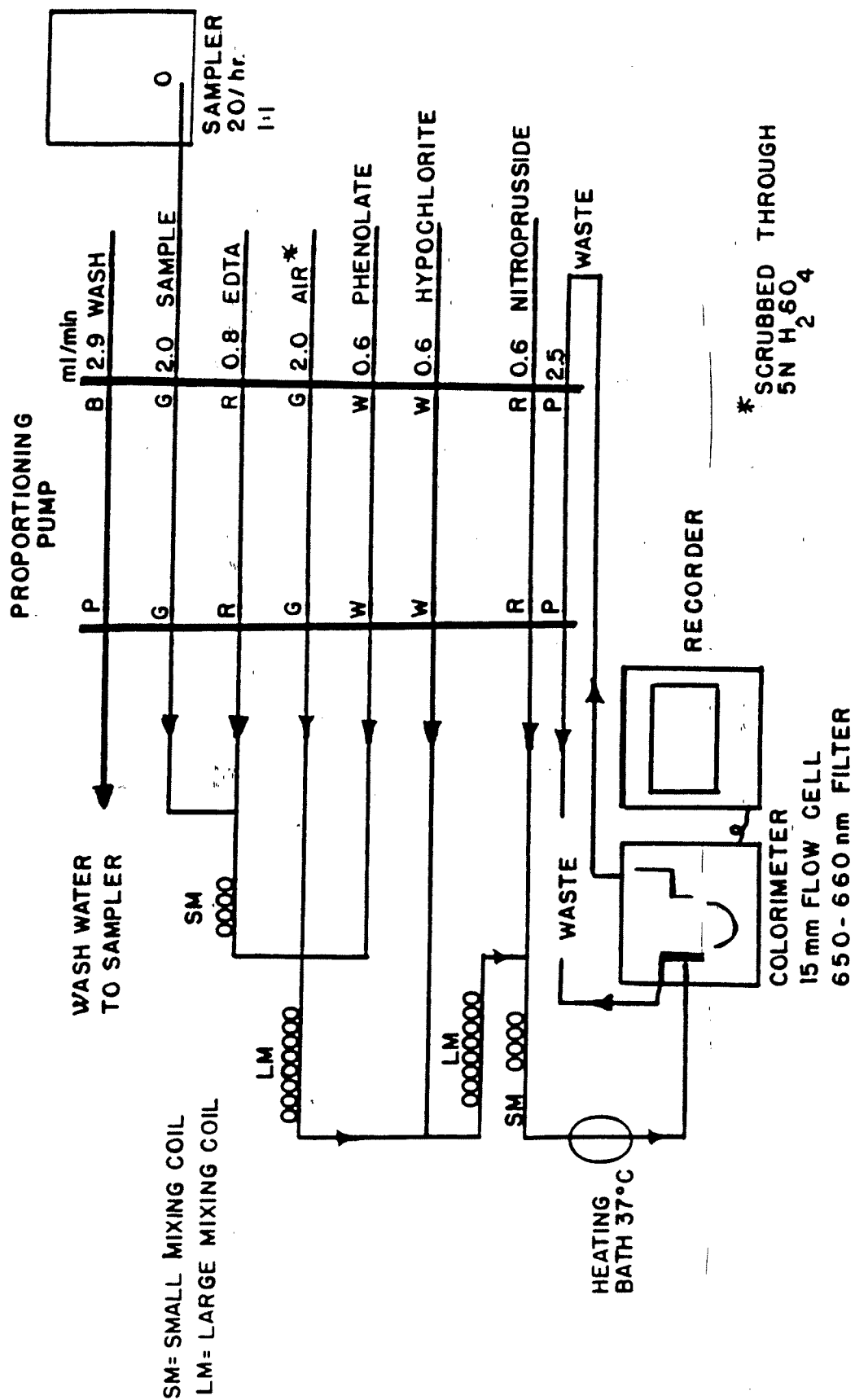


FIGURE 1 AMMONIA MANIFOLD AA I

TDS Method 160.1

SOP GE00188

003622

TOTAL DISSOLVED SOLIDS (TDS)**A. Summary**

This method describes the determination of total dissolved solids dried at 180C. Samples are filtered and then dried in a tared beaker. The increase in weight corresponds to the dissolved solids in the sample. Values are reported in mg/L.

B. Safety

Follow general safety practices when handling samples. Use caution when inserting or removing samples from the oven.

C. Apparatus

1. Glass fiber filters - Whatman 934-AH
2. Filtration apparatus
3. Drying oven at 180 +/- 2 C
4. 150 mL beakers
5. Erlenmeyer flasks.

D. Reagents

Sodium chloride (NaCl) - 10,000 mg/L: dissolve 10.00 g NaCl in 1000 mL deionized (DI) water.

E. Procedure

1. Label clean 150 mL beakers starting with 1, 2, 3 . . .
Don't forget to include beakers for QC.
2. Heat beakers at 180 +/- 2 C for 1 hour. Carefully remove from oven and store in desiccator. Desiccant chips must be blue. If chips are pink replace with new desiccant. Cool to room temperature before weighing.
3. Prepare the notebook.
 - a. Enter the date and your initials in the header.
 - b. Make nine columns. Label them: Log No., Client,

Description, Sample Vol (ml), Sample ID, Initial weight (g), Final weight (g), TDS (mg/L), and Comments.

- c. List the samples in the appropriate column. Be sure to include LCSs, blanks, duplicates and spikes per Section F. List the beaker numbers in the Sample ID column.
4. Weigh beakers on the analytical balance. Record value to 0.0001 gram in the Initial weight column.
5. Filter samples:
 - a. Rinse filter apparatus with deionized water (DI).
 - b. Seat the glass-fiber filter, wrinkled side up, and wash with 50 mL DI water. Discard wash.
 - c. Record the log number, client code, and sample description from the bottle in the notebook.
 - e. Measure sample in a 100ml graduated cylinder. Use 100 mL if the sample is clean. Adjust sample size if filtering takes longer than ten minutes. Record volume used in the notebook.
 - f. Filter sample into a clean erlenmeyer flask.
 - g. Rinse the graduated cylinder into the filter funnel.
 - h. Discard the filter. Carefully pour filtrate into preweighed, labelled beaker.
 - i. Repeat items (a) through (h) for all samples and QC.
6. Read the oven temperature after the oven door has been closed at least an hour. Record the temperature in the log book header. Examine the oven interior to make sure it is clean. A dirty oven will cause contamination of the samples. Place beakers inside. Put a note on the oven "Careful, TDS samples inside." This will prevent some unsuspecting soul from opening the oven door suddenly and spilling your samples.
7. Allow beakers to dry completely (overnight works well).
8. Remove the beakers from the oven to a desiccator. Allow to cool completely.
9. Weigh beakers and record in the final weight column in the notebook.
10. Place beakers in glassware area to be cleaned.

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F. Quality Control

1. The following quality control samples must be analyzed at a frequency of once every batch of twenty samples or less.
 - a. Method blanks - Filter 100 mL of DI water. The final weight of the blank beaker should be within +/- 0.0005g of the initial weight. If the blank value is greater than this contamination must be suspected. See your group leader to determine what course of action to take.
 - b. LCS - Filter 100 mL of DI water and 10 mL of 10,000 mg/L NaCl. This gives a theoretical value of 1000 mg/L.
 - c. Spike - the procedure described above under LCS is used to spike a sample (not DI).
 - d. Duplicate spike - the procedure is repeated on the same sample to assess precision of the method.
5. The temperature of the drying oven must be 180 +/- 2 C. If outside these limits, leave the oven door closed and come back in an hour. If the temperature has not changed, adjust the control to bring the temperature back within range.

G. Calculations and Data Review

1. Sample Calculations:

- A - Weight of beaker and sample in grams after drying
- B - Weight of beaker in grams
- C - Sample volume in ml
- D - Blank value

$$\text{TDS (mg/L)} = \frac{A - B}{C} \times 1,000,000$$

2. Calculate theoretical values and percent recoveries for spikes and LCSs and relative percent difference of the duplicate spikes as shown in the B C Analytical Quality Assurance Manual. Record this information in the Comments column. If outside current control limits, investigate the problem and take appropriate corrective action. Document your findings and action.

H. Interferences

1. Samples with high mineral content may require prolonged drying and rapid weighing to prevent absorption of

water from the ambient air.

2. Samples high in bicarbonate must be dried carefully and possibly longer to assure conversion to carbonate.
3. Excessive residue in the beaker may allow crusting which traps water in the sample. If more than 200 mg of residue is in the beaker repeat the analysis with a smaller sample size to assure accuracy. NOTE: Excessive residue may contaminate other samples.

I. Troubleshooting

Blank weight after drying and cooling should be within +/- 0.0005 grams of initial weight. Check for contamination if your value is different. It may be necessary to adjust your calculations if the blank value is higher than this. Consult your group leader for instructions.

J. References

1. Standard Methods for the Examination of Water and Wastewater; APHA-AWWA-WPCF, Sixteenth Edition, 1985; Method 209 B, pg 95.
2. Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 160.1.

Reviewed and approved
T. Kirk 10/15/93
Issued _____

Turbidity Method 180.1

SOP GE01489.G

003627

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SOP# GE01489.G
Tier 3 Rev. 01/19/90
Page 1 of 3

TURBIDITY

A. Summary

The Nephelometric method for turbidity is based upon a comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension. This method is applicable to drinking waters, surface waters, groundwaters, and saline waters. Turbidity in water is caused by suspended matter, such as clay, silt, finely divided organic and inorganic matter, soluble colored organic compounds, plankton and other microscopic organisms. Formazin polymer is used as the turbidity reference suspension for water because it is more reproducible than other types of standards.

B. Safety

Follow general safety practices when handling samples (wear gloves and safety glasses).

C. Apparatus

1. Turbidimeter, the Hach model 2100 A, or 18900, or equivalent.
2. Sample cell, of clean, clear, colorless glass.
3. Graduated cylinders (needed for dilutions).

D. Reagents

1. Turbidity-free water (milli-Q water, filtered Nanopure, or equivalent).
2. Formazin stock solution. Commercially available at 4000 NTU concentration. Discard and replace after one year.
3. Standard formazin turbidity suspensions: at concentrations from 0.5 NTU to 180 NTU. Prepare by serial dilution of the stock solution. Make fresh daily.
4. Gelex secondary turbidity suspensions: at concentrations from 0.5 NTU to 180 NTU. Commercially available from Hach.

E. Procedure

1. Prepare the notebook. Put the date, the analyst's initials, the instrument used, the method and the batch number at the top of the page. Make columns for log number, sample identification, client ID, dilution, turbidity and COMMENTS.
2. Samples may be stored in a refrigerator at 4 degrees C for up to 48 hours before analysis.
3. Allow all samples and standards to come to room temperature.
4. Use the formazin turbidity suspensions to calibrate the turbidimeter at least once per month. Immediately determine the turbidities of the Gelex secondary turbidity suspensions and record the turbidities on the vials and in the COMMENTS column of the notebook.
5. Run an LCS on a daily basis with the Gelex secondary turbidity suspensions. Use one concentration for each range available on the instrument. The concentrations chosen must be 80 to 90% of scale. The readings must be within 5% of the expected value. If the readings deviate by more than 5% from the values recorded in step (4), recalibrate the instrument with the formazin turbidity suspensions.
6. Run the blank:

Pour the turbidity-free water into the sample cell, wipe the tube and record the NTU reading.
7. Run the sample:
 - a. For samples with turbidity less than the dynamic range of the instrument, thoroughly shake the sample. Wait until air bubbles disappear, then pour the sample into the sample cell. Wipe the cell and read the turbidity directly from the instrument scale.
 - c. For samples with turbidity greater than the dynamic range of the instrument, shake the sample thoroughly. Pipet a known volume into a graduated cylinder and dilute to volume with turbidity-free water. Mix well and pour into the sample cell. Wipe the cell and read the turbidity. Record the turbidity and the dilution correction in the notebook.

F. Quality Control

1. Run a blank and a set of duplicates every ten samples, or every batch, whichever is more frequent. No spike is

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required.

2. Run an LCS on a daily basis with the Gelex secondary turbidity suspensions. Use one concentration for each range available on the instrument. The concentrations chosen must be 80 to 90% of scale. The readings must be within 5% of the expected value.

G. Interferences

Dirty glassware, air bubbles, the effects of vibrations that disturb the surface visibility of the sample. The presence of floating debris and coarse sediments which settle out rapidly and water color due to dissolved substances that absorb light, these will give low turbidity readings.

H. Calculations and Data Review

Calculations are required only when a sample has been diluted:

$$\text{Turb (in NTU)} = \frac{A \times B}{C}$$

where: A = NTU reading from instrument
B = final volume of solution (in mL)
C = volume of sample taken for dilution (in mL)

I. Troubleshooting

1. Discard sample cells if they become scratched or etched.
2. Never handle sample cells where light passes through them.

J. References

1. Standard Methods for the Examination of Water and Wastewater, 16th edition, Method 214A
2. Methods for Chemical Analysis of Water and Wastes (EPA 600/4-79-020), Method 180.1

Reviewed and approved
REVIEWER / 01/19/90
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Alkalinity Method 310.1

ALKALINITY

Method 310.1 (Titrimetric, pH 4.5)

STORET NO. 00410

1. Scope and Application
 - 1.1 This method is applicable to drinking, surface, and saline waters, domestic and industrial wastes.
 - 1.2 The method is suitable for all concentration ranges of alkalinity; however, appropriate aliquots should be used to avoid a titration volume greater than 50 ml.
 - 1.3 Automated titrimetric analysis is equivalent.
2. Summary of Method
 - 2.1 An unaltered sample is titrated to an electrometrically determined end point of pH 4.5. The sample must not be filtered, diluted, concentrated, or altered in any way.
3. Comments
 - 3.1 The sample should be refrigerated at 4°C and run as soon as practical. Do not open sample bottle before analysis.
 - 3.2 Substances, such as salts of weak organic and inorganic acids present in large amounts, may cause interference in the electrometric pH measurements.
 - 3.3 For samples having high concentrations of mineral acids, such as mine wastes and associated receiving waters, titrate to an electrometric endpoint of pH 3.9, using the procedure in:
Annual Book of ASTM Standards, Part 31, "Water", p 115, D-1067, Method D, (1976).
 - 3.4 Oil and grease, by coating the pH electrode, may also interfere, causing sluggish response.
4. Apparatus
 - 4.1 pH meter or electrically operated titrator that uses a glass electrode and can be read to 0.05 pH units. Standardize and calibrate according to manufacturer's instructions. If automatic temperature compensation is not provided, make titration at 25 ± 2°C.
 - 4.2 Use an appropriate sized vessel to keep the air space above the solution at a minimum. Use a rubber stopper fitted with holes for the glass electrode, reference electrode (or combination electrode) and buret.
 - 4.3 Magnetic stirrer, pipets, flasks and other standard laboratory equipment.
 - 4.4 Burets, Pyrex 50, 25 and 10 ml.
5. Reagents
 - 5.1 Sodium carbonate solution, approximately 0.05 N: Place 2.5 ± 0.2 g (to nearest mg) Na₂CO₃ (dried at 250°C for 4 hours and cooled in desiccator) into a 1 liter volumetric flask and dilute to the mark.

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- 5.2 Standard acid (sulfuric or hydrochloric), 0.1 N: Dilute 3.0 ml conc H_2SO_4 or 8.3 ml conc HCl to 1 liter with distilled water. Standardize versus 40.0 ml of 0.05 N Na_2CO_3 solution with about 60 ml distilled water by titrating potentiometrically to pH of about 5. Lift electrode and rinse into beaker. Boil solution gently for 3–5 minutes under a watch glass cover. Cool to room temperature. Rinse cover glass into beaker. Continue titration to the pH inflection point. Calculate normality using:

$$N = \frac{A \times B}{53.00 \times C}$$

where:

A = g Na_2CO_3 weighed into 1 liter

B = ml Na_2CO_3 solution

C = ml acid used to inflection point

- 5.3 Standard acid (sulfuric or hydrochloric), 0.02 N: Dilute 200.0 ml of 0.1000 N standard acid to 1 liter with distilled water. Standardize by potentiometric titration of 15.0 ml 0.05 N Na_2CO_3 solution as above.

6. Procedure

6.1 Sample size

- 6.1.1 Use a sufficiently large volume of titrant (> 20 ml in a 50 ml buret) to obtain good precision while keeping volume low enough to permit sharp end point.
- 6.1.2 For < 1000 mg CaCO_3 /l use 0.02 N titrant
- 6.1.3 For > 1000 mg CaCO_3 /l use 0.1 N titrant
- 6.1.4 A preliminary titration is helpful.

6.2 Potentiometric titration

- 6.2.1 Place sample in flask by pipetting with pipet tip near bottom of flask
- 6.2.2 Measure pH of sample
- 6.2.3 Add standard acid (5.2 or 5.3), being careful to stir thoroughly but gently to allow needle to obtain equilibrium.
- 6.2.4 Titrate to pH 4.5. Record volume of titrant.

6.3 Potentiometric titration of low alkalinity

- 6.3.1 For alkalinity of < 20 mg/l titrate 100–200 ml as above (6.2) using a 10 ml microburet and 0.02 N acid solution (5.3).
- 6.3.2 Stop titration at pH in range of 4.3–4.7, record volume and exact pH. Very carefully add titrant to lower pH exactly 0.3 pH units and record volume.

7. Calculations

7.1 Potentiometric titration to pH 4.5

$$\text{Alkalinity, mg/l CaCO}_3 = \frac{A \times N \times 50.000}{\text{ml of sample}}$$

where:

A = ml standard acid

N = normality standard acid

7.2 Potentiometric titration of low alkalinity:

$$\text{Total alkalinity, mg/l CaCO}_3 = \frac{(2B - C) \times N \times 50,000}{\text{ml of sample}}$$

where:

B = ml titrant to first recorded pH

C = total ml titrant to reach pH 0.3 units lower

N = normality of acid

8. Precision and Accuracy

8.1 Forty analysts in seventeen laboratories analyzed synthetic water samples containing increments of bicarbonate, with the following results:

<u>Increment as</u> <u>Alkalinity</u> <u>mg/liter, CaCO₃</u>	<u>Precision as</u> <u>Standard Deviation</u> <u>mg/liter, CaCO₃</u>	<u>Bias,</u> <u>%</u>	<u>Accuracy as</u> <u>Bias,</u> <u>mg/l, CaCO₃</u>
8	1.27	+10.61	+0.85
9	1.14	+22.29	+2.0
113	5.28	- 8.19	-9.3
119	5.36	- 7.42	-8.8

(FWPCA Method Study I, Mineral and Physical Analyses)

8.2 In a single laboratory (EMSL) using surface water samples at an average concentration of 122 mg CaCO₃/l, the standard deviation was ± 3 .

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1. Standard Methods for the Examination of Water and Wastewater, 14th Edition, p 278, Method 403, (1975).
2. Annual Book of ASTM Standards, Part 31, "Water", p 113, D-1067, Method B, (1976).

Anions.IC Method 300.0

003635



APPROVED BY EPA
FOR CHLORIDE,
NITRATE AND
SULFATE ANALYSIS
IN DRINKING WATER

Test Method

The Determination of Inorganic Anions in Water by Ion Chromatography— Method 300.0

James W. O'Dell, John D. Pfaff, Morris E. Gales, and Gerald D. McKee

1. Scope and Application

1.1 This method covers the determination of the following inorganic anions.

Analyte	Storet No.	
	Total	Dissolved
Chloride	00940	—
Fluoride	00951	00950
Nitrate-N	00620	—
Nitrite-N	00615	—
Ortho-Phosphate-P	—	00671
Sulfate	00945	—

1.2 This is an ion chromatographic (IC) method applicable to the determination of the anions listed above in drinking water, surface water, and mixed domestic and industrial wastewater.

1.3 The Method Detection Limit (MDL, defined in Section 13) for the above analytes is listed in Table 1. The MDL for a specific matrix may differ from those listed, depending upon the nature of the sample.

1.4 This method is restricted to use by or under the supervision of analysts experienced in the use of ion chromatography and in the interpretation of the resulting ion chromatogram. Each analyst must demonstrate the ability to generate acceptable results with this method, using the procedure described in Section 10.2.

1.5 When this method is used to analyze unfamiliar samples for any of the above anions, anion identification should be supported by the addition of spike solutions covering the anions of interest. The spike procedure is described in Section 11.6.

2. Summary of Method

2.1 A small volume of sample, typically 2 to 3 mL, is introduced into an ion chromatograph. The anions of interest are separated and measured, using a system comprised of a guard column, separator column, suppressor column, and conductivity detector.

3. Definitions

3.1 Stock standard solution — a concentrated solution containing a certified standard that is a method analyte. Stock standard solutions are used to prepare secondary standard solutions.

3.2 Calibration standards — a solution of analytes prepared in the laboratory from stock standard solutions and diluted as needed to prepare aqueous calibration solutions.

3.3 Quality control check sample — a solution containing known concentrations of analytes, prepared by a laboratory other than the laboratory performing the analysis. The analyzing laboratory uses this solution to demonstrate that it can

obtain acceptable identifications and measurements with a method.

3.4 Performance evaluation sample — a solution of method analytes distributed by the Quality Assurance Branch (QAB), Environmental Monitoring and Support Laboratory (EMSL-Cincinnati), USEPA, Cincinnati, Ohio, to multiple laboratories for analysis. A volume of the solution is added to a known volume of reagent water and analyzed with procedures used for samples. Results of analyses are used by the QAB to determine statistically the accuracy and precision that can be expected when a method is performed by a competent analyst. Analyte true values are unknown to the analyst.

3.5 Laboratory control standards — a solution of analytes prepared in the laboratory by adding appropriate volumes of the stock standard solutions to reagent water.

3.6 Laboratory duplicates — two aliquots of the same sample that are treated exactly the same throughout laboratory analytical procedures. Analyses of laboratory duplicates indicate precision associated with laboratory procedures but not the sample collection, preservation, or storage procedures.

3.7 Field duplicates — two samples taken at the same time and place under identical circumstances and treated exactly the same throughout field and laboratory procedures. Analyses of field duplicates indicate the precision associated with sample collection, preservation and storage, as well as with laboratory procedures.

4. Interferences

4.1 Interferences can be caused by substances with retention times that are similar to and overlap those of the anion of interest. Large amounts of an anion can interfere with the peak resolution of an adjacent anion. Sample dilution and/or spiking can be used to solve most interference problems.

4.2 The water dip or negative peak that elutes near and can interfere with the fluoride peak can be eliminated by the addition of the equivalent of 1 mL of concentrated eluent (7.3 100X) to 100 mL of each standard and sample.

4.3 Method interferences may be caused by contaminants in the reagent water, reagents, glassware, and other sample processing

apparatus that lead to discrete artifacts or elevated baseline in ion chromatograms.

4.4 Samples that contain particles larger than 0.45 microns and reagent solutions that contain particles larger than 0.20 microns require filtration to prevent damage to instrument columns and flow systems.

5. Safety

5.1 Normal, accepted laboratory safety practices should be followed during reagent preparation and instrument operation. No known carcinogenic materials are used in this method.

6. Apparatus and Materials

6.1 Balance — Analytical, capable of accurately weighing to the nearest 0.0001 g.

6.2 Ion chromatograph — Analytical system complete with ion chromatograph and all required accessories including syringes, analytical columns, compressed air, detector, and stripchart recorder. A data system is recommended for peak integration.

6.2.1 Anion guard column: 4 x 50 mm, Dionex P/N 030825, or equivalent.

6.2.2 Anion separator column: 4 x 250 mm, Dionex P/N 030827, or equivalent.

6.2.3 Anion suppressor column: fiber, Dionex P/N 35350, or equivalent.

6.2.4 Detector — Conductivity cell: approximately 6 μ L volume. Dionex, or equivalent.

7. Reagents and Consumable Materials

7.1 Sample bottles: Glass or polyethylene of sufficient volume to allow replicate analyses of anions of interest.

7.2 Reagent water: Distilled or deionized water, free of the anions of interest. Water should contain particles no larger than 0.20 microns.

7.3 Eluent solution: Sodium bicarbonate (CAS RN 144-55-8) 0.003 M, sodium carbonate (CAS RN 497-19-8) 0.0024M Dissolve 1.0081 g sodium bicarbonate (NaHCO_3) and 1.0176 g of sodium carbonate (Na_2CO_3) in reagent water and dilute to 4 liters.

7.4 Regeneration solution (fiber suppressor): Sulfuric acid (CAS RN 7664-93-9) 0.025N. Dilute 2.8 mL conc. sulfuric acid (H_2SO_4) to 4 liters with reagent water.

7.5 Stock standard solutions, 1000 mg/L (1 mg/mL): Stock standard solutions may be purchased as certified solutions or prepared from ACS reagent grade materials (dried at 105°C for 30 min.) as listed below.

7.5.1 Chloride (Cl^-) 1000 mg/L: Dissolve 1.6485 g sodium chloride (NaCl , CAS RN 7647-14-5) in reagent water and dilute to 1 liter.

7.5.2 Fluoride (F^-) 1000 mg/L: Dissolve 2.2100 g sodium fluoride (NaF , CAS RN 7681-49-4) in reagent water and dilute to 1 liter.

7.5.3 Nitrate (NO_3^- -N) 1000 mg/L: Dissolve 6.0679 g sodium nitrate (NaNO_3 , CAS RN 7531-99-4) in reagent water and dilute to 1 liter.

7.5.4 Nitrite (NO_2^- -N) 1000 mg/L: Dissolve 4.9257 g sodium nitrite (NaNO_2 , CAS RN 7632-00-0) in reagent water and dilute to 1 liter.

7.5.5 Phosphate (PO_4^{3-} -P) 1000 mg/L: Dissolve 4.3937 g potassium phosphate (KH_2PO_4 , CAS RN 7778-77-0) in reagent water and dilute to 1 liter.

7.5.6 Sulfate (SO_4^{2-}) 1000 mg/L: Dissolve 1.8141 g potassium sulfate (K_2SO_4 , CAS RN 7778-80-5) in reagent water and dilute to 1 liter.

7.5.7 Stability of standards: Stock standards (7.5) are stable for at least one month when stored at 4°C. Dilute working standards should be prepared weekly, except those that contain nitrite and phosphate should be prepared fresh daily.

8. Sample Collection, Preservation and Storage

8.1 Samples should be collected in scrupulously clean glass or polyethylene bottles.

8.2 Sample preservation and holding times for the anions that can be determined by this method are as follows:

Analyte	Preservation	holding Time
Chloride	None required	28 days
Fluoride	None required	28 days
Nitrate-N	Cool to 4°C	48 hours
Nitrite-N	Cool to 4°C	48 hours
O-Phosphate-P	Filter and cool to 4°C	48 hours
Sulfate	Cool to 4°C	28 days

8.3 The method of preservation and the holding time for samples analyzed by this method are determined by the anions of interest. In a given sample, the anion that requires the most preservation treatment and the shortest holding time will determine the preservation treatment and holding time for the total sample.

9. Calibration and Standardization

9.1 Establish ion chromatographic operating parameters equivalent to those indicated in Table 1.

9.2 For each analyte of interest, prepare calibration standards at a minimum of three concentration levels and a blank by adding accurately measured volumes of one or more stock standards (7.5) to a volumetric flask and diluting to volume with reagent water. If the working range exceeds the linear range of the system, a sufficient number of standards must be analyzed to allow an accurate calibration curve to be established. One of the standards should be representative of a concentration near, but above, the method detection limit if the system is operated on an applicable attenuator range. The other standards should correspond to the range of concentrations expected in the sample or should define the working range of the detector. Unless the attenuator range settings are proven to be linear, each setting must be calibrated individually.

9.3 Using injections of 0.1 to 1.0 mL (determined by injection loop volume) of each calibration standard, tabulate peak height or area responses against the concentration. The results are used to prepare a calibration curve for each analyte. During this procedure, retention times must be recorded. The retention time is inversely proportional to the concentration.

9.4 The working calibration curve must be verified on each working day, or whenever the anion eluent is changed, and after every 20 samples. If the response or retention time for any analyte varies from the expected values by more than $\pm 10\%$, the test must be repeated, using fresh calibration standards. If the results are still more than $\pm 10\%$, an entire new calibration curve must be prepared for that analyte.

9.5 Nonlinear response can result when the separator column capacity is exceeded (overloading). Maximum

column loading (all anions) should not exceed about 400 ppm.

10. Quality Control

10.1 Each laboratory using this method should have a formal quality control program. The minimum requirements of this program consist of an initial demonstration of laboratory capability (10.2) and the analysis of spiked samples as a continuing check on performance. The laboratory should maintain performance records to define the quality of data that are generated.

10.1.1 In recognition of the rapid advances occurring in chromatography, the analyst is permitted certain options to improve the separations or lower the cost of measurements. Each time such modifications to the method are made, the analyst is required to repeat the procedure in Section 10.2.

10.1.2 The laboratory should spike and analyze a minimum of 10% of all samples to monitor continuing laboratory performance. Field and laboratory duplicates should also be analyzed.

10.2 Before performing any analyses, the analyst should demonstrate the ability to generate acceptable accuracy and precision with this method, using a laboratory control standard.

10.2.1 Select a representative spike concentration for each analyte to be measured. Using stock standards, prepare a quality control check sample concentrate in reagent water 100 times more concentrated than the selected concentrations.

10.2.2 Using a pipet, add 1.00 mL of the check sample concentrate (10.2.1) to each of a minimum of four 100-mL aliquots of reagent water. Analyze the aliquots according to the procedure in Section 11.

10.2.3 Calculate the average percent recovery (R), and the standard deviation(s) of the percent recovery, for the results.

10.2.4 Using the appropriate data from Table 2, determine the recovery and single operator precision expected for the method, and compare these results to the values calculated in Section 10.2.3. If the data are not comparable within control limits (10.3.1), review potential problem areas and repeat the test.

10.3 The analyst must calculate method performance criteria and define the performance of the laboratory for each spike concentration of analyte being measured.

10.3.1 Calculate upper and lower control limits for method performance as follows:

$$\text{Upper Control Limit (UCL)} = R + 3s$$

$$\text{Lower Control Limit (LCL)} = R - 3s$$

where R and s are calculated as in Section 10.2.3. The UCL and LCL can be used to construct control charts that are useful in observing trends in performance.

10.4 The laboratory should develop and maintain separate accuracy statements of laboratory performance for water and wastewater samples. An accuracy statement for the method is defined as $R \pm s$. The accuracy statement should be developed by the analyses of four aliquots of water or wastewater, as described in Section 10.2.2, followed by the calculation of R and s.

10.5 Before processing any samples, the analyst must demonstrate through the analysis of an aliquot of reagent water that all glassware and reagent interferences are under control. Each time there is a change in reagents, a laboratory reagent blank must be processed as a safeguard against laboratory contamination.

10.6 It is recommended that the laboratory adopt additional quality assurance practices for use with this method. The specific practices that are most productive depend upon the needs of the laboratory and the nature of the samples. Field duplicates may be analyzed to monitor the precision of the sampling technique. When doubt exists over the identification of a peak in the chromatogram, confirmatory techniques such as sample dilution and spiking, must be used. Whenever possible, the laboratory should perform analysis of quality control check samples and participate in relevant performance evaluation sample studies.

11. Procedure

11.1 Table 1 summarizes the recommended operating conditions for the ion chromatograph. Included in this table are estimated retention times that can be achieved by this method. Other columns, chromatographic conditions, or

detectors may be used if the requirements of Section 10.2 are met.

11.2 Check system calibration daily and, if required, recalibrate as described in Section 9.

11.3 Load and inject a fixed amount of well mixed sample. Flush injection loop thoroughly, using each new sample. Use the same size loop for standards and samples. Record the resulting peak size in area or peak height units. An automated constant volume injection system may also be used.

11.4 The width of the retention time window used to make identifications should be based upon measurements of actual retention time variations of standards over the course of a day. Three times the standard deviation of a retention time can be used to calculate a suggested window size for a compound. However, the experience of the analyst should weigh heavily in the interpretation of chromatograms.

11.5 If the response for the peak exceeds the working range of the system, dilute the sample with an appropriate amount of reagent water and reanalyze.

11.6 If the resulting chromatogram fails to produce adequate resolution, or if identification of specific anions is questionable, spike the sample with an appropriate amount of standard and reanalyze.

Note: Retention time is inversely proportional to concentration. Nitrate and sulfate exhibit the greatest amount of change, although all anions are affected to some degree. In some cases, this peak migration can produce poor resolution or misidentification.

12. Calculation

12.1 Prepare separate calibration curves for each anion of interest by plotting peak size in area, or peak height units of standards against concentration values. Compute sample concentration by comparing sample peak response with the standard curve.

12.2 Report results in mg/L.

13. Precision and Accuracy — Method Detection Limit

13.1 The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the value is above

zero. The MDL concentrations listed in Table 1 were obtained using reagent water.

13.2 Single-operator accuracy and precision for reagent, drinking and surface water, and mixed domestic and industrial wastewater are listed in Table 2.

14. References

14.1 Annual Book of ASTM Standards, Part 31 Water, proposed test method for "Anions in Water by Ion Chromatography," p. 1485-1492 (1982).

14.2 Standard Methods for the Examination of Water and Wastewater, Method 400Z, "Anions by Ion Chromatography" proposed for the 16th Edition of Standard Methods.

14.3 Dionex, IC 16 operation and maintenance manual, PN 30579, Dionex Corp., Sunnyvale, California 94086.

14.4 Method detection limit (MDL) as described in "Trace Analyses for Wastewater," J. Glaser, D. Foerst, G. McKee, S. Quave, W. Budde, *Environmental Science and Technology*, Vol. 15, Number 12, p. 1426, December 1981.

Table 1. Chromatographic Conditions and Method Detection Limits in Reagent Water

Analyte	Retention ¹ Time (Min)	Relative Retention Time	Method ² Detection Limit mg/L
Fluoride	1.2	1.0	0.005
Chloride	3.4	2.8	0.015
Nitrite-N	4.5	3.8	0.004
O-Phosphate-P	9.0	7.5	0.061
Nitrate-N	11.3	9.4	0.013
Sulfate	21.4	17.8	0.206

Standard Conditions:

Columns — As specified in 6.2 Sample Loop — 100 µL
 Detector — As specified in 6.2 Pump Volume — 2.30 mL/Min
 Eluent — As specified in 7.3

¹ Concentrations of mixed standard (mg/L)

Fluoride 3.0 O-Phosphate-P 9.0
 Chloride 4.0 Nitrate-N 30.0
 Nitrite-N 10.0 Sulfate 50.0

² MDL calculated from data obtained using an attenuator setting of 1 µMHO full scale. Other settings would produce an MDL proportional to their value.

Table 2. Single-Operator Accuracy and Precision

Analyte	Sample Type	Spike (mg/L)	Number of Replicates	Mean Recovery %	Standard Deviation (mg/L)
Chloride	RW	0.050	7	97.7	0.0047
	DW	10.0	7	98.2	0.289
	SW	1.0	7	105.0	0.139
	WW	7.5	7	82.7	0.445
Fluoride	RW	0.24	7	103.1	0.0009
	DW	9.3	7	87.7	0.075
	SW	0.50	7	74.0	0.0038
	WW	1.0	7	92.0	0.011
Nitrate-N	RW	0.10	7	100.9	0.0041
	DW	31.0	7	100.7	0.356
	SW	0.50	7	100.0	0.0058
	WW	4.0	7	94.3	0.058
Nitrite-N	RW	0.10	7	97.7	0.0014
	DW	19.6	7	103.3	0.150
	SW	0.51	7	88.2	0.0053
	WW	0.52	7	100.0	0.018
O-Phosphate-P	RW	0.50	7	100.4	0.019
	DW	45.7	7	102.5	0.386
	SW	0.51	7	94.1	0.020
	WW	4.0	7	97.3	0.04
Sulfate	RW	1.02	7	102.1	0.066
	DW	98.5	7	104.3	1.475
	SW	10.0	7	111.6	0.709
	WW	12.5	7	134.9	0.466

RW = Reagent Water SW = Surface Water
 DW = Drinking Water WW = Wastewater

Standards Documentation

003641

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:27:38 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: NITRATE LCS
Manufacturer: SPEX
Expiration Date: 03/15/94
Received by: Leena Joshi
Type: Lab Control Standard

Reference #:GE9310006
Lot #:0791R
Date Opened: 09/29/93
Date received: 08/11/93

Traceable Source: NIST SRM 3185
Total Volume: 100 ML

Solvent:
Certificate (Y/N): Y

Component

Concentration Units

Nitrate as NO3 (300.0)

1,000.0000 MG/L

Disposal Method: DRAIN
Hazard Class:

Disposal Date: 03/15/94

003642

End of Report

: LIST STDS -- RECEIVED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:27:38 13 DEC 1993 - P. 1 :

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: NITRITE LCS
Manufacturer: SPEX
Expiration Date: 02/15/93
Received by: Leena Joshi
Type: Lab Control Standard

Reference #:GE9310010
Lot #:5-194AS
Date Opened: 09/29/93
Date received: 08/11/93

Traceable Source: NIST SRM 3181
Total Volume: 100 ML

Solvent:
Certificate (Y/N): Y

Component

Concentration Units

Nitrite (300.0)

1,000.0000 MG/L

Disposal Method: DRAIN
Hazard Class:

Disposal Date: 02/15/93

003643

End of Report

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:27:38 13 DEC 1993 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: SULFATE LCS
Manufacturer: SPEX
Expiration Date: 02/15/93
Received by: Leena Joshi
Type: Lab Control Standard

Reference #:GE9310009
Lot #:5-144AS
Date Opened: 09/29/93
Date received: 08/11/93

Traceable Source: NIST SRM 3181
Total Volume: 100 ML

Solvent:
Certificate (Y/N): Y

Component

Concentration Units

Anions by IC (SO4-300.0)

1,000.0000 MG/L

Disposal Method: DRAIN
Hazard Class:

Disposal Date: 02/15/93

003644

End of Report

: LIST STDS -- RECEIVED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:27:39 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: CHLORIDE LCS
Manufacturer: SPEX
Expiration Date: 02/15/94
Received by: Emerlinda Strickler
Type: Lab Control Standard

Reference #:GE9308021
Lot #:5-142AS
Date Opened: 08/18/93
Date received: 08/11/93

Traceable Source: Y
Total Volume: 100 ML

Solvent: WATER
Certificate (Y/N): Y

Component

Concentration Units

Chloride (325.3)
Anions by IC (Cl-300.0)

1,000.0000 PPM
1,000.0000 PPM

Disposal Method: DRAAIN
Hazard Class:

Disposal Date: 05/15/94

003645

End of Report

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:27:39 13 DEC 1993 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ANIONS SPIKE
Manufacturer: DIONEX
Expiration Date: 12/31/94
Received by: JOSEFINO VILLALOBOS
Type: Spike Solution

Reference #:GE9303022
Lot #:920529
Date Opened: 12/31/92
Date received: 12/31/92

Traceable Source:
Total Volume: 100 ML

Solvent:
Certificate (Y/N):

Component

Concentration	Units
30.0000	MG/L
20.0000	MG/L
100.0000	MG/L
150.0000	MG/L
150.0000	MG/L

Anions by IC (Cl-300.0)
Fluoride (300.0)
Nitrate as NO3 (300.0)
Anions by IC (SO4-300.0)
o-Phosphate as PO4 (300.0)

Disposal Method:
Hazard Class:

Disposal Date:

003646

End of Report

: LIST STDS -- RECEIVED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:27:39 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: NITROGEN STANDARD
Manufacturer: RICCA
Expiration Date: 04/21/94
Received by: Alma Jesena
Type: Lab Control Standard

Reference #:GE9304026
Lot #:JI88
Date Opened:
Date received: 04/26/93

Traceable Source:
Total Volume: 118 ML

Solvent:
Certificate (Y/N):

Component

Concentration Units

Nitrite (as N)

250.0000 MG/L

Disposal Method: DRAIN
Hazard Class:

Disposal Date: 04/21/94

: LIST STDS -- RECEIVED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:27:39 13 DEC 1993 - P. 1 :

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: NO3 STD. & SPK.
Manufacturer: RICCA
Expiration Date: 02/28/94
Received by: Alma Jesena
Type: Calibration Standard,
Spike Solution

Reference #: GE9303024
Lot #: G277
Date Opened: 03/11/93
Date received: 03/11/93

Traceable Source:
Total Volume: 473 ML

Solvent:
Certificate (Y/N):

Component

Concentration Units

Nitrate (as NO3)

1,000.0000 MG/L

Nitrate (as N)

1,000.0000 MG/L

Disposal Method:
Hazard Class:

Disposal Date:

003648

End of Report

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:27:39 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: NITROGEN STANDARD
Manufacturer: RICCA
Expiration Date: 04/21/94
Received by: Alma Jesena
Type: Lab Control Standard

Reference #:GE9304026
Lot #:JI88
Date Opened:
Date received: 04/26/93

Traceable Source:
Total Volume: 118 ML

Solvent:
Certificate (Y/N):

Component

Concentration Units

Nitrite (as N)

250.0000 MG/L

Disposal Method: DRAIN
Hazard Class:

Disposal Date: 04/21/94

003649

End of Report

: LIST STDS -- RECEIVED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:27:39 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: SO4 STD
Manufacturer: RICCA
Expiration Date: 06/01/94
Received by: SAMINA HUSSAIN
Type: Calibration Standard,
Spike Solution

Reference #:GE9301045
Lot #:D017
Date Opened: 01/30/93
Date received: 01/29/93

Traceable Source:
Total Volume: 473 ML

Solvent:
Certificate (Y/N):

Component

Concentration Units

Sulfate (375.4)

1,000.0000 MG/L

Disposal Method: DRAIN
Hazard Class:

Disposal Date: 11/02/93

003650

End of Report

: LIST STDS -- RECEIVED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:27:39 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: CL STANDARD
Manufacturer: BANCO
Expiration Date: 05/22/94
Received by: SAMINA HUSSAIN
Type: Calibration Standard

Reference #:GE9308010
Lot #:E3-06
Date Opened: 08/05/93
Date received: 07/22/93

Traceable Source:
Total Volume: 500 ML

Solvent:
Certificate (Y/N):

Component

Concentration Units

Chloride (325.3)

Disposal Method: DRAIN
Hazard Class:

Disposal Date:

003651

End of Report

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:27:39 13 DEC 1993 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: AMMONIA LCS
Manufacturer: ORION
Expiration Date: 06/04/94
Received by: Alma Jesena
Type: Lab Control Standard

Reference #: GE9306017
Lot #: 951007
Date Opened: 06/04/93
Date received: 06/04/93

Traceable Source:
Total Volume: 475 ML

Solvent:
Certificate (Y/N):

Component

Concentration	Units
1,000.0000	PPM
1,000.0000	PPM

Ammonia (350.1)
Kjeldahl Nitrogen (351.2)

Disposal Method: DRAIN
Hazard Class:

Disposal Date: 06/04/94

003652

End of Report

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:27:39 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: NH₃-N/TKN STD
Date Prepared: 11/04/93
Prepared by: Leena Joshi
Type: Spike Solution

Reference #: GE9311014
Expiration Date: 11/04/94
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
DI			

Source	Amount	Component	Final Concentration
GE9311013	3.8190 G	Ammonia (350.1) Kjeldahl Nitrogen (351.2)	

Disposal Method: DRAIN
Verification Date: 11/04/93
Hazard Class:

Disposal Date: 11/04/94

003653

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:32:09 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ALKALINITY LCS
Date Prepared: 03/25/93
Prepared by: Emerlinda Strickler
Type: Lab Control Standard

Reference #:GE9303033
Expiration Date: 03/25/93
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
NANOPURE WATER			

Source	Amount	Component	Final Concentration
GE9301040	1.0000 G	Hydroxide Alk (as CaCO ₃)	0.0500 50
		Bicarbonate Alk (as CaCO ₃)	0.0500 50
		Carbonate Alk (as CaCO ₃)	0.0500 50
		Total Alkalinity (as CaCO ₃)	0.0500 50

Disposal Method:
Verification Date: 01/07/93
Hazard Class: Health

Disposal Date:

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:32:31 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ALK SPK - SOLUTION
Date Prepared: 08/30/93
Prepared by: Emerlinda Strickler
Type: Spike Solution

Reference #: GE9308027
Expiration Date: 08/30/94
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
NANOPURE WATER			

Source	Amount	Component	Final Concentration
GE9308026	2.5000 G	Bicarbonate Alk (as CaCO ₃)	5.8950 PPM
		Total Alkalinity (as CaCO ₃)	5.8950 PPM
		Carbonate Alk (as CaCO ₃)	PPM
		Hydroxide Alk (as CaCO ₃)	PPM

Disposal Method:
Verification Date: 08/30/93
Hazard Class:

Disposal Date:

003655

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 14:12:00 15 DEC 1993 - P. 1 :

=====

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: TDS SPIKE

Date Prepared: 09/11/93

Prepared by: Cindy Zicker

Type: Spike Solution

Reference #:GE9309007

Expiration Date: 09/11/94

Total Volume: 1000 ML

Solvent

Manufacturer

Lot#

%

NANOPURE WATER

Source

Amount

Component

Final Concentration

GE9301030

10.0000 G

Filterable Residue, TDS (160.1

100.0000 MG/L

Disposal Method:

Verification Date: 09/16/93

Hazard Class:

Disposal Date:

003656

Raw Data for General Chemistry

003657

NH₃-N
p1

DATE: 200, 202,
run from #198

Channel Name: NH3-N (LJ)
Run Date: 12-03-1973
Sample Table Name: 1493L03-1

PEAK/PLP#	SAMPLE ID	DIL	SGT	HEIGHT	CALC VALUE	EF
1	1	1	1	3186	4.98	a
2	2	1	1	0	0.03	b
3	3	1	1	3184	4.98	N
4	4	1	1	0	0.03	649311014
5	5	1	1	0	0.03	I
6	6	1	1	283	0.47	
7	7	1	1	1271	2.00	
8	8	1	1	2227	3.49	
9	9	1	1	3201	5.01	N

INTERCEPT: -17.96532
CORRELATION COEF: .9999454
LINEAR COEF: 643.0751

10	10	108	(12-292-1)	50 µl of 100ppm 649306017 1/10ml DI	1	3230	200	5.05/5.4 = 101%
11	11	11-383-1	OC-EMA	50	1	13		0.05 = 1 < 0.1
12	12	11-383-2			1	1		0.03 = 1 < 0.1
13	13	11-383-3			1	1		0.53 = 0.53
14	14	11-383-4			1	1		0.26 = 0.26
15	15	11-383-5			1	1		0.04 = 1 < 0.1
16	16	11-383-6			1	1		0.03 I
17	17	11-383-7			1	1		0.03 I ↓
18	18	11-383-881			1	1		0.46 = 0.46
19	19	11-383-881	(100 µl of 100ppm 649311014/10ml 5x)		1	901	RPD = 1.4%	1.43 = 1.43 - 0.46 / 1.6
20	20	11-383-882			1	917		1.45 = 1.45 - 0.46 / 1.6
21	0	0	(12-211-1)		1	0		0.03 b
22	10	108			1	3268		5.11
23	21	11-383-9			1	106		0.19 = 0.19
24	22	11-383-10			1	44		0.10 = 10.10
25	23	11-383-11			1	10		0.04 = 1 < 0.1
26	24	11-383-12			1	1159		1.83 = 1.8
27	25	11-383-13			1	127		0.23 = 0.23
28	26	11-383-14			1	53		0.11 = 10.10
29	27	11-383-15			1	44		0.10 = 10.10
30	28	11-378-181	GEACOR	50	1	1	202	0.03 = 1 < 0.1
31	29	11-378-181	(100 µl of 100ppm 649311014/10ml 5x)		1	615	RPD = 6.9%	0.78 = 0.95 / 1.6 → 93%
32	30	11-378-182			1	657		1.05 = 1.05 / 1.0 → 105%
33	0	0	(12-212-1)		1	0		0.03 b
34	0	0	(12-293-1)		1	3190		4.99 N
35	0	0			1	22		0.06 = 1 < 0.1
36	0	0			1	5		0.04 = 1
37	0	0			1	3		0.03 = 1
38	0	0			1	2		0.03 = 1
39	0	0			1	0		0.03 = 1
40	0	0			1	155	198	4.45 = 24
41	0	0	HENDERSON	50	1	65	202	0.07 = 10.07
42	0	0	(12-213-1)		1	1600		23.25 = 25
43	0	0			1	1600		24.34 = 24
44	0	0			1	1550		4.45 = 24
45	0	0			1	0		0.03 b
46	0	0			1	3268		5.11 N
47	0	0			1	775		1.57 = 7.8

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50	34	12-014-1 HENDERSON WW	10	1	1500
51	45	12-014-2	10	1	1373
52	46	12-014-3	10	1	1475
53	47	12-014-4	10	1	1558
54	48	12-014-5	10	1	1429
55	49	L1 [5 ml of 1000 ppm STROB 2017/50ml DI]	1	1	3197
56	50	AIR (12-294-1)	1	1	31
57	0	W	1	1	0
58	10	LDS	1	1	3246
59	51	AIR	1	1	24
60	52	AIR	1	1	0
61	53	AIR	1	1	0
62	54	AIR	1	1	0
63	0	W	1	1	0
64	10	LDS	1	1	3276

avg
↓

23.68 = 24
21.24 = 22
23.22 = 23
24.51 = 24
22.50 = 22
100.05/100 => 100%
0.08 = 1
0.03 = b
5.08 = H
0.07 = f
0.03 = 1
0.03 = f
0.03 = I
0.03 = b
5.12 = H

NH₃-N
p.2

NH_3-N

p. 3

CHANNEL NAME: NH3-N
RUN NAME: NYSLV01
RUN DATE: 12-03-1993
INITIAL CALIBRATION

5000

4000

3000

2000

1000

003660

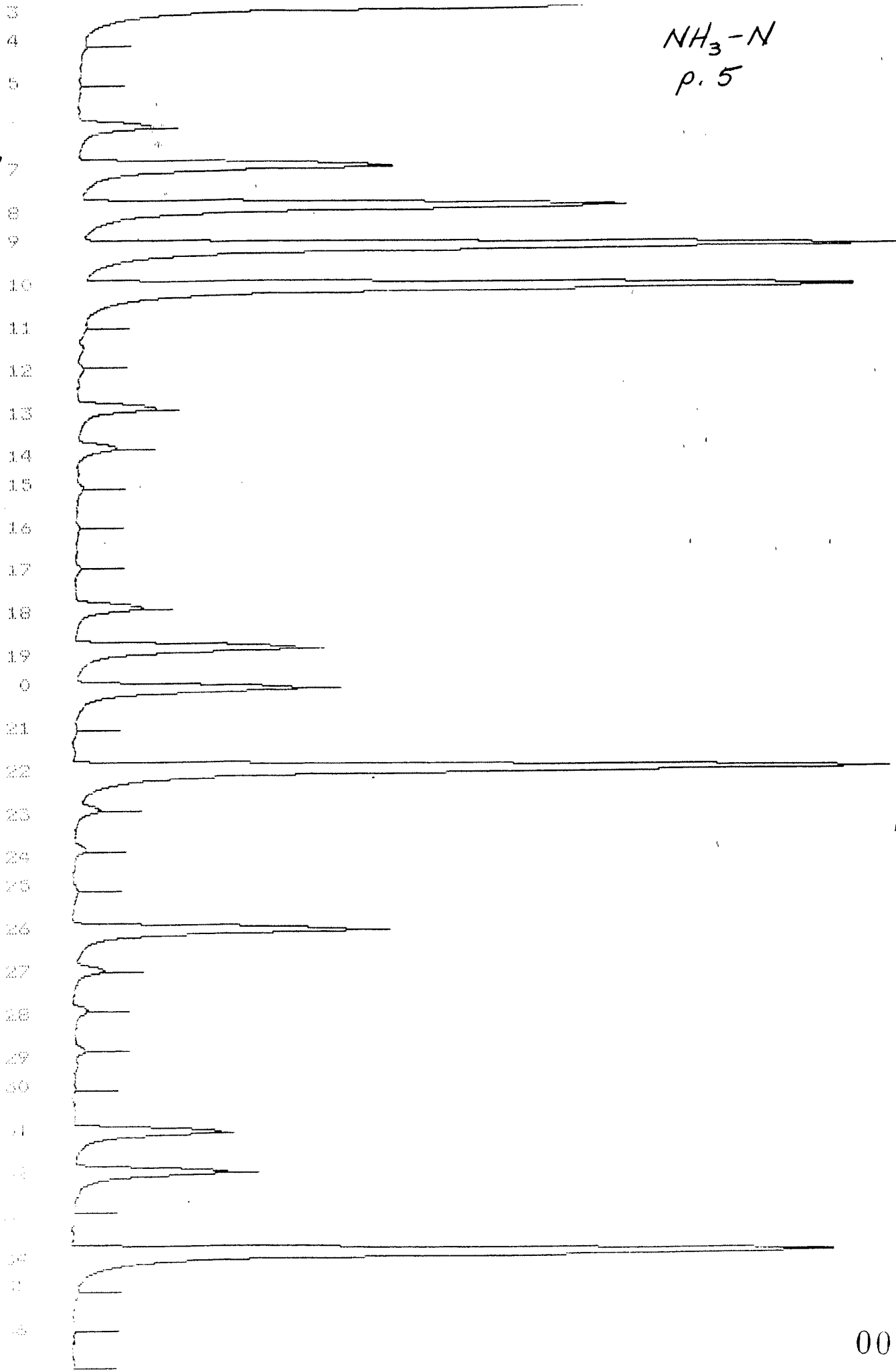
NH_3-N

p. 4

RUN DATE: 12-03-1973 CHART DATE: 12-03-1973
CHART SPEED: 30
DATA FILE NAME: C:\SF10\RI\DATA\NH3LO3-1.M11

003661

NH_3-N
p. 5



003662

NH₃-N

p. 6

39

40

41

42

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003663

Batch 218

CHANNEL NAME: NH3-N

RUN DATE: 12-21-1993

SAMPLE TABLE NAME: NVALIB-2

JLV

Equip # 533-20

PEAK/CUP#	SAMPLE ID	DIL	MOI	HEIGHT	CALC VALUE	EF
1	1	SYND	1	3622	4.83	N
3	3	H1	1	3649	4.86	N
5	5	S1: 0	1	160	-0.04	I
6	6	S2: .5	1	520	0.46	
7	7	S3: 2	1	1678	2.09	
8	8	S4: 3.5	1	2719	3.56	
9	9	S5: 5	1	3694	4.93	N

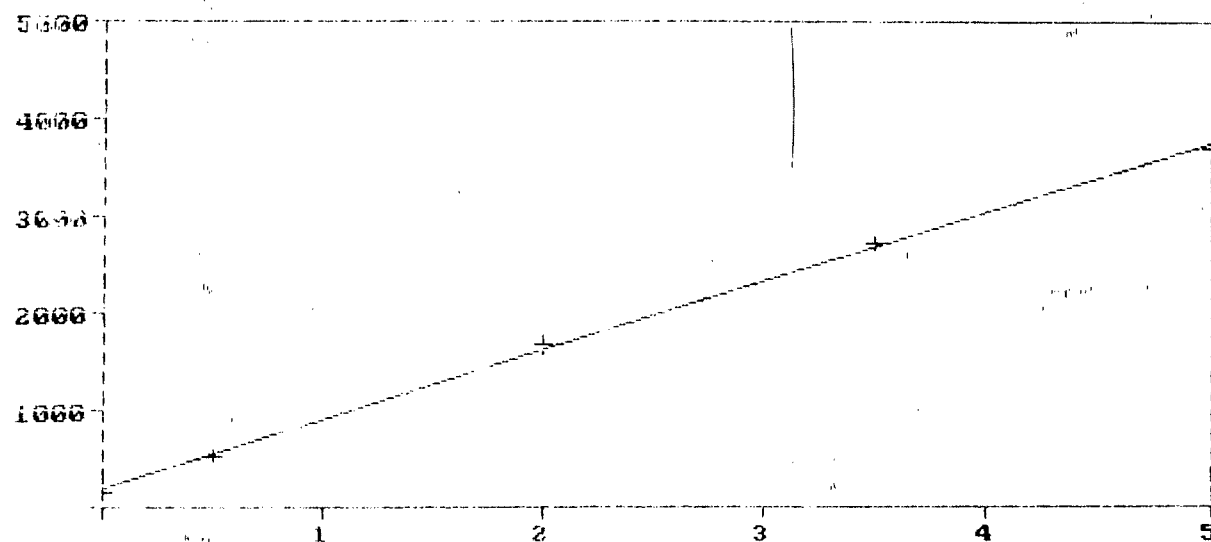
INTERCEPT: 189.237 LINEAR COEF: 711.3468
CORRELATION COEF: .9994211

10	10	LCS 50ul 1000ppm GE9306017	1	3738	4.99/5000 = 100%	
22	10	LCS (12-1549-1)	1	3736	4.99	N
34	10	LCS	1	3654	4.87	N
46	10	LCS	1	3581	4.77	N
12	12	MB (12-1229-1)	1	210	0.03	I
13	13	12-066-1	1	456	0.38	
14	14	12-066-1S1 100 ul 100 ppm / 10 ml. Sx	1	1055	1.22 - 0.38/1.0 = 84%	✓
15	15	12-066-1S2 GE9311014	1	1084	1.26 - 0.38/1.0 = 88%	✓
16	16	12-217-1 Oecma NR242091	1	386	0.28 T = 1.38	
7	17	12-217-2 - 211	1	715	0.74 RPD = 3.2%	
3	18	12-217-3 - 213	1	709	0.73	
19	19	12-217-4 - 215	1	246	0.08 => < 0.1	
20	20	12-217-5 - 217	1	346	0.22	
23	21	12-217-11 - 207	1	509	0.45	
24	22	12-239-1 BCALANA A9312154	1	216	0.04 - I < 0.1	
25	23	12-239-2	1	218	0.04 - I < 0.1	
26	24	12-239-3	1	205	0.02 - I < 0.1	
27	25	12-239-4	1	197	0.01 - I < 0.1	
28	26	12-239-5	1	217	0.04 - I < 0.1	
29	27	12-239-6	1	195	0.01 - I < 0.1	
30	28	12-239-7	1	193	0.01 - I < 0.1	
31	29	12-239-8	1	195	0.01 - I < 0.1	
32	30	MBL (12-1393-1)	1	170	-0.03 I => 0	
35	31	LCS 5 ml 1000ppm GE9306017 / 50 ml. DI	1	3563	94.86 => 95/100 = 95%	
36	32	12-211-11 (12-841-1)	1	1818	22.90 => 23	
37	33	12-211-17	10	1872	23.66 = 24	
38	34	12-251-1	1	1552	1.92 = 1.9	
39	35	12-251-2	1	2026	2.58 = 2.6	
40	36	LCS 5 ml 1000ppm GE9306017 20 (12-1759-1)	1	3429	91.09 => 91.1/100 = 91%	
41	37	A8 / 50 ml. DI	1	182	-0.01	I
42	38	A9	1	158	-0.04	I
43	39	A10	1	152	-0.05	I
44	40	A11	1	153	-0.05	I
47	41	A12	1	178	-0.02	I
48	42	A13	1	164	-0.04	I
49	43		1	158	-0.04	I
50	44		1	152	-0.05	I

Note: No enough Sx. to run a Batch QC on NH3-N Distilled. Instead 2 LCS were run to validate data: C6 12/22/93

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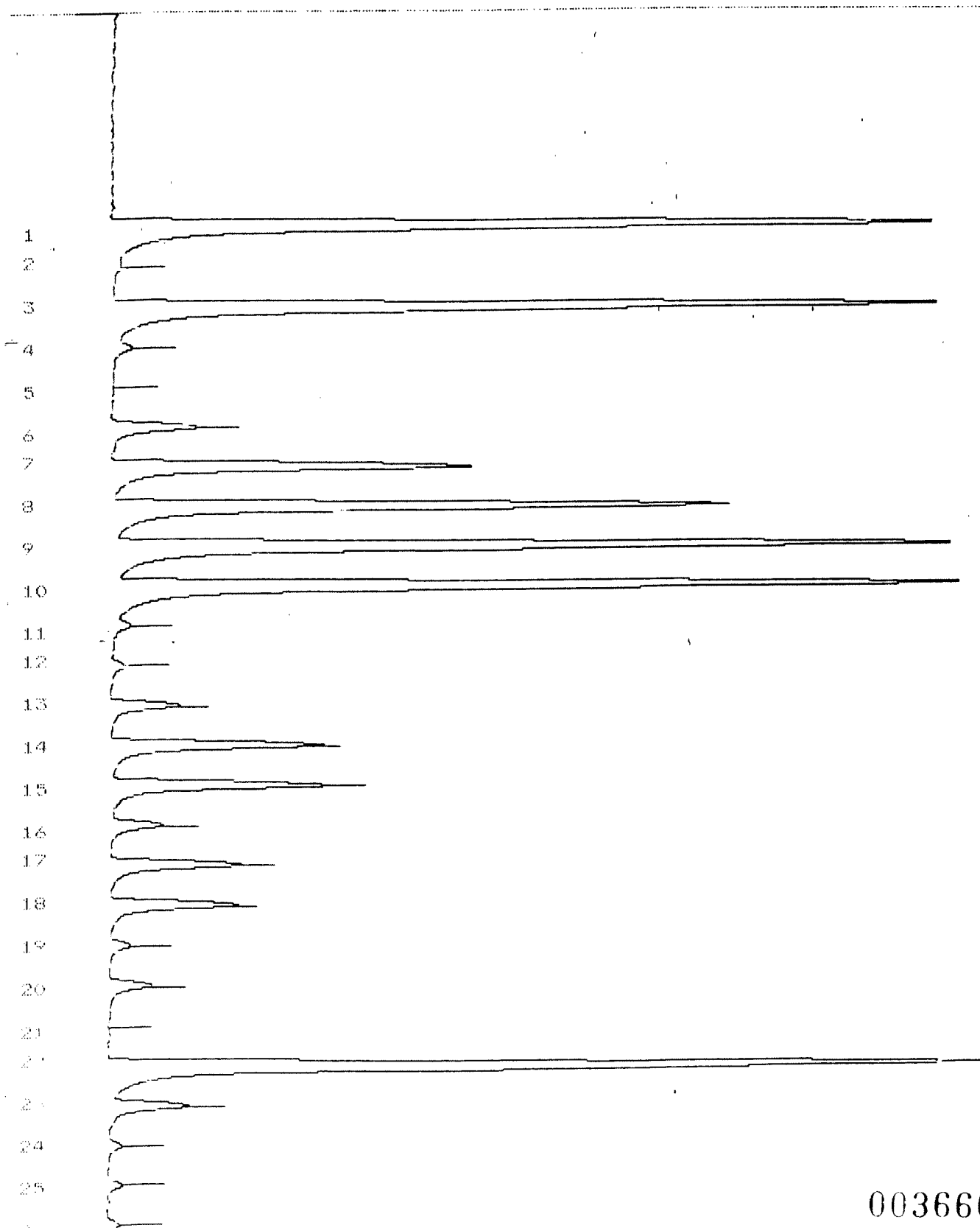
CHANNEL NAME: NH3-N
RUN NAME: N93L18-2
RUN DATE: 12-21-1993
INITIAL CALIBRATION



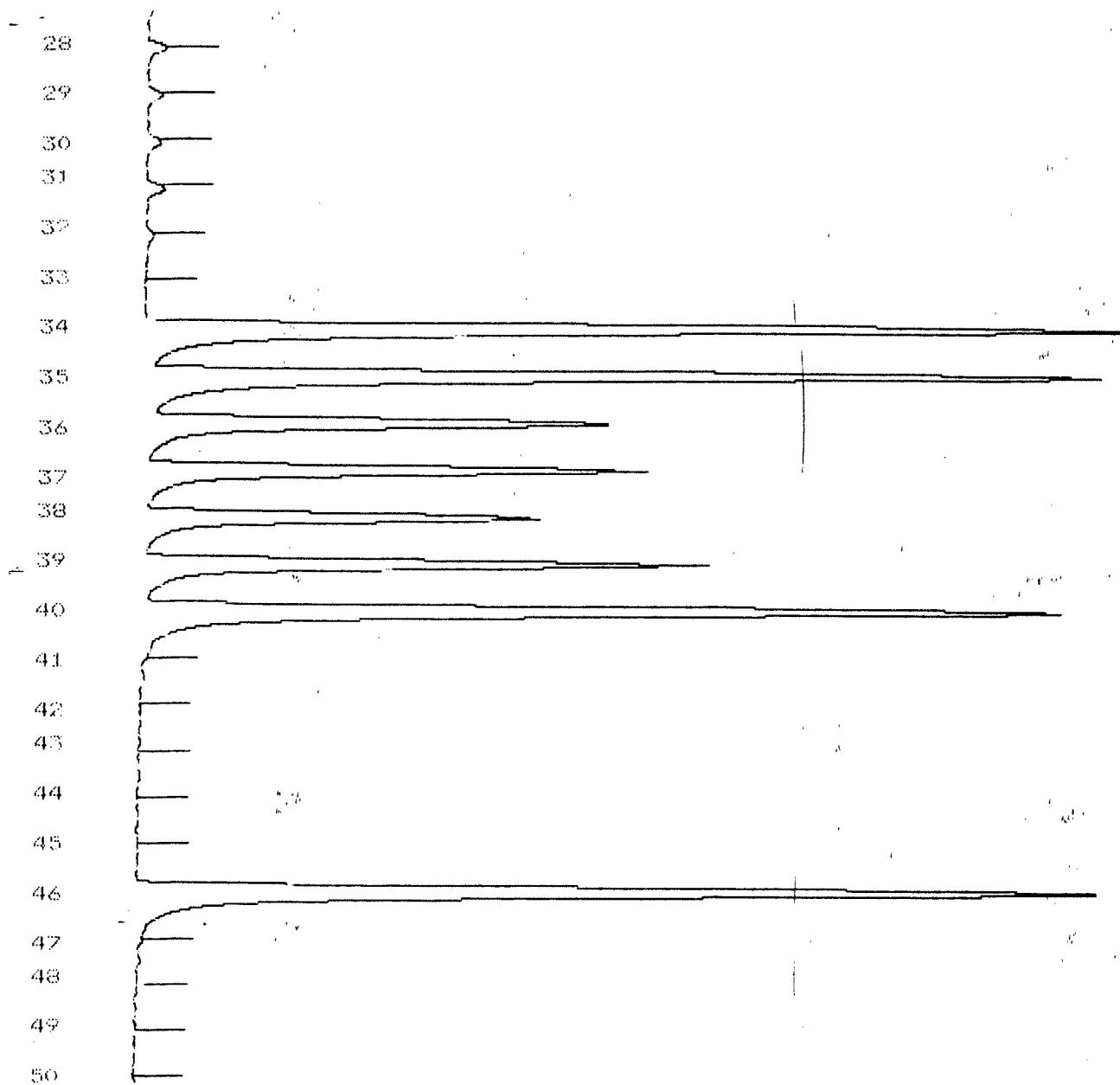
PEAK NAME: CF
INTERCEPT = 189.237
CORRELATION: .9994211

CALIBRATION CODE: 1
SLOPE = 711.3468

RUN DATE: 12-21-1993 CHART DATE: 12-21-1993
CHART SPEED: 30
DATA FILE NAME: C:\SP107R1\DATA\N93L18-2.D11



003666



From Page No. —		TPG W.C.1	Spool #1	Temp - 180°C			
CA #	Chart	Sample ID	MTX	Dil	EX ID	Final Mass (g)	Initial Mass (g)
NP	12-980-1		BLU	100ml	1	75.8975	75.8971
11-378-1R	SECOOR-SLO	GW-2	GW		2	66.6198	66.5135
-1S	GE9309007				20	78.0995	77.9509
-1S	10ml of 10000 ppm GE9309007				PL	77.1930	77.0448
-2		GW-3			17	82.1287	82.0788
-3		GW-4			Xi	82.8234	82.7732
-4		GW-5			24	76.7555	76.7105
-5		GW-6			E	75.1005	75.0304
-6		Equipment BIK			D	75.7392	75.7338
12-097-1	City of Glen	W P-2 MW-1	GW		1	78.3925	78.3387
097-2		W P-1 MW-2			L	66.1903	66.1509
097-3		MW-3			3	77.1422	77.0710
12-00-1	Courtland B	Sump	WW		9	77.0187	76.9666
12-088-1	Geosystem 1R	E-1	GW		6	68.8332	68.7673
12-099-1	Groundwater	R-2	AD		4	73.4940	73.3211
099-2		W P-1 R-1			8	78.9865	78.8766
099-3		R-3			10	77.4638	77.2708
12-083-1	Law Randall	W Sump	AG		8	76.4849	76.4849
083-2		E Sump			11	78.6803	78.5115
12-090-1	Cockhead	Influent	GW		7	74.7070	74.6546
-2		Effluent			5	81.9411	81.8842
-3		Effluent			11	83.3600	83.3026
12-066-1	SECO	GW-1	GW		21	82.2483	82.1955
USI 12-128-1	10ml 10000 ppm	12-GE9311011			H	67.0580	66.9567
USI 12-217-1	10ml 10000 ppm				F	81.7294	81.6313

To Page No. —

To Page No. _____

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

003668

TITLE _____

12/26/93

From Page No. _____	Case SOS. mg/L	TDS mg/L	QC / Comments	Batch
	420	0		114
	463	460		
	1,486	1500 = 1490	SPK1 PLL 1490 - 460 / 1000 x 100 = 103%	T = 1460
	1,482	1 = 1480	SPK2 PLL 1480 - 460 / 1000 x 100 = 102%	
	499	500		
	502	500		
	450	450		
	701	700		
	54	54		
	538	540		
	394	390		
	712	710		
	521	520		
	659	660		
	1,729	1700		
	1099	1100		
	1,930	1900		
	828	1800		
	1,688	1700		
	524	520		
	569	570		
	574	570		
	448	450		
	1013	1000 / 1000 → 101%	LC5	
	981	981 / 1000 → 98%	LC5	

Ruzel APP
(17) 12/15/93

To Page No. _____

Inspected & Understood by me, _____

Date _____

Invented by _____

Date _____

Recorded by _____

003669

From Page No. _____	TDB 160.1	Bar # 1	Temp 180°C				
LA #	Client	Sample ID	MTX	Di	SRID	Final Mass (g)	Initial Mass (g)
MB	12-1182-1				WX	75.2357	75.2354
12-103-1	Dumas, Delano	GW300499	GW		19	75.5400	75.4870
12-103-2 R ₁		GW00501	GW		22	78.2190	78.2035
12-103-2 S ₁					15	75.6280	75.4677
12-103-2 S ₂					P	85.0926	84.9212
12-117-1	Arco	HIC-01	AG		4	75.6649	75.6577
-2		IRFF-07			13	76.5269	76.4465
-3		WHSEI (E-13)			K	67.1633	67.0946
-4		CKRCW-19			C	74.6445	74.5776
-5		CRRCTRL-25			E	85.6157	85.5337
-6		SIFE PLAT-31			16	76.1597	76.0903
-7		SOPOL-37			5	76.7609	76.6930
-8		S2-VAL-43			F	77.8196	77.7529
-9		STR63 MW-45			Z	75.7999	75.7860
-10		SFIA-55			A	78.5065	78.4393
12-118-1	Litrolin Prop	Cooling Tower	WW		WX	67.1838	67.0132
12-153-1	Kensar Cubing	001	WW		Z	77.8512	77.8440
-2		002			10	76.8249	76.8197
LCSTL 12-118-1	10ml 1000ppm	GE-9311011			9	78.8108	78.7116
LCSTL 12-118-1	10ml 1000ppm				B	82.8133	82.7115
MB	(12-567-1)	(12-625-1)		100ml	U	65.8154	65.8150
12-066-1 R ₁	SEACOR SLO	GW-1	GW		J	75.0329	74.9917
-1 S ₁					J	81.6087	81.4652
-1 S ₂					I	84.6878	84.5485
12-172-30	Groundwater	CM-4D	GW		③	82.6320	82.5299
-31		CM-5			5	83.3749	83.3153
12-188-1	Goosystem IR	E-1			9	75.2629	75.2097
12-199-1	Lockheed GSC	Equadator Eff.	WW		L	79.8397	78.7913
12-162-1	PRAL Ang	MW-87	GW	100ml	A	83.1917	82.1002
LCSTL	10ml 1000ppm	GE-9311011			LC5	81.2791	81.1782
LCSTL	10ml 1000ppm	(12-1222-1)			MB	75.4671	75.3803
12-178-1	Calmax	(12-1335-1)	WW		18	77.9562	77.9545
12-198-1 R ₁	Oceana	WR24193			2	79.7805	79.7799
-1 S ₁					③	69.9985	69.8999
-1 S ₂					?	79.6734	To Page No. 57

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

003670

TITLE _____

From Page No. _____

fn 12/13/93

TDS ^{calc} (mg/l)	TDS ^{report} (mg/l)	QC/Comments	Batch
3 = 0	0		115
510	510		
755	760		
1,603	1600	$1600 - 760 / 1000 \times 100 = 52.4\%$ $\leq LCL = 1760$	
1,714	1710	$1710 - 760 / 1000 \times 100 = 95\%$ $RPD = 6.6\%$	
72	72		
804	800	S, < LCL. Batch reported loaded on good LCSs, good RPD between LCSs, & good RPD between spikes.	
687	670		
669	670		
820	820		
694	690		
679	680		
667	670		
139	140		
672	670		
1,706	1700		
72	72		
52	52		
992	990	$990 / 1000 \times 100 = 99\%$ $T = 1000$	
1018	1020	$1020 / 1000 \times 100 = 102\%$ $RPD = 3.0\%$	
fn 12/16/93			
0	0		116
412	410		
1435	1440	$(1440 - 410) / 1000 = 103\%$ $RPD = 2.8$	
1393	1400	$(1400 - 410) / 1000 = 99\%$ $T = 1410$	
1021	1000		
596	600		
532	530		
484	480		
10915	11000		
1009	1000 1010	$1010 / 1000 = 101\%$	
841	840		
17	17		
6	6 0		
986	986	$(986 - 6) / 1000 = 98\%$ $RPD = 0.92\%$	
977	977	$(977 - 6) / 1000 = 97\%$ $T = 1006$	

Rev 66 12/17/93

Rev 66 12/21/93

To Page No. _____

Witnessed & Understood by me, _____

Date _____

Invented by _____

Date _____

Recorded by _____

-003671

From Page No. _____	Client	Box ID	Mix	Oil	Turb. read	Turb. Rptd	QC / comment
6 C#		Turb 180.1	1	Hash	533.10	(15)/9LS	12/3/93
MB	[12-178-1]						
93-11-378-1R1	See Cor	Gu-2	Gu	1	0.02	0.02	
93-11-378-1R2		Gu-2	Gu	1	4.4	4.4	> RPD = 10%
378-2		Gu-2	Gu	1	4.0	4.0	
3		Gu-3	Gu	1	4.7	4.7	
4		Gu-4	Gu	1	1.06	1.1	
5		Gu-5	Gu	1	20	20	
6		Gu-6	Gu	1	34	34	
		Exp Blank	Gu	1	60	60	
LCS I	1.56 [12-248-1]		Gel		1.62	1.62	1.62/1.56 = 104%
LCS II	16.4 [12-249-1]		Gel		16.5	16.5	16.5/16.4 = 101%
LCS III	191 [12-250-1]		Gel		190	190	190/191 = 99%
		Turb 180.1	Exp 533-10	G.S.	12/2/93	Batch	164
MB	[12-044-1]			1	.02	.02	
93-11-383-1R1	OCEMA	WR24102	SW		6.5 9.9	6.5 9.9	See Below
-1R2		WR24104	SW		6.5 9.15	6.5 9.1	See Below
-2		WR24104	SW	1	3.3	3.3	
-3		WR24108 6	SW	4	33 x 4	130	
-4		WR24108 08	SW	4	26 x 4	100	
-5		WR24110 10	SW	1	3.7	3.7	
-6		WR24114 2	SW	1	4.9	4.9	
-7		WR24114 4	SW	1	4.9	4.9	
-8		WR24118 6	SW	1	17.3	11	
-9		WR24120 18	SW	1	18.9	19	
-10		WR24122 20	SW	1	8.4	8.4	
-11		WR24124 2	SW	1	8.7	8.7	
-12		WR24124	SW	1	1.18	1.2	
-13		WR24125	SW	4	24 x 4	100	
-14		WR24127	SW	1	1.15	1.2	
-15		WR24129	SW	1	9.9	9.9	
LCS I	1.56 [12-251-1]		Gel		1.63	1.63	1.63/1.56 = 104%
LCS II	16.4 [12-041-1]		Gel		16.6	16.6	16.6/16.4 = 101%
LCS III	191 [12-060-1]		Gel		189	189	189/191 = 99%
11-383-1R1	OCEMA	WR24102	SW	1	1.0	1.1	
4-383-1R2	OCEMA	WR24102	SW	1	1.02	1.0	> RPD = 9%

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

003672

From Page No. — TURB 180.1 Equip 533-10 SH 12/4/93 Batch # 166							
BCA #	Client	Sample ID	MTX	Dil	Turb Read	Turb Rept	QC
BLR			BW	1	0	0	
11-356-20	Corma	WR24100	SU	1	10.3	10	
11-356-18		PWR24041		1	2.7	2.7	
2-083-1		WR24166		1	5.0	5.0	
2		WR24168		1	5.8	5.8	
3		WR24170		1	34	34	
4		WR24172		1	1.82	1.8	
5		WR24174		1	5.1	5.1	
6		WR24176		1	2.2	2.2	
7		WR24178		1	2.0	2.0	
12-545-1R	Rockwell	Bldg 247		1	0.61	0.61	
7R2				1	0.64	0.64	
LCS ₁	1.56	12-365-1	RW		1.61	1.61	
LCS ₂	16.4	12-366-1			16.6	16.6	
LCS ₃	191	12-367-1			191	191	
							RPD = $\frac{4.8\%}{103\%}$ $\frac{1.61}{1.56} \times 100 = 103\%$ $\frac{16.6}{16.4} \times 100 = 101\%$ $\frac{191}{191} \times 100 = 100\%$ RANGE 12/6/93
11-356-18 20 analyzed past holding time. Sampled 11/24/93, Received 11/29/93							
DN	Turb 180.1	Equip 533-10			12/07/93		Batch 166/67
B/K	[12-573-1]				0	0	
12-066-1R1	Seacor	GW-1			1.56		Ignore
-1R2					1.42	1.42	
LCS 1	[12-729-1]				1.61		$1.61/1.56 = 103\%$
LCS 2	[12-730-1]				16.5		$16.5/16.4 = 101\%$
LCS 3	[12-731-1]				190		$190/191 = 100\%$
12-066-1R3					1.47	1.47	RPD = 3.5%
GB	Turb 180.1	Equip 533-10			12/8/93		Batch 168
7h1	[12-574-1]		BW		0.06	0.06	
12-076-1R1	OCMA	WR24180	WW	2	24	ignore	
-2		WR24182	WW	1	2.4	2.4	
-3		WR24184	WW	1	5.9	5.9	
-4		WR24186	WW	1	31	31	
-5		WR24188	WW	1	3.0	3.0	

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KA 12/6/93

BEA#	CUEST	SAMPLED	WT	GR	Vol	pH	Vol 8.3	Vol 4.5
Blank	11-1961-1				50	5.50		<0.02
11-357-1	BER/ AOA	AG 31-238	GW		50	7.77		3.40
11-357-2	BER/ AOA	AG 31-238 KA PQW-1-PP	GW	1/5	10/50	9.61	0.82 5.61 KA	4.00
11-357-3	BER/ AOA	PQW-2-PP	GW	1/10	5/50	11.56	4.60	5.70
11-357-4	BER/ AOA	PQW-4-PP	GW	1/10	5/50	10.65	3.74	5.08
11-357-5	BER/ AOA	PQW-5-PP	GW	1/10	5/50	10.90	6.66	8.20
11-378-1a	SEA CON	GW-2	GW		50	7.44		2.6
11-378-2	SEA CON	GW-3	GW		50	7.64		1.96
11-378-3	SEA CON	GW-4	GW		50	7.60		1.94
11-378-4	SEA CON	GW-5	GW		50	7.64		2.00
11-378-5	SEA CON	GW-6	GW		50	7.65		2.40
11-378-6	SEA CON	Eggs Blue			50	5.04		<0.02
11-378-15a					50	9.60		6.70
11-378-15b	10 ml 9-2358 GE9308027				50	9.60		6.72
LOD	50 ml 9-2358 ppm (11-2319-1) GE9308033				50	8.79		5.60
11-314-5	Re-check				50	7.75		6.04
To Page No. _____								

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From Page No. 533-16		BATCH 53			
ALK	HCO ₃ ⁻	CO ₃ ²⁻	OH ⁻	P	
0	0	<1	<1		
370	370	<1	<1		
2200	1300	880	<1	440	
6200	<1	2400	3800	5000	
6500	<1	5000	1500	4000	
8800	<1	3200	5600	7200	
280	280	<1	<1		
210	210	<1	<1		S ₁ , 724 - 280 = 444 / 472 × 100 = 94.1%
210	210	<1	<1		S ₂ , 726 - 280 = 446 / 472 × 100 = 94.7%
220	220	<1	<1		T = 752
260	260	<1	<1		
<10	<10	<1	<1		RW & APP 12/7/93
724	724	<1	<1		LC8 = 605 / 596 × 100 = 102.9%
726	726	<1	<1		T = 596
560 605	605	<1	<1		
650	650				6.04 × 0.070 × 50000 / 50 =

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12/20/93

KA

BCA#	CULEDT	SAMPLED	NIX	AL	UAF	PH	UAF 8.3	UAF 4.5
Blank					50	6.70		10.02
12-066-12	SEA COY	G107			50	7.74		1.94
12-066-15		G107			50	9.65		6.64
12-066-15	10 ml of 2358	GE9308027			50	9.60		6.62
LCD	50 ml of 596 ppm				50	8.82		5.80
12-083-1	ALR		1/5	1/60	50	6.95		2.10
ROCK.								
Alk 310.1	H ₂ SO ₄ = 0.1012 N	533-16						
MB	(12-1462-1)				50	5.66		10.02
12-162-1	BC Anaheim	A9312098-1	1R		50	7.32		7.49
12-258-1					50	7.83		2.02
-15pk	10 ml of 2358	GE9308027			50	9.88		6.60
-15pkup					50	9.87		6.53
LCS	50 ml of 596 ppm	GE9311021			50	8.85		5.68
(12-1840-1)								

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From Page No. _____ 533-16 BATCH 55				
TOTAL ALK	HCO ₃ ⁻	CO ₃ ⁻²	OH ⁻	P
0	0	<1	<1	
200	200	<1	<1	S_1 $672 - 200 = 472 \times 100 / 472 = 100\%$
672	672	<1	<1	S_2 $670 - 200 = 470 \times 100 / 472 = 100\%$
670	670	<1	<1	
587	587	<1	<1	$LCR \ 587 / 596 \times 100 = 98$
1100	1100	<1	<1	
DN 12/22/93 Batch 56				
0	0	<1	<1	
760	760			
200	200			
668	670 668			$(668 - 200) / 472 = 99\%$ RPD = 1.1%
661	661			$(661 - 200) / 472 = 98\%$ T = 672
575	575			$575 / 596 = 96.5\%$
Rev GB 12/27/93				
To Page No. _____				

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Date _____

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Log#	File #	Client	SX IN	mx	dil	F-	CI-
		4000i	Anions by IC	300.0		533-23 11/23/93 (6m)	
LCS	1123001						8.07/7.5 = 108
93 BLANK old	2						
BLANK NEW	3						0.04
BLANK Arrow	4						
9311283 *1	5	Geosystem	EW-1	GW	10		60
*151	6	↓	EW-1	↓	↓		69.9 - 60/12 = 83
*152	7	↓	EW-1	↓	↓		70.0 - 60/12 = 83
9311282 *3	8	↓	E-1	↓	↓		60
9311274 *1	9	NORANDA	STA 7	↓	↓		< 0.05
*1	10	↓	↓	↓	10		
*1	15	↓	↓	↓	100		
*1	15A	↓	↓	↓	1000		
LCS	13						7.83/7.5 = 104
BL	14						0.10
	4000i	Anions by IC	300.0	533-23	12/01/93 (6m)		
S1	1201007						
S2	1201002						
S3	3						
S4	4						
S5	5						
LCS	6						
BL	7						
9311378 *1	8	Seacor	GW-2				
*151	9	↓	-2				
*152	10	↓	-2				
-2	11	↓	-3				
-3	12	↓	-4				
-4	13	↓	-5				
-5	14	↓	-6				
-6	15	↓	Equip Blank				
9311343 -1	16	Geosystem	E-1		10		
LCS	17						
BL	18						

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[illegible]**Date**

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From Page No. _____	Log #	File #	Client	SX ID	MTX	dil	F -	CI -
			4000i	Anions by	IC	300.0	12/02/93 (Bm)	533.23
	S1	12020018						
	S2	28						
	S3	38						
	S4	48					R = 0.9998	R = 0.9993
	S5	58					10	20
	LCS	68						9.71/10 = 97
	BL	78					0	0
	9311378-1	88	Seacor	GW-2		10		31
	-181	98		↓		↑		41.8 - 31/12 = 90
	-182	108		↓		↑		41.1 - 31/12 = 84
	-2	118		GW-3				27
	-3	128		GW-4				26
	-4	138		GW-5				26
	-5	148		GW-6		↓		32
	-6	158		Equip Blank		↓		< 0.05
	9311343-1	168	Geosystem	E-1		↓ 10		61
	LCS	178						10.5/10 = 105
	BL	188					0	0
<div>4000i Anions by IC 300.0 12/08/93 (Bm) Note: Used Calibration Curve</div>								
	LCS	1208001						8.36/10 = 84
	BL	2						0.54
	93-12-066-1	3	Seacor					
	-181	4		↓				
	-182	5		↓				
	-1	6		↓		10		25
	-18	7		↓		↓		33.0 - 25/12 = 67
	-182	8		↓		↓		34.1 - 25/12 = 76
	LCS	9						8.86/10 = 89
	BL	10						0.48
<div>Note: CI⁻ in BLANK probably due to NANOWATER, report samples > 10 x MB, try to fix problem in future 12/8 (Bm) To Page No. _____</div>								

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From Page No.	NO_2^-	Br^-	NO_3^-	PO_4^{3-}	SO_4^{2-}	
R=0.9998 5 $2.44/2.5 = 98$ 0	R=0.9997 5 0	R=0.9995 20 $9.83/10 = 98$ 0 61 $98.0 - 61/40 = 93$ $98.2 - 61/40 = 93$ 57 51 45 63 60.1 $10.5/10 = 105$ 0	R=0.9997 20 $9.88/10 = 99$ 0 56 (m) 0	R=0.9990 50 $24.2/25 = 97$ 0 56 $105 - 56/60 = 82$ $105 - 56/60 = 82$ 50 52 56 54 60.1 140 $26.1/26 = 104$ 0	28 ↓	
12/02/93 $2.09/2.5 = 84$ 0 60.1 $8.45 - 0/10 = 85$ $8.52 - 0/10 = 85$		B.56/10 = 86 0 36 $65.9 - 36/40 = 75$ $66.8 - 36/40 = 77$ $8.93/10 = 89$ 0.28	21 (m)	21.02/25 = 84 0 56 $99.7 - 56/60 = 73$ $100 - 56/60 = 73$ $22.1/25 = 88$ 0	29 ↓	

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003681

APPENDIX D

METALS

MDL Summary

(Inst 535-02)

003683

der No.: 69308192
ported:

REPORT OF MDL RESULTS

Page 1

NAMEIER

	CONC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AVG	SD	MDL	RDL(AQ)	RDL(MAQ)
liver (6010) 535-02	0.03	0.0338	0.0265	0.0298	0.0319	0.0342	0.0303	0.0334	0.031414	0.002758	0.008660	0.01 ng/L	1 ng/kg
umium (6010) 535-02	0.2	0.198	0.216	0.142	0.198	0.196	0.178	0.197	0.189286	0.023571	0.074013	0.1 ng/L	10 ng/kg
enic (6010) 535-02	0.2	0.201	0.215	0.224	0.191	0.203	0.196	0.192	0.203143	0.012267	0.038518	0.05 ng/L	5 ng/kg
ron (6010) 535-02	0.2	0.224	0.209	0.211	0.205	0.197	0.200	0.191	0.205286	0.010781	0.033852	0.05 ng/L	5 ng/kg
ium (6010) 535-02	0.02	0.0203	0.0218	0.0210	0.0209	0.0207	0.0204	0.0207	0.020829	0.000495	0.001554	0.005 ng/L	0.5 ng/kg
yllium (6010) 535-02	0.002	0.0025	0.0027	0.0025	0.0024	0.0024	0.0023	0.0022	0.002429	0.000158	0.000496	0.001 ng/L	0.1 ng/kg
leium (6010) 535-02	1	1.10	1.13	1.12	1.12	1.11	1.09	1.08	1.107143	0.017995	0.056504	0.5 ng/L	50 ng/kg
niium (6010) 535-02	0.02	0.0211	0.0223	0.0214	0.0213	0.0214	0.0213	0.0204	0.021314	0.000538	0.001752	0.005 ng/L	0.5 ng/kg
alt (6010) 535-02	0.1	0.106	0.112	0.107	0.108	0.107	0.106	0.106	0.107429	0.002149	0.006748	0.04 ng/L	4 ng/kg
onium (6010) 535-02	0.03	0.0327	0.0289	0.0301	0.0335	0.0330	0.0303	0.0292	0.031100	0.001916	0.006016	0.01 ng/L	1 ng/kg
pper (6010) 535-02	0.05	0.0475	0.0492	0.0471	0.0486	0.0484	0.0468	0.0464	0.047714	0.001036	0.003253	0.02 ng/L	2 ng/kg
gestion (3010)	/17/93	/17/93	/17/93	/17/93	/17/93	/17/93	/17/93	/17/93	N/A	N/A	N/A		
on (6010) 535-02	0.1	0.116	0.111	0.113	0.113	0.118	0.111	0.111	0.113286	0.002752	0.008641	0.04 ng/L	4 ng/kg
assium (6010) 535-02	1	1.06	1.02	0.938	1.01	1.03	0.970	0.990	1.002571	0.040410	0.126887	0.5 ng/L	50 ng/kg
nesium (6010) 535-02	0.5	0.483	0.505	0.502	0.501	0.492	0.482	0.465	0.490000	0.014329	0.044993	0.1 ng/L	10 ng/kg
ganese (6010) 535-02	0.0300	0.0318	0.0327	0.0330	0.0328	0.0319	0.0323	0.0323	0.032400	0.000454	0.001426	0.01 ng/L	1 ng/kg
lybdenum (6010) 535-02	0.1	0.0987	0.105	0.102	0.104	0.108	0.102	0.101	0.102957	0.003013	0.009461	0.04 ng/L	4 ng/kg
ium (6010) 535-02	1	1.17	1.15	1.17	1.16	1.18	1.13	1.15	1.158571	0.016762	0.052633	0.5 ng/L	50 ng/kg
kel (6010) 535-02	0.2	0.177	0.184	0.186	0.181	0.177	0.176	0.185	0.180857	0.004220	0.013251	0.04 ng/L	4 ng/kg
ad (6010) 535-02	0.2	0.192	0.229	0.215	0.216	0.212	0.212	0.214	0.212857	0.010900	0.034226	0.05 ng/L	5 ng/kg
imony (6010) 535-02	0.2	0.217	0.210	0.219	0.226	0.215	0.226	0.202	0.216429	0.008580	0.026941	0.1 ng/L	10 ng/kg
lenium (6010) 535-02	0.3	0.291	0.321	0.317	0.318	0.333	0.307	0.315	0.314571	0.012985	0.040773	0.1 ng/L	10 ng/kg
licon 535-02	1	1.06	1.04	1.00	0.980	1.08	0.928	0.866	0.993429	0.076199	0.239265	0.5 ng/L	50 ng/kg
allium (6010) 535-02	0.35	0.384	0.393	0.383	0.401	0.394	0.377	0.366	0.385429	0.011759	0.036923	0.07 ng/L	7 ng/kg
adium (6010) 535-02	0.1	0.105	0.105	0.106	0.104	0.103	0.102	0.106	0.104429	0.001512	0.004748	0.04 ng/L	4 ng/kg
ic (6010) 535-02	0.03	0.0333	0.0339	0.0332	0.0327	0.0332	0.0325	0.0323	0.033014	0.000549	0.001724	0.01 ng/L	1 ng/kg

003684

Standard Operating Procedures

PR00488 Metals - Aqueous Digestion

003686

801 Western Avenue
Torrance, CA 91201
818/247-5737
Fax: 818/247-9797

SOP# PR00488
Tier 4 Rev. 03/04/92
Page 1 of 5

ACID DIGEST OF AQUEOUS SAMPLES FOR TRACE METALS

A. Summary

The following procedure describes the acid digestion of aqueous samples for analysis by flame or graphite furnace atomic absorption spectroscopy, or by inductively coupled argon plasma (ICP). Samples for analysis by graphite furnace are digested with nitric acid. Samples for analysis by flame or ICP are digested with a combination of nitric and hydrochloric acids. This procedure permits the digestion of groundwaters after filtration so that only dissolved metals are determined.

B. Safety

1. Wear gloves for protection from samples and acids.
2. Wear safety glasses.
3. Wear a lab coat.
4. Work with chemicals and samples in a hood.

C. Apparatus

1. Graduated glass beakers
2. Glass watchglasses
3. Graduated cylinders
4. Eppendorf pipets and tips
5. Macro-pipetter and tips, or repipetters
6. Analytical balance (± 0.01 g)
7. Hotplate
8. Whatman 41 or 541 filter paper

9. Disposable polystyrene funnels
- 10 Metals sample bottles
- 11 Volumetric flasks

D. Reagents

1. Deionized water
2. Concentrated nitric acid, reagent grade or intra-analyzed (J.T. Baker)
3. Concentrated hydrochloric acid, reagent grade (Mallinckrodt) or intra-analyzed (J.T. Baker)
4. Hydrochloric acid, 1:1
5. Spiking solutions: 1000-ppm or 10,000-ppm solutions produced by Baker, Mallinckrodt, Spex Industries, Ricca or AESAR. If a lower concentration must be used for spiking, make the lower concentration by diluting the 1000-ppm or 10,000-ppm solutions. Solutions of mixed elements may be used.

E. Procedure

1. Notebook Preparation

- a. Enter the date and analyst's initials on the first available line. Box in the above information.
- b. Make columns for the log number, sample description, client ID, matrix, initial volume, final volume and COMMENTS.
- c. Enter the log number, sample description, client code, and matrix in the appropriate columns. The sample description should be taken from the sample container. The client code and matrix may be taken from the worksheets.

2. Sample Preparation

- a. Label beakers with log numbers. Be sure to include LCS's, blanks, spikes, and duplicate spikes.
- b. Rinse beakers with deionized water.
- c. If dissolved metals are to be analyzed, filter sample through 0.45-micron filter paper.

- d. Homogenize the sample by shaking it vigorously.
 - e. Measure 100-mL (or smaller volume if required by sample availability) in a graduated cylinder and pour into a beaker. Record this initial volume in the prep notebook.
 - f. A spike and duplicate spike are required every batch of twenty samples or less. Additional portions of sample must be measured out. For spiked samples refer to the prep worksheet or computer to determine which metals the sample needs to be analyzed for. Refer to the spike chart in the prep section for the amount of spiking solution to add. Adjust Eppendorf to correct amount. Add the correct amount of spiking solution to the sample. Record the amounts, lot numbers, and concentrations of spiking solutions in the prep notebook.
 - g. Transfer 100 mL of deionized water to a beaker for the method blank.
 - h. Prepare an LCS. Transfer 100 mL of deionized water to a beaker. Refer to the spike chart in the prep section for the amount of spiking solution to add. Adjust Eppendorf to correct amount. Add the correct amount of spiking solution. Record amounts, lot numbers, and concentrations of spiking solutions in the prep notebook.
3. Sample Digestion
- a. Add 3 mL of concentrated nitric acid to each beaker.
 - b. Heat without boiling until the volume is about 20 mL. Toward the end, watch the digesting samples very carefully; do not let them go dry! (See I.1.d).
 - c. Cool the beakers by removing them from the hot plate.
 - d. Add another 3-mL portion of concentrated nitric acid.
 - e. Cover beakers with watchglasses and continue to heat until the digestion is complete (the digestate will be clear and the color will be stable). Do not let the samples go dry! (See I.1.d).
 - f. Cool the beakers once more by removing them from the hot plate.

- g. If, and only if, the sample is to be analyzed by flame or ICP, add 10 mL of 1:1 hydrochloric acid (or 5 mL of concentrated hydrochloric acid and about 5 mL of deionized water) and heat for another 15 minutes. Do not add hydrochloric acid to samples which will be analyzed by graphite furnace. Cool the beakers by removing them from the hot plate.
- h. Fold a piece of 41 or 541 filter paper into quarters. Put filter paper into a disposable polystyrene funnel. Place funnel on top of a graduated cylinder or volumetric flask. Moisten the filter paper with deionized water. At this stage, the sample may be diluted to a convenient volume less than 100 mL. Pour sample into funnel. Rinse watchglass and beaker with deionized water 2 or 3 times into funnel. After all of sample has gone through funnel, remove funnel and dilute the sample to final volume (100 mL for most samples) with deionized water.
- i. Record the final volume and the type of prep (with or without HCl) in the prep book.
- j. Label a metals bottle with log number, any dilution factor, and indicate if HCl was included in the digestion. Pour sample into metals bottle. Mix well.

F. Quality Control

1. The work consists of two batches if some samples require HCl and others do not.
2. Prep a method blank for each type of prep with each batch of samples.
3. Prep at least one set of duplicate spikes with each batch.
4. Prep a laboratory control standard at a pre-determined concentration with each batch in order to validate the method.

G. Calculations and Data Review

None

H. Interferences

Diverse matrix types

003690

I. Troubleshooting

1. Poor spike recovery

- a. The spike amount may be inappropriate. The spike should be at least 50% of the concentration of analyte already in the sample.
- b. Be sure that samples do not bump while on the hotplate as this may lead to sample loss. If the sample bumps over, discard and redigest.
- c. For samples that have an unusual matrix, the procedure may need to be modified in order to digest samples properly. See group leader or supervisor if this should occur.
- d. If a sample digest is allowed to go to dryness, low recoveries will result. Should this occur, discard the sample and redigest.

2. Contamination is suspected (refer to SOP# PR01289)

- a. Reagents such as acids and oxidizers can become contaminated during use.
- b. Glassware must be scrupulously clean. Washing and rinsing procedures are established and followed to minimize contamination.
- c. Miscellaneous sources of contamination:

Disposable pipet tips
Pipetters & eppendorfs
Gloves
Hotplate

3. Widely divergent results for duplicates may result from poor homogenization of samples.

J. References

1. Test Methods for Evaluating Solid Waste, EPA Manual SW846, Third Edition, Methods 3010 and 3020.
2. Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Section 200.0.

Reviewed and approved
REVIEWER 03/04/92
Issued _____

003691

ME00288 Inductively Coupled Plasma Emission Spectroscopy

INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPECTROSCOPY

Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Thallium, Vanadium, Zinc

A. Summary

Inductively Coupled Plasma (ICP) may be used to determine the elements in the above list. A high temperature plasma is created by a radio frequency (RF) generator. The plasma dissociates aspirated sample into excited ions and atoms. Quantitation is achieved by measuring the amount of light emitted by the excited species. Concentration is related to emission using emission intensity versus concentration calibration curves.

B. Safety

1. Use appropriate caution when dealing with the lighted plasma.
2. Refer to the safety requirements in the instrument setup SOP for the particular instrument you are using.
3. Some working standards are hazardous and should be handled with caution and disposed of accordingly. These include: arsenic, chromium, lead, thallium, and selenium. NOTE: Most concentrated metals standards (1000 mg/L) are hazardous so exercise caution when preparing working standards.

C. Apparatus

1. ICP spectrometer equipped with autosampler and data acquisition computer system.
2. Disposable test tubes or 40 ml VOA vials, caps, and septa.
3. Argon gas supply.

4. Volumetric pipets.
5. Volumetric flasks.
6. Eppendorf pipets, 100uL and 1000uL, adjustable.
7. Reservoir for autosampler rinse.

D. Reagents

1. Nitric Acid, Fisher trace metal grade.
2. Hydrochloric Acid, reagent grade (Mallinckrodt) or intra-analyzed (J.T. Baker).
3. Argon, welding grade or better.
4. Standard stock solutions for each metal, manufactured by Spex Industries, Baker, Ricca, Mallinckrodt or AESAR. Stock solutions may contain mixes of compatible metals. Spex standards are supplied with certificates of traceability to NIST primary reference standards.
5. Calibration standards:

Only one calibration standard is required to determine the response factor for the instrument. Add about 900 mL of deionized water to a 1-L volumetric flask. Add 10 mL of concentrated nitric acid and 50 mL of concentrated hydrochloric acid. Then add the appropriate amount of the standard stock solution. Dilute to the mark with deionized water and mix well.

6. Calibration blank: A calibration standard prepared without standard stock solutions.
7. Calibration verification: A calibration standard at a concentration near the midpoint of the concentration range. This must be prepared from a different source (manufacturer and lot number) than the standard stock solutions used for the calibration standards.
8. Laboratory control standard (LCS):

A standard prepared by diluting the same standard stock solutions used for the calibration verification. The concentration should be lower than the calibration verification standard. The LCS must be digested in the same manner as an aqueous sample.

9. Interference check sample containing high concentrations of elements with potential for spectral emission interference with target elements.

10. Internal standard (Sc_2O_3) stock concentrate: Add 2g scandium oxide (99.9%) to 40 mL HCl in a small beaker. Cover with a watch glass and heat until solution clears. Dilute to 100 mL with DI water.
11. Internal standard working solution: Dilute stock concentrate to the desired concentration.

E. Procedure

1. Instrument Setup

- a. Refer to the instrument setup SOP for specific procedures.
- b. The analyst should set the operating conditions according to the instructions provided by the instrument's manufacturer. Sensitivity, instrumental detection limit, precision, linear dynamic range, and interference effects must be established for each individual analyte line on that particular instrument. All measurements must be within instrument linear range where coordination factors are valid. The analyst must (1) verify that the instrument configuration and operating conditions satisfy the analytical requirements and (2) maintain quality control data confirming instrument performance and analytical results.

2. Organizational Steps

- a. Assemble materials and reagents to analyze standards and samples.
- b. Prepare working area to make dilutions and add internal standard.
- c. Prepare or locate the calibration standards (including the calibration blank), calibration verification, interference check standard, LCS, samples and method blanks.
- d. Prepare the runlog. The file name, batch number, analysis date and analyst initials must appear near the top of the page. Create columns for log number, sample weight, dilution factor and elements analyzed (or element sequence file). A computer generated printout is acceptable.
- e. List the standards and samples in the runlog. Be sure to include method blanks, duplicates and spikes, calibration verifications, calibration blanks and interference check samples. Enter the weight for all

soil samples from the prep book or sample prep bottles. Any dilution made from the digests should be recorded in the dilution factor column.

3. Analysis of Samples

- a. Verify calibration and instrument performance by aspirating the calibration standard, the calibration blank, the interference check sample and the calibration verification standard before proceeding.
- b. Aspirate samples, spikes and duplicates. Run the calibration verification and the calibration blank every ten samples.
- c. Flush the system with calibration blank solution between samples.
- d. Any sample which has an emission intensity greater than that of the highest standard must be diluted. Use an eppendorf pipet to dilute the necessary volume in the calibration blank solution. Enter the dilution factor in the runlog as the amount of sample you used divided by the total volume.
- e. An internal standard may be used if viscosity or chemical effects are suspected. Add the same amount of internal standard working solution to samples and standards.

4. Instrument shut-down and clean-up procedures

- a. After all the samples have been aspirated, run the calibration verification, the calibration blank, and the interference check standard again to verify instrument conditions.
- b. Return the instrument to its initial state, either power off or the recommended wait state as defined in the instrument setup SOP.
- c. Put away samples, standards, eppendorfs and clean the work area.

F. Quality Control

1. Each of the following QC samples should be run at a frequency of one for every batch of twenty samples or less.
 - a. Matrix spike - the concentration of analyte added is generally at least 50% of the concentration in the sample or ten times the detection limit, which ever is

greater. CLP spike levels may be used. The LCS solution is used for spiking. If the spike recovery falls out of the control limits, document the fact. Check the LCS recovery. If the LCS is in control, matrix interferences may be assumed and the data reported. If the LCS is also out of control, check the spiking solution. If the solution is bad, recalculate results. If the solution is good, reprep and rerun the entire batch.

- b. Matrix spike duplicates - two separate digests must be prepared. The %RPD must fall within control limits. If the %RPD is out of control, document the fact and reprep the two spikes. Rerun. If the %RPD still fails the criteria, document.
 - c. Laboratory control standard. If the recovery falls out of the control limits, document the fact and check the spike recovery for the batch. If the spike recovery is also out of control, check the LCS solution. If the solution is bad, recalculate results based on the measured value and prepare a new solution. If the solution is good, then the entire batch must be reprepared and rerun. If the spike recovery is in control, document the fact.
 - d. Method blank. All compounds should be below the RDL. If not, document the fact. Report any samples less than the RDL or greater than ten times the method blank. Reprep all other samples.
- 2. Verify the response and linearity of the instrument using the calibration verification standard. Results must lie within 10 percent of the expected concentration. If higher, recalibrate and rerun samples greater than the RDL. If lower, recalibrate and rerun all samples since the last good calibration verification.
 - 3. Verify the interelement and background correction factors at the beginning and end of an analytical run. Do this by analyzing the interference check sample. Results should be within +20% of the true value for all values more than five times the MDL.

G. Calculations and Data Review

- 1. Obtain sample results through the software provided by the manufacturer.
- 2. Relative percent difference is calculated as follows:

$$\%RPD = \frac{S1 - S2}{(S1 + S2)/2} \times 100$$

where:

S1 = result of the matrix spike

S2 = result of the matrix spike duplicate

3. Spike recovery is calculated as follows:

$$\%REC = \frac{S - R}{T - R} \times 100$$

where:

S = average of duplicate spike results

R = original sample result

T = concentration of the spike added plus the original sample result

H. Interference

Refer to section 3.0 of method 6010 in Volume 1A, Test Methods for Evaluating Solid Waste, EPA SW-846, November, 1986. Spectral, physical, and chemical interferences are discussed along with element by element wavelength interference equivalents.

I. References

1. Test Methods for Evaluating Solid Waste, Volume 1A, USEPA SW-846, Third Edition, November 1986, Method 6010.
2. Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 200.7.

Reviewed and approved
T. Kirk 07/15/91
Issued _____

Standards Documentation

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 12:33:27 29 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: LCS HCL
Date Prepared: 11/22/93
Prepared by: Brian Moore
Type: Lab Control Standard

Reference #: ME9311014
Expiration Date: 11/22/94
Total Volume: 2000 ML

Solvent	Manufacturer	Lot#	%
HN03			5
HCL			5

Source	Amount	Component	Final Concentration
ME9207005	10.0000 ML	Iron (6010)	50.0000 PPM
ME9310023	100.0000 ML	Calcium (6010)	500.0000 PPM
ME9310009	10.0000 ML	Aluminum (6010)	50.0000 PPM
ME9310024	100.0000 ML	Magnesium (6010)	500.0000 PPM
ME9306024	100.0000 ML	Potassium (6010)	500.0000 PPM
ME9302012	100.0000 ML	Sodium (6010)	500.0000 PPM
ME9307007	100.0000 ML	Arsenic (6010)	50.0000 PPM
ME9307008	100.0000 ML	Selenium (6010)	50.0000 PPM
ME9306013	20.0000 ML	Boron (6010)	10.0000 PPM
ME9309002	20.0000 ML	Barium (6010)	10.0000 PPM
ME9305012	20.0000 ML	Manganese (6010)	10.0000 PPM
ME9308005	20.0000 ML	Thallium (6010)	10.0000 PPM
ME9307005	20.0000 ML	Cobalt (6010)	10.0000 PPM
ME9311012	20.0000 ML	Chromium (6010)	10.0000 PPM
ME9311010	20.0000 ML	Copper (6010)	10.0000 PPM
ME9303002	20.0000 ML	Molybdenum (6010)	10.0000 PPM
ME9309004	20.0000 ML	Nickel (6010)	10.0000 PPM
ME9308010	20.0000 ML	Lead (6010)	10.0000 PPM
		Magnesium (6010)	0.0100 PPM
		Silicon	0.0100 PPM
ME9302009	20.0000 ML	Vanadium (6010)	10.0000 PPM
ME9302010	20.0000 ML	Zinc (6010)	10.0000 PPM
ME9303022	10.0000 ML	Cadmium (6010)	5.0000 PPM
ME9207012	10.0000 ML	Beryllium (6010)	5.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

003700

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 13:51:43 10 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: SB 1000 PPM
Manufacturer: RICCA
Expiration Date: 11/30/94
Received by: GRETA GALOUSTIAN
Type: Stock Solution,
Calibration Verification

Reference #:ME9308002
Lot #:C028
Date Opened:
Date received: 08/02/93

Traceable Source: NIST SRM 3102
Total Volume: 300 ML

Solvent: 20% HCL
Certificate (Y/N): Y

Component

Concentration Units

Antimony (6010)

1,000.0000 PPM

Disposal Method:
Hazard Class:

Disposal Date:

End of Report

003701

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 13:51:43 10 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: AG 1000 PPM
Manufacturer: RICCA
Expiration Date: 02/28/94
Received by: GRETA GALOUSTIAN
Type:

Reference #: ME9302011
Lot #: F038
Date Opened:
Date received: 02/24/93

Traceable Source: NIST 3151
Total Volume: 500 ML

Solvent: 5%HN03
Certificate (Y/N): Y

Component

Concentration Units

Silver (6010)

1,000.0000 PPM

Disposal Method:
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 13:51:43 10 DEC 1993 - P. 1 :

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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: AQ SPIKE HCL
Date Prepared: 11/23/93
Prepared by: Brian Moore
Type: Spike Solution

Reference #: ME9311015
Expiration Date: 11/22/94
Total Volume: 2000 ML

Solvent	Manufacturer	Lot#	%
HN03			5
HCL			5

Source	Amount	Component	Final Concentration
ME9207005	0.6000 ML	Iron (6010)	3.0000 PPM
ME9310023	100.0000 ML	Calcium (6010)	500.0000 PPM
ME9310009	2.0000 ML	Aluminum (6010)	10.0000 PPM
ME9310024	100.0000 ML	Magnesium (6010)	500.0000 PPM
ME9306024	20.0000 ML	Potassium (6010)	100.0000 PPM
ME9302012	100.0000 ML	Sodium (6010)	500.0000 PPM
ME9307007	60.0000 ML	Arsenic (6010)	30.0000 PPM
ME9307008	60.0000 ML	Selenium (6010)	30.0000 PPM
ME9306013	40.0000 ML	Boron (6010)	20.0000 PPM
ME9309002	10.0000 ML	Barium (6010)	5.0000 PPM
ME9305012	1.0000 ML	Manganese (6010)	0.5000 PPM
ME9308005	60.0000 ML	Thallium (6010)	30.0000 PPM
ME9307005	10.0000 ML	Cobalt (6010)	5.0000 PPM
ME9311012	4.0000 ML	Chromium (6010)	2.0000 PPM
ME9311010	10.0000 ML	Copper (6010)	5.0000 PPM
ME9303002	60.0000 ML	Molybdenum (6010)	30.0000 PPM
ME9309004	10.0000 ML	Nickel (6010)	5.0000 PPM
ME9308010	60.0000 ML	Lead (6010)	30.0000 PPM
		Magnesium (6010)	0.0300 PPM
		Silicon	0.0300 PPM
ME9302009	10.0000 ML	Vanadium (6010)	5.0000 PPM
ME9302010	10.0000 ML	Zinc (6010)	5.0000 PPM
ME9303022	10.0000 ML	Cadmium (6010)	5.0000 PPM
ME9207012	2.0000 ML	Beryllium (6010)	1.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 12:54:42 14 DEC 1993 - P. 1 :

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: STD BAIRD

Date Prepared: 06/07/93

Prepared by: Ebrahim Tavasolian

Type: Stock Solution

Reference #: ME9306016

Expiration Date: 12/07/93

Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
5%HCL			
2%HN03			

Source	Amount	Component	Final Concentration
ME9208018	2.0000 ML	Silver (6010)	2.0000 PPM
ME9210012	2.0000 ML	Aluminum (6010)	20.0000 PPM
ME9211003	10.0000 ML	Arsenic (6010)	10.0000 PPM
ME9208008	4.0000 ML	Boron (6010)	4.0000 PPM
ME9211006	20.0000 ML	Barium (6010)	20.0000 PPM
ME9208013	0.4000 ML	Beryllium (6010)	0.4000 PPM
ME9210013	2.0000 ML	Cadmium (6010)	2.0000 PPM
ME9208016	4.0000 ML	Cobalt (6010)	4.0000 PPM
ME9210018	5.0000 ML	Chromium (6010)	5.0000 PPM
ME9208014	20.0000 ML	Copper (6010)	20.0000 PPM
ME9210020	2.0000 ML	Iron (6010)	20.0000 PPM
ME9208010	2.0000 ML	Manganese (6010)	2.0000 PPM
ME9208007	4.0000 ML	Molybdenum (6010)	40.0000 PPM
ME9208012	4.0000 ML	Nickel (6010)	4.0000 PPM
ME9208015	20.0000 ML	Lead (6010)	20.0000 PPM
ME9208009	4.0000 ML	Antimony (6010)	4.0000 PPM
ME9208011	10.0000 ML	Selenium (6010)	10.0000 PPM
ME9208020	10.0000 ML	Thallium (6010)	10.0000 PPM
ME9208019	4.0000 ML	Vanadium (6010)	4.0000 PPM
ME9211001	20.0000 ML	Zinc (6010)	20.0000 PPM

Disposal Method:

Verification Date:

Hazard Class:

Disposal Date:

STD WERE USED UP.

003704

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 12:53:23 14 DEC 1993 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: GM ET
Date Prepared: 08/04/93
Prepared by: Ebrahim Tavasolian
Type:

Reference #:ME9308004
Expiration Date: 08/04/93
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
<u>HN03</u>	<u>BAKER</u>	<u> </u>	<u>2</u>
HCL	FISHER		5

Source	Amount	Component	Final Concentration
ME9302005	30.0000 ML	Calcium (6010)	300.0000 PPM
ME9208017	10.0000 ML	Potassium (6010)	10.0000 PPM
ME9302006	30.0000 ML	Magnesium (6010)	300.0000 PPM
ME9211002	30.0000 ML	Sodium (6010)	300.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

003705

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 12:53:49 14 DEC 1993 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: CVBAIRD
Date Prepared: 06/14/93
Prepared by: Ebrahim Tavasolian
Type: Calibration Verification

Reference #: ME9306015
Expiration Date: 12/14/94
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
5%HCL			
2%HNO3			

Source	Amount	Component	Final Concentration
ME9304006	0.5000 ML	Aluminum (6010)	5.0000 PPM
ME9206010	5.0000 ML	Cadmium (6010)	5.0000 PPM
ME9207012	0.2000 ML	Beryllium (6010)	0.2000 PPM
ME9305015	5.0000 ML	Arsenic (6010)	5.0000 PPM
ME9303019	1.0000 ML	Chromium (6010)	1.0000 PPM
ME9303024	2.0000 ML	Copper (6010)	2.0000 PPM
ME9210017	1.0000 ML	Iron (6010)	10.0000 PPM
ME9212016	2.0000 ML	Potassium (6010)	20.0000 PPM
ME9304007	5.0000 ML	Magnesium (6010)	50.0000 PPM
ME9303020	2.0000 ML	Manganese (6010)	2.0000 PPM
ME9302012	5.0000 ML	Sodium (6010)	50.0000 PPM
ME9208005	2.0000 ML	Nickel (6010)	2.0000 PPM
ME9305020	5.0000 ML	Selenium (6010)	5.0000 PPM
ME9212017	5.0000 ML	Thallium (6010)	5.0000 PPM
ME9302010	10.0000 ML	Zinc (6010)	10.0000 PPM
ME9211014	0.2000 ML	Boron (6010)	0.2000 PPM
ME9212004	2.0000 ML	Cobalt (6010)	2.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

PREVIOUS CV WAS USED UP.

003706

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 12:53:50 14 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: ICSA
Date Prepared: 02/05/93
Prepared by: Brian Moore
Type: Interference Check Standard

Reference #: ME9302002
Expiration Date: 02/05/94
Total Volume: 2000 ML

Solvent	Manufacturer	Lot#	%
HNO3			2
HCL			5

Source	Amount	Component	Final Concentration
ME9207015	100.0000 ML	Calcium (6010)	500.0000 PPM
ME9207014	100.0000 ML	Magnesium (6010)	500.0000 PPM
ME9210012	100.0000 ML	Aluminum (6010)	500.0000 PPM
ME9210020	40.0000 ML	Iron (6010)	200.0000 PPM

Disposal Method:
Verification Date:
Hazard Class:

Disposal Date:

003707

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 12:53:52 14 DEC 1993 - P. 1 :

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: ICSAB
Date Prepared: 04/07/93
Prepared by: Ebrahim Tavasolian
Type: Interference Check Standard

Reference #: ME9304003
Expiration Date: 04/07/93
Total Volume: 2000 ML

Solvent	Manufacturer	Lot#	%
HCL	BAKER	9530-33	5
HN03	FISHER	A509-212	2
H2O	COLLIGON		93

Source	Amount	Component	Final Concentration
ME9303021	1.0000 ML	Barium (6010)	0.5000 PPM
ME9207012	1.0000 ML	Beryllium (6010)	0.5000 PPM
ME9206010	2.0000 ML	Cadmium (6010)	1.0000 PPM
ME9212004	1.0000 ML	Cobalt (6010)	0.5000 PPM
ME9207002	1.0000 ML	Calcium (6010)	5.0000 PPM
ME9207008	1.0000 ML	Copper (6010)	0.5000 PPM
ME9207009	1.0000 ML	Manganese (6010)	0.5000 PPM
ME9208005	2.0000 ML	Nickel (6010)	1.0000 PPM
ME9302008	2.0000 ML	Lead (6010)	1.0000 PPM
ME9302009	1.0000 ML	Vanadium (6010)	0.5000 PPM
ME9302010	2.0000 ML	Zinc (6010)	1.0000 PPM
ME9207007	100.0000 ML	Aluminum (6010)	500.0000 PPM
ME9303001	100.0000 ML	Calcium (6010)	500.0000 PPM
ME9301005	100.0000 ML	Magnesium (6010)	500.0000 PPM
ME9210017	40.0000 ML	Iron (6010)	200.0000 PPM
ME9302011	2.0000 ML	Silver (6010)	1.0000 PPM

Disposal Method: USED UP
Verification Date:
Hazard Class:

Disposal Date: 04/06/93

003708

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 12:53:53 14 DEC 1993 - P. 1 :

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: CERT.RPD.FOR ICP
Date Prepared: 06/21/93
Prepared by: Ebrahim Tavasolian
Type: Interference Check Standard

Reference #:ME9306019
Expiration Date: 06/21/94
Total Volume: 1000 ML

Solvent	Manufacturer	Lot#	%
HN03	FISHER	1S92-9	2
HCL	BAKER	9S30-33	5

Source	Amount	Component	Final Concentration
ME9302011	20.0000 UL	Silver (6010)	0.0200 PPM
ME9207012	10.0000 UL	Beryllium (6010)	0.0100 PPM
ME9303022	10.0000 UL	Cadmium (6010)	0.0100 PPM
ME9212004	100.0000 UL	Cobalt (6010)	0.1000 PPM
ME9303019	20.0000 UL	Chromium (6010)	0.0200 PPM
ME9303024	50.0000 UL	Copper (6010)	0.0500 PPM
ME9303020	30.0000 UL	Manganese (6010)	0.0300 PPM
ME9208005	80.0000 UL	Nickel (6010)	0.0800 PPM
ME9306014	120.0000 UL	Antimony (6010)	0.1192 PPM
ME9302009	100.0000 UL	Vanadium (6010)	0.1000 PPM
ME9302010	40.0000 UL	Zinc (6010)	0.0400 PPM

Disposal Method:
Verification Date:
Hazard Class: Corrosive

Disposal Date:

PREVIOUS CRI WERE USED UP.

003709

Prep Logs for Metals

003710

From Page No. G #	CLIENT	SAMPLE ID	MATRIX	VOLUME Initial-Final √=100-100	PRE FILT	Comments
	(Cup)	Dry Ag	H ₂ O ₂	12/8/03	0177	(Cup)
Blank LCS				✓		
93-11-380-1	Continent AL	As HCl	hw	✓		-10wls ME4309007
93-11-381-1	↓			✓		
93-11-373-1	Metro Rail			✓		
-15px	↓			✓		
-10px	↓			✓		3 10wls ME4311016
93-12-007-1	Anteus			✓		
93-11-335-1	Continent AL	11/22/03		✓		7 Reprep
-15px	↓			✓		
-10px	↓			✓		
	(Cup)	Dry Ag	HCl	12/8/03	01724	(Cup)
Blank LCS				✓		
12-005-1	LA Dup	w 14072	SW	✓		-10wls ME4311024 30wls ME4308002 50wls ME4302011
-3	↓	w 14075		✓		
-5	↓	w 14078		✓		
-7	↓	w 14081		✓		
-9	↓	w 19084		✓		
93-12-018-12	Jacobs. Mn	MC-077204	BW	✓		
-12px	↓			✓		
-120px	↓			✓		10wls ME4311015 30wls ME4308002 50wls ME4302011
93-12-040-20		MC-077504		✓		
93-11-380-1	Continent AL	24wls	hw	✓		
93-11-381-1	↓	11/29/03		✓		
93-11-373-1	Metro Rail	2d-059		✓		
93-11-378-1	Sensor SLO	GW-1	GW	✓		
-22	↓	GW-3		✓		
-3	↓	GW-4		✓		
-4	↓	GW-5		✓		
-5	↓	GW-6		✓		
-6	↓	Equipment Blot	BW	✓		

Processed & Understood by me,

Date

Invented by

Date

Recorded by

To Page No. _____

003711

From Page No. — LOG #	CLIENT	SAMPLE ID	MATRIX	VOLUME Initial final √=100-100	PRE FILT	Comments
		Dig AQ	HCl 3010	12/21/93	(3m)	
BL				✓		10ml ME-9311014
LCS				✓		01783
93-12-162-1	BLANA	mw 89	GW	✓	✓	
-131	↓	↓	↓	✓	✓	
-132	↓	↓	↓	✓	✓	10ml ME-9311015
93-12-066-1	Secor. SLO	GW-1	BRWGW	✓	✓	
93-12-198-1	Ocema	WR 24193	WWRW	✓		
93-12-215-1	Sealright	Wastewater P09195	WW	✓		
-2	↓	↓	↓	✓		
-3	↓	Recycled water 4195	↓	✓		
93-12-242-1	Six	Permit 9333	↓	✓		
-2	↓	Permit 9334	↓	✓		
Dig, AQ, H2O2 20ml 12/21/93 (3m)						
BL				✓		01784
LCS				✓		10ml ME-9309007
93-12-216-1	BC Irvine	—	WW	✓		
-131	↓	—	↓	✓		10ml ME-9311016
-132	↓	—	↓	✓		
93-12-169-1	Anheuser	Hydroguard 2	↓	✓		
93-12-174-1	Arrow 20th	Effluent	↓	✓		
93-12-175-1	Continental Al	W-327560	↓	✓		
93-12-176-1	↓	W-346887	↓	✓		
93-12-227-1	Ortel	SB#1	↓	✓		
-2	↓	SB#2	↓	✓		
93-12-190-1	—	—	—	—	—	—
93-12-244-1	Align nte	Effluent tank	WW	✓		
93-12-229-1	Law Crandall	Sump	↓	✓		
93-12-213-1	Metro. ES	BCA 12140 00401	↓	✓		
-2	↓	outfall 00402	↓	✓		
-3	↓	005	↓	✓		
-4	↓	007	↓	✓		
-5	↓	009	↓	✓		
-6	↓	010	↓	✓		
-7	↓	011	↓	✓		
-8	↓	TEP BLANK	↓	✓		

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by

To Page No. _____

003712

Raw Data for Metals

METALS ICP REPORT

Date analyzed: 10-Dec-1993

Run number: E3440BM

Equip number: 535-02

Analyst initials: BM

Batch numbers:

931724

STANDARD REFERENCE DOCUMENTATION:

NAME	NUMBER	EXP DATE
ET	ME9306016	06/07/94
GM	ME9308004	08/30/94
CV	ME9306015	06/14/94
ICSA	ME9302002	02/05/94
ICSAB	ME9304003	04/07/94
CRI	ME9306019	06/21/94

COMMENTS:

Analyst: 12/10/93 BM

Reviewed & Approved: 12/13/93 [Signature]

003714

AMPLE ID	TIME	DIL	WT	Ca READ	Ca CONC	% REC	FLAGS
LANK	10:55	1		0.86666	<0.5		
TD-ET	10:56	1		312.8130	0		
TD-GM	10:58	1		449.7003	300		
CV	11:00	1		153.6320	154		<u>103</u>
	11:02	1		0.31597	<0.5		
CSAI	11:04	1		481.8319	482		
CSABI	11:06	1		491.2521	491		
RII	11:08	1		3.17397	3.2		
IBW-931724	11:10	1		0.09561	0.10		
312018*12*R1	11:12	1		0.19694	<0.5		
312018*12*S1	11:14	1		45.99580	46.0 - 0 / 50.0		92
312018*12*S2	11:16	1		46.97953	47.0 - 0 / 50.0	RPD = 2.2	94
312040*20	11:18	1		0.40372	<0.5		
311373*1	11:20	1		198.8058	200		
311380*1	11:22	1		41.04047	41		
311381*1	11:24	1		48.57821	49		
312007*1	11:25	1		37.64504	38		
CW-931724	11:27	1		48.08055	48.1 / 50.0		96
CV1	11:29	1		149.9598	150		<u>100</u>
CB1	11:31	1		0.46290	<0.5		
311378*1*R1	11:33	1		86.39953	86		
311378*1*S1	11:35	1		140.4089	140 - 86 / 50.0		108
311378*1*S2	11:37	1		131.8211	132 - 86 / 50.0	RPD = 5.9	92
311378*2	11:39	1		82.39430	82		
311378*3	11:41	1		79.64350	80		
311378*4	11:43	1		83.20935	83		
311378*5	11:45	1		97.03875	97		
311378*6	11:47	1		0.42408	<0.5		
311378*7	11:49	1		24.61044	25		
311378*8	11:51	1		138.7830	140		
311378*9	11:53	1		150.1970	150		<u>100</u>
CCB2	11:55	1		0.42099	<0.5		
9312005*1	11:57	1		219.3209	220		
9312005*3	11:59	1		233.2705	230		
9312005*5	12:01	1		231.9830	230		
9312005*7	12:02	1		270.6980	270		
9312005*9	12:04	1		270.6550	270		
CRIF	12:06	1		440.3540	440		
ICSAF	12:08	1		448.1769	448		
ICSAF	12:10	1		2.28773	2.29		
CCV3	12:12	1		139.1984	139		<u>93</u>
CCB3	12:14	1		0.43543	<0.5		

003715

MPLE ID	TIME	DIL	WT	K READ	K CONC	% REC	FLAGS
ANK	10:55	1		8.81666	<0.5		
D-ET	10:56	1		42.22836	0		
D	10:58	1		87.09690	100		
	11:00	1		48.53085	48.5	<u>97</u>	
B	11:02	1		0.09535	<0.5		
SAI	11:04	1		-0.06691	<0.5		
SABI	11:06	1		-0.04215	<0.5		
.II	11:08	1		-0.11977	<0.5		
W-931724	11:10	1		-0.06055	0		
12018*12*R1	11:12	1		-0.10940	<0.5		
12018*12*S1	11:14	1		8.64259	8.64 - 0 / 10.0	86	
12018*12*S2	11:16	1		8.84534	8.85 - 0 / 10.0	89	RPD = 2.4
12040*20	11:18	1		-0.03412	<0.5		
11373*1	11:20	1		3.19892	3.2		
11380*1	11:22	1		9.23802	9.2		
11381*1	11:24	1		8.54116	8.5		
12007*1	11:25	1		30.42990	30		
W-931724	11:27	1		45.54771	45.5 / 50.0	91	
CV1	11:29	1		48.75602	48.8	<u>98</u>	
CB1	11:31	1		0.08331	<0.5		
11378*1*R1	11:33	1		3.34781	3.3		
11378*1*S1	11:35	1		13.00553	13.0 - 3.3 / 10.0	97	
11378*1*S2	11:37	1		12.28485	12.3 - 3.3 / 10.0	90	RPD = 5.5
11378*2	11:39	1		3.63722	3.6		
11378*3	11:41	1		3.33143	3.3		
11378*4	11:43	1		3.18552	3.2		
11378*5	11:45	1		3.61984	3.6		
11378*6	11:47	1		-0.08364	<0.5		
11378*7	11:49	1		1.87265	1.9		
11378*8	11:51	1		6.21517	6.2		
CV2	11:53	1		48.93302	48.9	<u>98</u>	
CB2	11:55	1		-0.01873	<0.5		
312005*1	11:57	1		283.0578	280		
312005*3	11:59	1		312.9561	310		
312005*5	12:01	1		302.9665	300		
312005*7	12:02	1		374.1297	370		
312005*9	12:04	1		366.1476	370		
RIF	12:06	1		1.38684	1.4		
CSABF	12:08	1		0.36468	<0.5		
CSAF	12:10	1		0.10238	<0.5		
CV3	12:12	1		45.90136	45.9	<u>92</u>	
CB3	12:14	1		0.29275	<0.5		

003716

AMPLE ID	TIME	DIL	WT	Mg READ	Mg CONC	% REC	FLAGS
ANK	10:55	1		-2.36666	<0.1		
FD-F	10:56	1		214.9640	0		
FD	10:58	1		314.5458	300		
	11:00	1		150.1111	150	<u>100</u>	
CB	11:02	1		0.05922	<0.1		
SAI	11:04	1		483.1572	483		
SABI	11:06	1		495.2229	495		
RII	11:08	1		2.90362	2.9		
3W-931724	11:10	1		0.08387	0.08		
312018*12*R1	11:12	1		0.03606	<0.1		
312018*12*S1	11:14	1		44.00222	44.0 - 0 / 50.0		88
312018*12*S2	11:16	1		45.04810	45.0 - 0 / 50.0	RPD = 2.2	90
312040*20	11:18	1		0.26335	0.26		
311373*1	11:20	1		84.64121	85		
311380*1	11:22	1		14.63134	15		
311381*1	11:24	1		14.46863	14		
312007*1	11:25	1		19.87581	20		
CW-931724	11:27	1		46.33384	46.3 / 50.0		93
CV1	11:29	1		146.9600	147		<u>98</u>
CB1	11:31	1		0.01664	<0.1		
311378*1*R1	11:33	1		18.59342	19		
311378*1*S1	11:35	1		66.03772	66.0 - 19 / 50.0		94
311378*1*S2	11:37	1		62.29706	62.3 - 19 / 50.0	RPD = 5.8	87
311378*2	11:39	1		17.61380	18		
311378*3	11:41	1		17.33283	17		
311378*4	11:43	1		17.67587	18		
311378*5	11:45	1		21.26472	21		
311378*6	11:47	1		0.04341	<0.1		
311378*7	11:49	1		7.30938	7.3		
311378*8	11:51	1		2.69730	2.7		
CV2	11:53	1		147.2922	147		<u>98</u>
CB2	11:55	1		0.09084	<0.1		
312005*1	11:57	1		749.2304	750		
312005*3	11:59	1		810.0078	810		
312005*5	12:01	1		793.5547	790		
312005*7	12:02	1		953.5710	950		
312005*9	12:04	1		944.9952	940		
RIF	12:06	1		444.4213	440		
CSABF	12:08	1		457.6553	458		
CSAF	12:10	1		2.15884	2.16		
CV3	12:12	1		138.0152	138		<u>92</u>
CB3	12:14	1		0.09174	<0.1		

003717

AMPLE ID	TIME	DIL	WT	Na READ	Na CONC	% REC	FLAGS
BLANK	10:55	1		12.96666	<0.5		
TD-ET	10:56	1		161.9490	0		
TD	10:58	1		239.6060	300		
CB	11:00	1		150.9953	151	<u>101</u>	
CSAI	11:02	1		0.14777	<0.5		
CSABI	11:04	1		-2.55000	<0.5		ICSA > ABS 5 x DL
CSABI	11:06	1		-2.75676	<0.5		
RII	11:08	1		-0.46053	<0.5		
IBW-931724	11:10	1		-0.42626	0		
9312018*12*R1	11:12	1		-0.40063	<0.5		
9312018*12*S1	11:14	1		46.5172	46.5 - 0 / 50.0	93	
9312018*12*S2	11:16	1		45.71776	45.7 - 0 / 50.0	91	RPD = 1.7
9312040*20	11:18	1		-0.12690	<0.5		
9311373*1	11:20	1		329.1374	330		
9311380*1	11:22	1		161.4783	160		
9311381*1	11:24	1		139.1980	140		
9312007*1	11:25	1		405.5270	410		
CW-931724	11:27	1		48.86345	48.9 / 50.0	98	
CCV1	11:29	1		150.0729	150	<u>100</u>	
CCB1	11:31	1		-0.00155	<0.5		
9311378*1*R1	11:33	1		24.20131	24		
9311378*1*S1	11:35	1		73.77833	73.8 - 24 / 50.0	100	
9311378*1*S2	11:37	1		69.36128	69.4 - 24 / 50.0	91	RPD = 6.1
9311378*2	11:39	1		23.98724	24		
9311378*3	11:41	1		22.91756	23		
9311378*4	11:43	1		22.58469	23		
9311378*5	11:45	1		23.30932	23		
9311378*6	11:47	1		-0.27818	<0.5		
9311378*7	11:49	1		77.94584	78		
9311378*8	11:51	1		9.74020	9.7		
CCV2	11:53	1		150.3606	150	<u>100</u>	
CCB2	11:55	1		-0.19331	<0.5		
9312005*1	11:57	1		4419.877	4400		
9312005*3	11:59	1		4592.755	4600		
9312005*5	12:01	1		4460.631	4500		
9312005*7	12:02	1		4948.186	4900		
9312005*9	12:04	1		4830.891	4800		
CRIF	12:06	1		22.72433	23		
ICSA BF	12:08	1		-0.67755	<0.5		
ICSA F	12:10	1		0.28544	<0.5		
CCV3	12:12	1		141.6799	142	<u>95</u>	
CCB3	12:14	1		0.62442	0.62		

003718

METALS ICP REPORT

Date analyzed: 21-Dec-1993

Run number: E3550ET

Equip number: 535-02

Analyst initials: ET

Batch numbers:

931783

STANDARD REFERENCE DOCUMENTATION:

NAME	NUMBER	EXP DATE
ET	ME9306016	06/07/94
GM	ME9308004	08/30/94
CV	ME9306015	06/14/94
ICSA	ME9302002	02/05/94
ICSAB	ME9304003	04/07/94
CRI	ME9306019	06/21/94

COMMENTS:

Analyst: 12/21/93

Reviewed & Approved: 12/22/93

003719

PLE ID	TIME	DIL	WT	Ca READ	Ca CONC	% REC	FLAGS
NK	17:15	1		-8.10000	<0.5		
-ET	17:17	1		346.0432	0		
-GM	17:19	1		466.2525	300		
	17:21	1		155.6956	156	104	
	17:22	1		0.14306	<0.5		
AI	17:24	1		506.6768	507		
ABI	17:26	1		516.3222	516		
I	17:28	1		0.47437	<0.5		
I-931783	17:29	1		0.00366	0		
2162*1*R1	17:31	1		508.2584	510		
2162*1*S1	17:33	1		543.1846	543 - 510 / 50.0	NC	SX > 4 x SPIKE
2162*1*S2	17:35	1		582.1510	582 - 510 / 50.0	NC	RPD = 6.9
2066*1	17:37	1		91.45268	91		
2198*1	17:38	1		1.05232	1.1		
I1	17:40	1		158.3518	158	105	
I1	17:42	1		0.11300	<0.5		
2215*1	17:44	1		192.6343	190		
2215*2	17:45	1		365.8317	370		
2215*3	17:47	1		372.2720	370		
2242*1	17:49	1		63.06532	63		
2242*2	17:51	1		69.25639	69		
I-931783	17:53	1		55.64901	55.6 / 50.0	111	
IF	17:54	1		0.02487	<0.5		
SAF	17:56	1		548.0331	548		
SABF	17:58	1		551.7586	552		
V2	18:00	1		157.9676	158	105	
B2	18:01	1		0.05750	<0.5		

003720

MPLE ID	TIME	DIL	WT	K READ	K CONC	% REC	FLAGS
ANK	17:15	1		17.23333	<0.5		
D-ET	17:17	1		58.03974	0		
	17:19	1		104.9254	100		
	17:21	1		50.18580	50.2	<u>100</u>	
B	17:22	1		-0.11386	<0.5		
SAI	17:24	1		-0.06444	<0.5		
SABI	17:26	1		-0.12165	<0.5		
II	17:28	1		-0.18052	<0.5		
HW-931783	17:29	1		-0.18163	0		
112162*1*R1	17:31	1		16.79525	17		
112162*1*S1	17:33	1		26.96884	27.0 - 17 / 10.0	100	
112162*1*S2	17:35	1		27.55263	27.6 - 17 / 10.0	106	RPD = 2.2
112066*1	17:37	1		3.78349	3.8		
112198*1	17:38	1		0.17964	<0.5		
CV1	17:40	1		49.43565	49.4	<u>99</u>	
CB1	17:42	1		-0.08831	<0.5		
312215*1	17:44	1		7.59482	7.6		
312215*2	17:45	1		6.54140	6.5		
312215*3	17:47	1		5.91150	5.9		
312242*1	17:49	1		8.69991	8.7		
312242*2	17:51	1		19.42397	19		
CH-931783	17:53	1		46.50864	46.5 / 50.0	93	
RIF	17:54	1		-0.11858	<0.5		
CSAF	17:56	1		-0.11137	<0.5		
CSABF	17:58	1		-0.10999	<0.5		
CV2	18:00	1		48.07948	48.1	<u>96</u>	
CB2	18:01	1		-0.12275	<0.5		

003721

MPLE ID	TIME	DIL	WT	Mg READ	Mg CONC	% REC	FLAGS
ANK	17:15	1		-3.80000	<0.1		
D-F	17:17	1		281.0951	0		
	17:19	1		374.5959	300		
	17:21	1		152.8128	153	102	
B	17:22	1		0.11761	0.12		
SAI	17:24	1		497.7982	498		
SABI	17:26	1		511.4771	511		
II	17:28	1		0.39509	0.40		
W-931783	17:29	1		-0.02183	0		
12162*1*R1	17:31	1		364.8892	360		
12162*1*S1	17:33	1		402.3419	402 - 360 / 50.0	NC	SX > 4 x SPIKE
12162*1*S2	17:35	1		417.4525	417 - 360 / 50.0	NC	
12066*1	17:37	1		18.72984	19		
12198*1	17:38	1		0.26339	0.26		
VI	17:40	1		158.3307	158	105	
BI	17:42	1		0.07183	<0.1		
12215*1	17:44	1		86.84814	87		
12215*2	17:45	1		182.1016	180		
12215*3	17:47	1		204.1858	200		
12242*1	17:49	1		20.61655	21		
12242*2	17:51	1		23.86390	24		
W-931783	17:53	1		50.38077	50.4 / 50.0	101	
RIF	17:54	1		0.00352	<0.1		
CSAF	17:56	1		512.8004	513		
CSABF	17:58	1		522.5565	523		
CV2	18:00	1		156.7440	157	105	
CB2	18:01	1		0.01338	<0.1		

Rerun Dil. on E3501 ET

RPD = 3.7

003722

PLE ID	TIME	DIL	WT	Na READ	Na CONC	% REC	FLAGS
NK	17:15	1		76.23333	<0.5		
ET	17:17	1		265.2926	0		
G	17:19	1		350.8481	300		
	17:21	1		152.3581	152	101	
	17:22	1		-1.55601	<0.5		CAL BLANK > ABS DET LIM
SAI	17:24	1		-1.38358	<0.5		
SAB1	17:26	1		-1.78913	<0.5		
II	17:28	1		-2.30918	<0.5		
W-931783	17:29	1		-2.21538	0		
12162*1*R1	17:31	1		2271.722	2300		SX > 4 x SPIKE
12162*1*S1	17:33	1		2215.802	2220 - 2300 / 50.0	NC	
12162*1*S2	17:35	1		2162.905	2160 - 2300 / 50.0	NC	
12066*1	17:37	1		27.36953	27		
12198*1	17:38	1		0.83594	0.84		
V1	17:40	1		149.4806	149	99	
B1	17:42	1		-1.70085	<0.5		CAL BLANK > ABS DET LIM
12215*1	17:44	1		187.0787	190		
12215*2	17:45	1		426.7391	430		
12215*3	17:47	1		420.1205	420		
12242*1	17:49	1		76.21011	76		
12242*2	17:51	1		82.83006	83		
W-931783	17:53	1		46.40723	46.4 / 50.0	93	
IF	17:54	1		-2.02778	<0.5		
SAF	17:56	1		-1.70223	<0.5		
SABF	17:58	1		-1.86224	<0.5		
V2	18:00	1		145.1395	145	97	
B2	18:01	1		-2.26366	<0.5		CAL BLANK > ABS DET LIM

003723

APPENDIX E
FUELS (EPA 8015 MODIFIED)

MDL Summary

(Inst 536-25)

003725

der No.: 69705241
ported:

REPORT OF MDL RESULTS

Page 1

PARAMETER	CONC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AVG	SD	MDL	RDL(AQ)	RDL(WAQ)
12538/Mod SN8015 536-23	0.125	0.125	0.121	0.123	0.126	0.126	0.132	0.113	0.123714	0.005823	0.018284	1 mg/L	10 mg/kg
Fuel Hydrocarbons, as Diesel	DIESEL	DIESEL	DIESEL	DIESEL	DIESEL	DIESEL	DIESEL	DIESEL	N/A	N/A	N/A	DIESEL	DIESEL
Fuel Character	0.060	0.058	0.070	0.063	0.068	0.068	0.069	0.062	0.065571	0.004577	0.014372	---	---
Naphthalene reported	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	N/A	N/A	N/A	---	---
Naphthalene theoretical													

003726

Order No.: 69207364
Reported: 08.07.92

REPORT OF MDL RESULTS

Page 1

PARAMETER	CONC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AUG	SD	MDL	MDL(AQ)	MDL(MAQ)
PH - Modified 8015 536-25	2.00	0.714	0.715	0.735	0.699	0.688	0.735	0.700	0.712286	0.018071	0.056743	1 ng/L	5 ng/kg
Total Fuel Hydrocarbons	soline	soline	soline	soline	soline	soline	soline	soline	N/A	N/A	N/A	625	
Fuel Character													

003727

Standard Operating Procedure GC00288 - Total Fuel Hydrocarbons

901 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

SOP# GC00288
Tier 4 Rev. 08/16/93
Page 1 of 5

TOTAL FUEL HYDROCARBONS

A. Summary

This method determines total fuel hydrocarbons, benzene, toluene, ethylbenzene and xylenes in aqueous, soil and sediment samples by gas chromatography. It can also determine the carbon range and characterization.

The sample is extracted with methylene chloride and then injected into a gas chromatograph equipped with a megabore column and flame ionization detector.

Laboratory specific procedures are given in supplemental SOPs GC00288.A (Anaheim) and GC00288.G (Glendale).

B. Safety

1. Analyst should use gloves when handling samples or standards.
2. Safety glasses should be worn.
3. Standards and samples should be prepared in the hood.
4. Methylene chloride is a suspected carcinogen and should be used under a hood. A respirator should be worn.

C. Apparatus

1. Varian 3400 or equivalent gas chromatograph equipped with
 - a. Flame ionization detector
 - b. Varian 8000 series autosampler, or equivalent
2. Column (J & W Scientific, 30m x 0.53mm ID DB-5 column, 1.5 u film thickness, or equivalent).
3. Autosampler vials, 1.5-mL.
4. Graduated pipets, 25-mL.
5. Hamilton syringes: 10-uL, 100-uL, 500-uL, 2500-uL.
6. Repipetor, 10-mL.

7. Top-loading balance.

D. Reagents

1. Methylene chloride (E.M. Science, Chromatography grade)
2. Compressed air, high purity
3. Compressed hydrogen, high purity
4. Compressed helium, high purity
5. Calibration standards: prepare stock solutions of the fuel(s) of interest by weighing out the neat materials and diluting in methylene chloride. Gasoline and diesel are the most common fuels. Prepare working standards from the stock solution(s). If benzene, toluene, ethylbenzene, and xylenes are required, prepare working standards from purchased stock solutions. Refer to SOPs GC00288.A and GC00288.G for standard concentrations.
6. Laboratory control standard (LCS): prepare a stock solution from a source separate from the calibration standards. Refer to SOPs GC00288.A and GC00288.G for concentrations used.
7. Surrogate solution, 10000-ppm: Weigh 0.25 g of reagent grade naphthalene into a 25-mL volumetric flask; dilute to the mark with methylene chloride; mix well.

E. Procedure

1. Notebook Preparation

- a. Enter the date, the instrument number and the analyst's initials in the header.
- b. Prepare columns for log-number, sample description, client name, sample weight, final volume and comments.
- c. Enter the log numbers, sample descriptions, and client codes in the appropriate columns.
- d. Prepare the runlog by entering the date and analyst's initials in the header. Enter the log number of each sample to be run, the dilution (if any) and the data file name (the chromatogram number) in the appropriate columns of the runlog.

2. Soil Preparation:

003730

- a. Tare a 40-mL vial in the top-loading balance.
 - b. Open the brass core and discard the top 2 inches of soil.
 - c. Weigh 10 grams of soil into the vial.
 - d. Record the sample weight in the prep notebook.
 - e. For matrix spikes, weigh out additional portions of sample and add 100 uL of the LCS solution.
 - f. For the method blank and LCS, start with empty vials. Add 100 uL of LCS solution to the LCS vial.
 - g. Add surrogate solution. Refer to SOPs GC00288.A and GC00288.G for designated volume.
 - h. Add 10 mL of methylene chloride.
 - i. Shake vigorously for two minutes.
3. Aqueous Sample Preparation:
- a. Pipet 25 ml of sample into a 40-mL vial. Sample should be taken from a vial with no headspace.
 - b. For matrix spikes, pipet additional portions of sample into 40-mL vials. Add designated amount of LCS solution. Refer to SOPs GC00288.A and GC00288.G.
 - c. For the method blank and LCS, pipet 25 mL of DI water into separate vials. Add designated amount of LCS solution to the LCS vial. Refer to SOPs GC00288.A and GC00288.G.
 - d. Add designated amount of of surrogate solution. Refer to SOPs GC00288.A and GC00288.G.
 - e. Add designated amount of methylene chloride. Refer to SOPs GC00288.A and GC00288.G.
 - f. Shake vigorously for two minutes.
4. Sample Analysis: refer to SOPs GC00288.A and GC00288.G for instrument operating conditions.
- a. A methylene chloride wash should be run to check the instrument contamination.
 - b. Initially calibrate the instrument by injecting five calibration standards.
 - c. Run the calibration check standard.

d. If the calibration check standard meets the criteria in section F, load the autosampler with samples. Remember the method blank, the spike, the spike duplicate and the LCS.

e. A methylene chloride wash should be run after the LCS.

F. Quality Control

1. The calibration curve should have a correlation coefficient of at least 0.995.
2. The calibration must be checked by running the midpoint standard every 24 hour period. The concentration of the calibration check must be within 20% of the expected value. If not, rerun the calibration check. If still out, recalibrate.
3. A method blank, matrix spike, matrix spike duplicate and LCS must be prepared and analyzed with each batch of samples. Refer to the QA Manual, section 9.2, for batch QC evaluation guidelines.

G. Calculations and Data Review

$$\text{Concentration of aqueous (mg/L)} = \frac{\text{As} \times \text{RF} \times \text{Ve}}{\text{Vs}}$$

$$\text{Concentration soil (mg/kg)} = \frac{\text{As} \times \text{RF} \times \text{Ve}}{\text{Ws}}$$

where:

As = Area count of the sample

RF = Response factor from calibration curve

Ve = Volume of the methylene chloride extract in mL

Vs = Volume of the aqueous sample in mL

Ws = Weight of the soil sample in g

Carbon range:

Carbon range is determined by comparing with the retention time of alkanes standard.

Characterization:

Characterization is done by matching the pattern with various type of fuels such as gasoline, diesel, and jet fuel.

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H. Troubleshooting

1. Low spike recovery

Check the surrogate recovery. If the surrogate recovery is also low, check for leaks and re-run the sample.

2. Excessive cross-contamination

- a. Bake column at 270 degrees C for at least one hour and then run several methylene chloride washes.
- b. Replace the glass insert and cut the column at the injector end.

I. Interferences

1. Any compound which responds to an FID detector will interfere with fuels analysis.

J. References

1. Personal communication, Technical Services Dept., Chevron Research, Richmond, CA
2. Test Methods for Evaluating Solid Waste, Volume 1B, USEPA, Third Edition, November 1986, Method 8015.

Reviewed and approved
T. Kirk | 08/16/93
Issued _____

Standards Documentation

003735

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:19:49 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: NAPHTHALENE
Date Prepared: 11/01/93
Prepared by: JOSEPHINE PADUA
Type: Surrogate,
Stock Solution

Reference #:SV9311001
Expiration Date: 02/01/94
Total Volume: 50 ML

Solvent	Manufacturer
MECL2	BAXTER

Lot#	%
BF 685	100

Source	Amount
SV9308030	0.5000 G

Disposal Method:
Verification Date:
Hazard Class: Carcinogen

Disposal Date:

End of Report

003736

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:19:49 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: CV GASOLINE/NAPH
Date Prepared: 12/02/93
Prepared by: JOSEPHINE PADUA
Type: Calibration Verification

Reference #:SV9312014
Expiration Date: 03/02/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	BAXTER	BF 685	100

Source	Amount	Component	Final Concentration
SV9312013	50.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9305023	0.5000 ML	GASOLINE UNLEADED	50.0000 PPM
SV9311001	10.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9308030	0.5000 ML	NAPHTHALENE	10.0000 PPM

Disposal Method:
Verification Date:
Hazard Class: Carcinogen

Disposal Date:

End of Report

003737

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:20:02 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: DIESEL SPIKE/STOCK
Date Prepared: 11/09/93
Prepared by: JOSEPHINE PADUA
Type: Spike Solution,
Stock Solution

Reference #:SV9311008
Expiration Date: 02/09/94
Total Volume: 50 ML

Solvent	Manufacturer	Lot#	%
MECL2	BAXTER	BG 148	100

Source	Amount	Component	Final Concentration
SV9306041	0.5000 G	TPH (diesel)	10,000.0000 PPM

Disposal Method:
Verification Date:
Hazard Class: Carcinogen

Disposal Date:

End of Report

003738

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:20:03 13 DEC 1993 - P. 1 :

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: NAPHTHALENE 5PT
Date Prepared: 12/01/93
Prepared by: JOSEPHINE PADUA
Type: Calibration Verification

Reference #:SV9312006
Expiration Date: 02/01/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	BAXTER	BF 685	100

Source	Amount	Component	Final Concentration
SV9311001	4.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9308030	0.5000 ML	NAPHTHALENE	4.0000 PPM
SV9311001	8.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9308030	0.5000 ML	NAPHTHALENE	8.0000 PPM
SV9311001	12.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9308030	0.5000 ML	NAPHTHALENE	12.0000 PPM
SV9311001	16.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9308030	0.5000 ML	NAPHTHALENE	16.0000 PPM
SV9311001	20.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9308030	0.5000 ML	NAPHTHALENE	20.0000 PPM

Disposal Method:
Verification Date:
Hazard Class: Carcinogen

Disposal Date:

End of Report

003739

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:20:04 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: GASOLINE 5PT
Date Prepared: 12/01/93
Prepared by: JOSEPHINE PADUA
Type: Calibration Verification

Reference #:SV9312007
Expiration Date: 02/22/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	BAXTER	BF 685	100

Source	Amount	Component	Final Concentration
SV9308023	100.0000 UL	<-- Prepared Source. Level 1 -->	
SV9308023	250.0000 UL	<-- Prepared Source. Level 1 -->	
SV9308023	500.0000 UL	<-- Prepared Source. Level 1 -->	
SV9308023	1.0000 ML	<-- Prepared Source. Level 1 -->	
SV9308023	2.5000 ML	<-- Prepared Source. Level 1 -->	

Disposal Method:
Verification Date:
Hazard Class: Carcinogen

Disposal Date:

End of Report

003740

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:20:05 13 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: DIESEL 5PT
Date Prepared: 10/13/93
Prepared by: JOSEPHINE PADUA
Type: Calibration Standard

Reference #:SV9310038
Expiration Date: 01/13/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	BAXTER	BF 685	100

Source	Amount	Component	Final Concentration
SV9310037	0.5000 ML	<-- Prepared Source. Level 1 -->	
.SV9309014	1.0000 ML	TPH (diesel)	50.0000 PPM
SV9310037	1.0000 ML	<-- Prepared Source. Level 1 -->	
.SV9309014	1.0000 ML	TPH (diesel)	100.0000 PPM
SV9310037	2.0000 ML	<-- Prepared Source. Level 1 -->	
.SV9309014	1.0000 ML	TPH (diesel)	200.0000 PPM
SV9310037	4.0000 ML	<-- Prepared Source. Level 1 -->	
.SV9309014	1.0000 ML	TPH (diesel)	400.0000 PPM
SV9310037	5.0000 ML	<-- Prepared Source. Level 1 -->	
.SV9309014	1.0000 ML	TPH (diesel)	500.0000 PPM

Disposal Method:
Verification Date:
Hazard Class: Carcinogen

Disposal Date:

End of Report

003741

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:20:06 13 DEC 1993 - P. 1 :

Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: CV DIESEL/NAPH

Date Prepared: 12/01/93

Prepared by: JOSEPHINE PADUA

Type: Calibration Verification

Reference #:SV9312010

Expiration Date: 02/09/94

Total Volume: 10 ML

Solvent

Manufacturer

Lot#

%

MECL2

BAXTER

BF 685

100

Source

Amount

Component

Final Concentration

SV9311008 100.0000 UL

<-- Prepared Source. Level 1 -->

.SV9306041 0.5000 ML

TPH (diesel)

100.0000 PPM

SV9311001 10.0000 UL

<-- Prepared Source. Level 1 -->

.SV9308030 0.5000 ML

NAPHTHALENE

10.0000 PPM

Disposal Method:

Disposal Date:

Verification Date:

Hazard Class: Carcinogen

End of Report

003742

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:20:07 13 DEC 1993 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: CV DIESEL/NAPH
Date Prepared: 12/01/93
Prepared by: JOSEPHINE PADUA
Type: Calibration Verification

Reference #:SV9312011
Expiration Date: 02/09/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	BAXTER	BF 685	100

Source	Amount	Component	Final Concentration
SV9311008	300.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9306041	0.5000 ML	TPH (diesel)	300.0000 PPM
SV9311001	10.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9308030	0.5000 ML	NAPHTHALENE	10.0000 PPM

Disposal Method:
Verification Date:
Hazard Class: Carcinogen

Disposal Date:

End of Report

003743

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:20:08 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: CV GASOLINE/NAPH
Date Prepared: 12/02/93
Prepared by: JOSEPHINE PADUA
Type: Calibration Verification

Reference #:SV9312014
Expiration Date: 03/02/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	BAXTER	BF 685	100

Source	Amount	Component	Final Concentration
SV9312013	50.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9305023	0.5000 ML	GASOLINE UNLEADED	50.0000 PPM
SV9311001	10.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9308030	0.5000 ML	NAPHTHALENE	10.0000 PPM

Disposal Method:
Verification Date:
Hazard Class: Carcinogen

Disposal Date:

End of Report

003744

: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 15:20:09 13 DEC 1993 - P. 1 :

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: GASOLINE/NAPH MP
Date Prepared: 11/23/93
Prepared by: JOSEPHINE PADUA
Type: Calibration Standard

Reference #:SV9311034
Expiration Date: 02/23/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	BAXTER	BF 685	100

Source	Amount	Component	Final Concentration
SV9308023	500.0000 UL	<-- Prepared Source. Level 1 -->	
SV9311001	10.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9308030	0.5000 ML	NAPTHALENE	10.0000 PPM

Disposal Method:
Verification Date:
Hazard Class: Carcinogen

Disposal Date:

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 15:20:10 13 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: DIESEL/NAPH MP
Date Prepared: 11/23/93
Prepared by: JOSEPHINE PADUA
Type: Calibration Standard

Reference #:SV9311035
Expiration Date: 02/23/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
MECL2	BAXTER	BF 685	100

Source	Amount	Component	Final Concentration
SV9310037	1.0000 ML	<-- Prepared Source. Level 1 -->	
.SV9309014	1.0000 ML	TPH (diesel)	100.0000 PPM
SV9311001	10.0000 UL	<-- Prepared Source. Level 1 -->	
.SV9308030	0.5000 ML	NAPHTHALENE	10.0000 PPM

Disposal Method:
Verification Date:
Hazard Class: Carcinogen

Disposal Date:

003746

Prep Logs and Analysis Run Logs

003747

Project No. _____

Book No. _____

TITLE _____

Fuel: 707

Fuels Prep Log 111
Ag

76 patch # 129

From Page No. _____

Client

Sample ID

Initial Vol.

Final Vol.

Blank

25 ml

5 ml

LCS-1

25 ml

5 ml

LCS-2

25 ml

5 ml

G93-11-37B-1

25 ml

5 ml

Scater

GW-2

-15₁

25 ml

5 ml

-15₂

25 ml

5 ml

-2

25 ml

5 ml

GW-3

-3

25 ml

5 ml

GW-4

-4

25 ml

5 ml

GW-5

-5

25 ml

5 ml

GW-6

-6

25 ml

5 ml

Equipment Blank

-7

25 ml

5 ml

Trip Blank

G93-12-038-1

25 ml

5 ml

MW-1

-2

25 ml

5 ml

MW-2

-3

25 ml

5 ml

MW-3

-4

25 ml

5 ml

MW-4

Harding

To Page No. _____

essed & Understood by me,

Date

12-07-93
12:00

Invented by

Date

Recorded by

003748

|||

TITLE _____

Project No. _____

Book No. _____

Fuels Prep Log 77

From Page No. _____

Client	Sample ID	Initial Vol	Final Vol
Handling ↓	693-12-038-5 MW-5	25 ml	5 ml
	- 6 MW-7	25 ml	5 ml
	- 7 MW-8	25 ml	5 ml
	- 8 MW-9	25 ml	5 ml
	- 9 MW-10	25 ml	5 ml
	- 10 MW-11	25 ml	5 ml
	- 11 MW-12	25 ml	5 ml

Comments:

MeCl₂ 101 # 11G 148

5 ml. of 8015M Surrogate (Neph) SV9311001 added to all

25 ml. of Gasoline SV9312014

50 ml. of 8015M Diesel Spike SV9311006

these are added to LCS-1, LCS-2, MS, MSD.

SP

To Page No. _____

Inspected & Understood by me,

Date

Invented by

Date

Recorded by

003749

|||

From Page No.

<u>Client</u>	<u>Sample ID</u>	<u>Initial Vol</u>	<u>Final Vol.</u>
	<u>Blank</u>	<u>25 ml</u>	<u>5 ml</u>
	<u>LCS-1</u>	<u>25 ml</u>	<u>5 ml</u>
	<u>LCS-2</u>	<u>25 ml</u>	<u>5 ml</u>
<u>PG & E</u>	<u>693-12-060-1</u>	<u>25 ml</u>	<u>5 ml</u>
	<u>OWS - Mid Core</u>		
<u>Seacor</u>	<u>693-12-066-1</u>	<u>25 ml</u>	<u>5 ml</u>
	<u>GW-1</u>		

Comments:

MeCl₂ lot # PG 146

5 ml. of BOKS M Surrogate (Naph) SV9311001 added to all

25 ml. of Gasoline SV9312014

50 ml. of BOKS M Diesel Spike SV9311008 } these were added
to LCS-1 & LCS-2

LP

To Page No.

Witnessed & Understood by me,

Date

12-09-93
3:10

Invented by

Recorded by

Date

003750

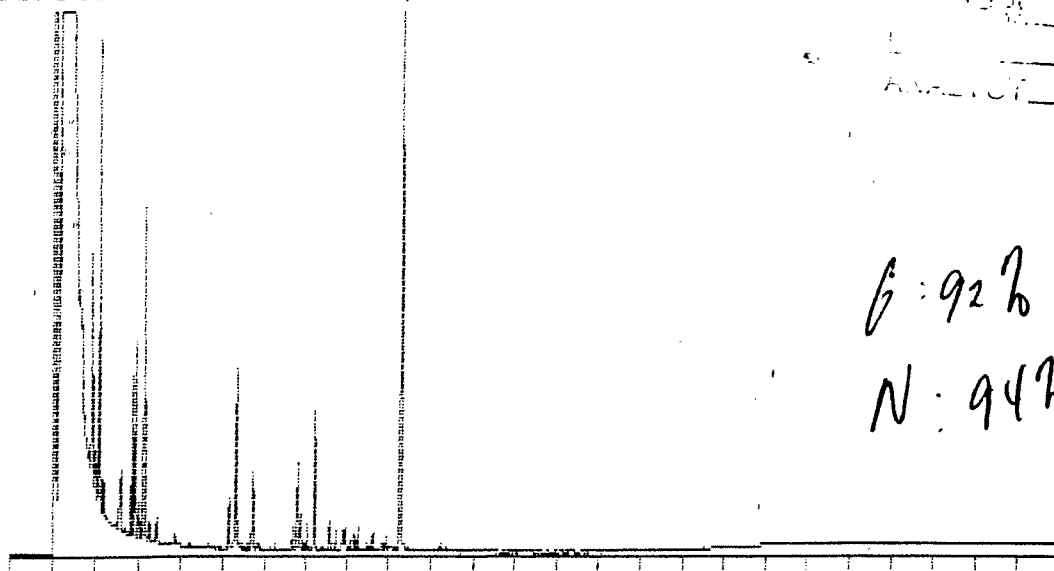
LOG# or SX ID/REP DATE/IV->FV	SEQ FILE	DIL	BAT#	NR	COMMENT(S)
WASH	L:WM01-1	1			clean
NAPHTHALENE 4 PPM	L:SM01-2	1			SV 9312007 6.10.93 RF = 4.0239 x 10 ⁻⁵
NAPHTHALENE 8 PPM	L:SM01-3	1			
NAPHTHALENE 12 PPM	L:SM01-4	1			
NAPHTHALENE 16 PPM	L:SM01-5	1			
NAPHTHALENE 20 PPM	L:SM01-6	1			R = 0.999
GASOLINE 10 PPM	L:SM01-7	1			
GASOLINE 25 PPM	L:SM01-8	1			SV 9312007
GASOLINE 50 PPM	L:SM01-9	1			
GASOLINE 100 PPM	L:SM01-10	1			RF = 8.2072 x 10 ⁻⁵ R = 0.999
GASOLINE 250 PPM	L:SM01-11	1			
DIESEL 50 PPM	L:SM01-12	1			SV 9310038 RF (Diesel.3550) = 5.1114 x 10 ⁻⁵ R = 0.998 RF (Fuel.707) = 5.8843 x 10 ⁻⁵ R = 0.999
DIESEL 100 PPM	L:SM01-13	1			
DIESEL 200 PPM	L:SM01-14	1			
DIESEL 400 PPM	L:SM01-15	1			
DIESEL 500 PPM	L:SM01-16	1			SV 9312008 RF = 5.0540 x 10 ⁻⁵ R = 0.997
KEROSENE 50 PPM	L:SM01-17	1			
KEROSENE 100 PPM	L:SM01-18	1			
KEROSENE 200 PPM	L:SM01-19	1			
KEROSENE 400 PPM	L:SM01-20	1			
KEROSENE 500 PPM	L:SM01-21	1			
JP-4 50 PPM	L:SM01-22	1			

LOG# or SX ID/ PREP DATE/IV->FV	SEQ FILE	DIL	BAT#	NR	COMMENT(S)
JP-4 100 PPM	L:SM01-23	1			SV 9312009
JP-4 200 PPM	L:SM01-24	1			RF = 6.2023 x 10 -5
JP-4 400 PPM	L:SM01-25	1			R = 0.999
JP-4 500 PPM	L:SM01-26	1			
CV DIESEL/NAPH 100/10PPM	L:SM01-27	1			SV 9312010 % Recovery = 109 % (Fuel-101)
CV DIESEL/NAPH 300/10PPM	L:SM01-28	1			SV 9312011 % Recovery = 94 % (Diesel-3550)
CV GASOLINE/NAPH 50/10PPM	L:SM01-29	1			SV 9312014 % Recovery = 80 %
CV JP-4 300 PPM	L:SM01-30	1			SV 9309024 % Recovery = 108 %
CV KEROSENE 300PPM	L:SM01-31	1			SV 9312016 % Recovery = 97 %
M BLANK/931124/1000ML>5ML	L:GM01-32	1	351		
G9311231-4/931119/10GM>10ML	L:AM01-33	50	126		
G9311231-7/931119/10GM>10ML	L:AM01-34	20	126		
G9311277-27/931124/1000ML>5ML	L:AM01-35	1	351		
G9311280-15/931124/1000ML>5ML	L:AM01-36	1	351		
G9311284-14/931124/1000ML>5ML	L:AM01-37	1	351		
G9311311-2/931124/1000ML>5ML	L:AM01-38	1	351		
G9311311-8/931124/1000ML>5ML	L:AM01-39	1	351		
G9311313-13/931124/1000ML>5ML	L:AM01-40	1	351		
G9311326-5/931124/1000ML>5ML	L:AM01-41	1	351		
LCS-1/931124/1000ML>5ML	L:LM01-42	1	351		TH: 106 % N: 93 %
LCS-2/931124/1000ML>5ML	L:LM01-43	1	351		TH: 106 % N: 90 %
M BLANK/931124/1000ML>5ML	L:GM01-44	1	350		

LOG# or SX ID/REP DATE/IV->FV	SEQ FILE	DIL	BAT#	NR	COMMENT(S)
WASH	L:WM01-95	1			clean
MP GASOLINE/NAPH 50/10PPM	L:SM01-96	1			SV9311034 to Recovery = 92%
MP DIESEL/NAPH 100/10PPM	L:SM01-97	1			SV9311035 to Recovery = 101%
M BLANK/931207/25ML>5ML	L:GM01-98	1	129		
G9311378-2/931207/25ML>5ML	L:AM01-99	1	129		
G9311378-3/931207/25ML>5ML	L:AM01-100	1	129		
G9311378-4/931207/25ML>5ML	L:AM01-101	1	129		
G9311378-5/931207/25ML>5ML	L:AM01-102	1	129		
G9311378-6/931207/25ML>5ML	L:AM01-103	1	129		
G9311378-7/931207/25ML>5ML	L:AM01-104	1	129		
G9312038-1/931207/25ML>5ML	L:AM01-105	1	129		
G9312038-2/931207/25ML>5ML	L:AM01-106	1	129		
G9311378-1/931207/25ML>5ML	L:AM01-107	1	129		
G9311378-1S1/931207/25ML>5ML	L:AM01-108	1	129		TPH: 70% N: 64%
G9311378-1S2/931207/25ML>5ML	L:AM01-109	1	129		TPH: 74% N: 72%
G9312038-3/931207/25ML>5ML	L:AM01-110	1	129	✓	
G9312038-4/931207/25ML>5ML	L:AM01-111	1	129		
G9312038-5/931207/25ML>5ML	L:AM01-112	1	129		
G9312038-6/931207/25ML>5ML	L:AM01-113	1	129		
G9312038-7/931207/25ML>5ML	L:AM01-114	1	129		
G9312038-8/931207/25ML>5ML	L:AM01-115	1	129		
G9312038-9/931207/25ML>5ML	L:AM01-116	1	129		

003754

Raw Data (Chromatograms)



G: 92%
N: 94%

[Interface 6] 0-25 Min Scale: 100 Mu

MP GASOLIN Processed: 12-07-1993 12:21:22, segment 1, cycle 96

RAW DATA SAVED IN FILE L:SM01-96.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 12:22:45 Version 5.1.5 *****

* Sample Name: MP GASOLINE/NAPH 50/10PPM SU9311034

Data File: L:SM01-96

* Date: 12-07-1993 12:21:22 Method: DIESEL

* Interface: 6 Cycle#: 96 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

* Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0: Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	2385195	70.295100	991084	100.000	2.4	
2	1.917	102159	3.0108	1	40355	4.283	2.5
3	2.100	103166	3.0404	1	84428	4.325	1.2
4	2.600	311307	0.9174	1	11090	1.305	2.8
5	2.833	47104	1.3882	1	29100	1.975	1.6
6	2.917	53898	1.5885	1	35767	2.260	1.5
7	3.000	12040	0.3548	1	6753	0.505	1.8
8	3.117	107849	3.1784	1	60283	4.522	1.8
9	3.250	6497	0.1915	1	3319	0.272	2.0
10	3.433	8407	0.2478	1	4518	0.352	1.9
11	3.817	5006	0.1475	1	2150	0.210	2.3
12	5.190	18179	0.5358	1	9081	0.762	2.0
13	5.340	71852	2.1176	1	32955	3.012	2.2
14	5.717	26697	0.7868	1	14084	1.119	1.9
15	5.853	2655	0.0782	1	1176	0.111	2.3
16	6.667	6627	0.1953	1	4366	0.278	1.5

G: 564976 +
8.7072 x 10⁻⁶
= 46/50 = 92%

19	6.783	56675	1.6703	1	15917	2.376	3.6
20	7.200	37801	1.1140	1	25560	1.585	1.5
21	7.567	11813	0.3481	1	5205	0.495	2.3
22	7.717	5835	0.1720	1	3568	0.245	1.6
23	7.967	25537	0.7526	1	4288	1.071	6.0
24	8.183	8275	0.2439	1	3087	0.347	2.7
25	8.267	6669	0.1965	1	3928	0.280	1.7
26	8.617	9771	0.2880	1	3020	0.410	3.2
27	8.933	4659	0.1373	1	2159	0.195	2.2
28	9.250	234571	6.9131	1	120994	9.834	1.9
29	10.217	3052	0.0899	1	1146	0.128	2.7

Total Area: 3393117 Area Reject: 2000 One sample per 1.000 sec.

```

***** 12-07-1993 12:22:50 Version 5.1.5 *****
* Sample Name: MP GASOLINE/NAPH 50/10PPM SU9311034
* Date: 12-07-1993 12:21:22 Method: DIESEL 12-03-1993 15:15:14 # 583
* Interface: 6 Cycle#: 96 Operator JF Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25
* Solvent Description:
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25
* Detector 0: Detector 1:
* Misc. Information: 536-25 INITIAL CALIBRATION
Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		238.5195	73.3244%	2385195	991084	2.4 0V			1.0000E-04
2	1.917		10.2159	3.1405%	102159	40355	2.5 1			1.0000E-04
3	2.100		10.3166	3.1715%	103166	84428	1.2 1			1.0000E-04
4	2.600		3.1130	0.9570%	31130	11090	2.8 1			1.0000E-04
5	2.833		4.7104	1.4480%	47104	29100	1.6 1			1.0000E-04
6	2.917		5.3898	1.6569%	53898	35767	1.5 1			1.0000E-04
7	3.000		1.2039	0.3701%	12040	6753	1.8 1			1.0000E-04
8	3.117		10.7849	3.3154%	107849	60283	1.8 1			1.0000E-04
9	3.250		0.6497	0.1997%	6497	3319	2.0 1			1.0000E-04
10	3.433		0.8407	0.2584%	8407	4518	1.9 1			1.0000E-04
11	3.817		0.5006	0.1539%	5006	2150	2.3 1			1.0000E-04
12	5.150		1.8179	0.5588%	18179	9081	2.0 1			1.0000E-04
13	5.300		7.1851	2.2088%	71852	32955	2.2 1			1.0000E-04
16	5.717		2.6697	0.8207%	26697	14084	1.9 1			1.0000E-04
17	6.233		0.2655	0.0816%	2655	1176	2.3 1			1.0000E-04
18	6.667		0.6627	0.2037%	6627	4366	1.5 1			1.0000E-04
19	6.783		5.6675	1.7423%	56675	15917	3.6 1			1.0000E-04
20	7.200		3.7801	1.1621%	37801	25560	1.5 1			1.0000E-04
21	7.567		1.1813	0.3631%	11813	5205	2.3 1			1.0000E-04
22	7.717		0.5835	0.1794%	5835	3568	1.6 1			1.0000E-04
23	7.967		2.5537	0.7850%	25537	4288	6.0 1			1.0000E-04
24	8.183		0.8275	0.2544%	8275	3087	2.7 1			1.0000E-04

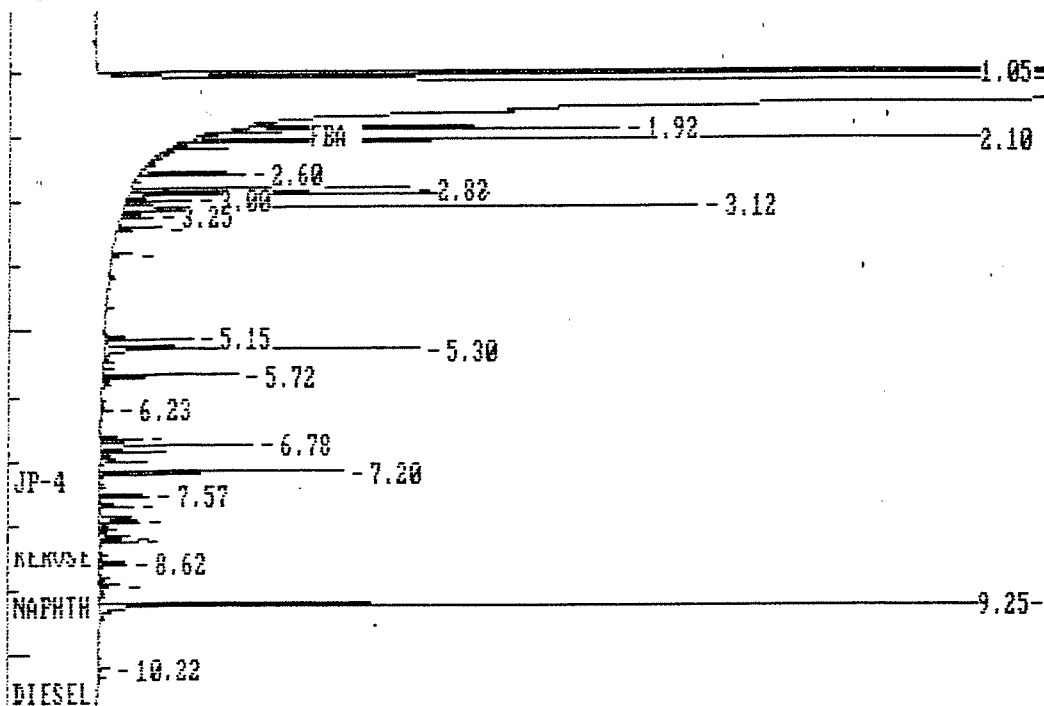
25	8.267	0.6669	0.2050%	6669	3928	1.7 1	1.0000E-04
26	8.617	0.9771	0.3004%	9771	3020	3.2 1	1.0000E-04
27	8.933	0.4659	0.1432%	4659	2159	2.2 1	1.0000E-04
28	9.250 NAPHTHALENE	9.4390	2.9017%	234571	120994	1.9 1	4.0239E-05
29	10.217	0.3052	0.0938%	3052	1146	2.7 1	1.0000E-04

TOTAL AMOUNT = 325.2936

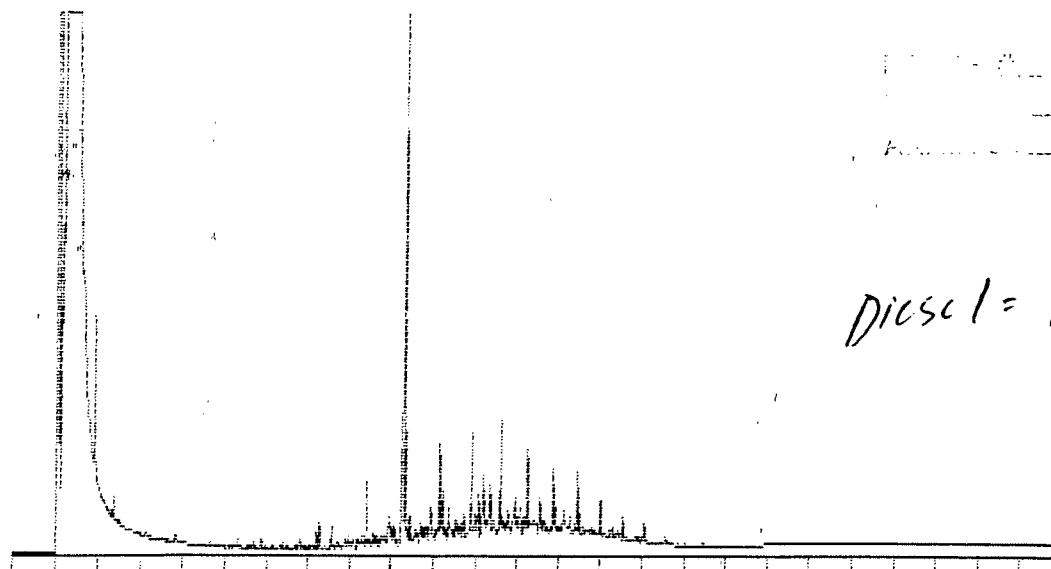
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:SM01-96.PTS Printed on 12-07-1993 at 12:23:10
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



L



[Interface 6] 0-25 Min Scale: 100 Mv
 MP DIESEL/ Processed: 12-07-1993 12:56:32, segment 2, cycle 97
 RAW DATA SAVED IN FILE L:SM01-97.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 12:57:55 Version 5.1.5 *****

* Sample Name: MP DIESEL/NAPH 100/10PPM SU9311035

Data File: L:SM01-97

* Date: 12-07-1993 12:56:32 Method: DIESEL

* Interface: 6 Cycle#: 97 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0:

Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	1.050	2655622	13.84000	0	990583	17.028	2.7
2	1.217	15595631	81.27770	0	983492	100.000	15.9
4	5.300	2843	0.0148	1	1317	0.018	2.2
5	5.867	2595	0.0135	1	1719	0.017	1.5
6	6.783	8216	0.0428	1	1988	0.053	4.1
7	7.200	4411	0.0230	1	2920	0.028	1.5
8	7.283	8347	0.0435	1	4645	0.054	1.8
9	7.567	13023	0.0679	1	3921	0.084	3.3
10	7.967	14956	0.0779	1	2219	0.096	6.7
11	8.183	3671	0.0191	1	1576	0.024	2.3
12	8.267	6165	0.0321	1	2079	0.040	3.0
13	8.400	37648	0.1962	1	12173	0.241	3.1
14	8.767	10949	0.0571	1	1583	0.070	6.9
15	8.933	28851	0.1504	1	4667	0.185	6.2
16	9.167	279980	1.4591	1	142474	1.795	2.0
17	9.480	15595	0.0813	1	4115	0.100	3.8
18	9.760	22521	0.1174	1	5239	0.144	7.0

19	10.133	39923	0.2081	1	16226	0.256	2.5
20	10.217	27088	0.1412	1	7195	0.174	3.8
21	10.717	30425	0.1586	1	4559	0.195	6.7
22	10.883	63261	0.3297	1	18693	0.406	3.4
23	11.167	68185	0.3553	1	10917	0.437	6.2
24	11.583	38493	0.2006	1	20540	0.247	1.9
25	11.767	8585	0.0447	1	3601	0.055	2.4
26	11.950	40619	0.2117	1	6198	0.260	6.6
27	12.417	14095	0.0735	1	1897	0.090	7.4
28	12.550	29419	0.1533	1	6371	0.189	4.6
29	12.867	33240	0.1732	1	11355	0.213	2.9
30	13.117	9363	0.0488	1	3245	0.060	2.9
31	13.450	26554	0.1384	1	11148	0.170	2.4
32	13.600	11702	0.0610	1	1381	0.075	8.5
33	14.283	6374	0.0332	1	1770	0.041	3.6
34	14.400	5270	0.0275	1	1464	0.034	3.6
35	14.550	12519	0.0652	1	4054	0.080	3.1
36	15.050	8837	0.0461	1	3388	0.057	2.6
37	15.550	3113	0.0162	1	1490	0.020	2.1

Total Area: 19188072 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-07-1993 12:58:02 Version 5.1.5 *****

* Sample Name: MP DIESEL/NAPH 100/10PPM SU9311035

Data File: L:SM01-97

* Date: 12-07-1993 12:56:32 Method: DIESEL 12-03-1993 15:15:14 # 583

* Interface: 6 Cycle#: 97 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 25

Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0:

Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Ending retention time: 25.00

Area reject: 2000

One sample per. 1.000 sec.

Amount injected: 1.00

Dilution factor: 1.00

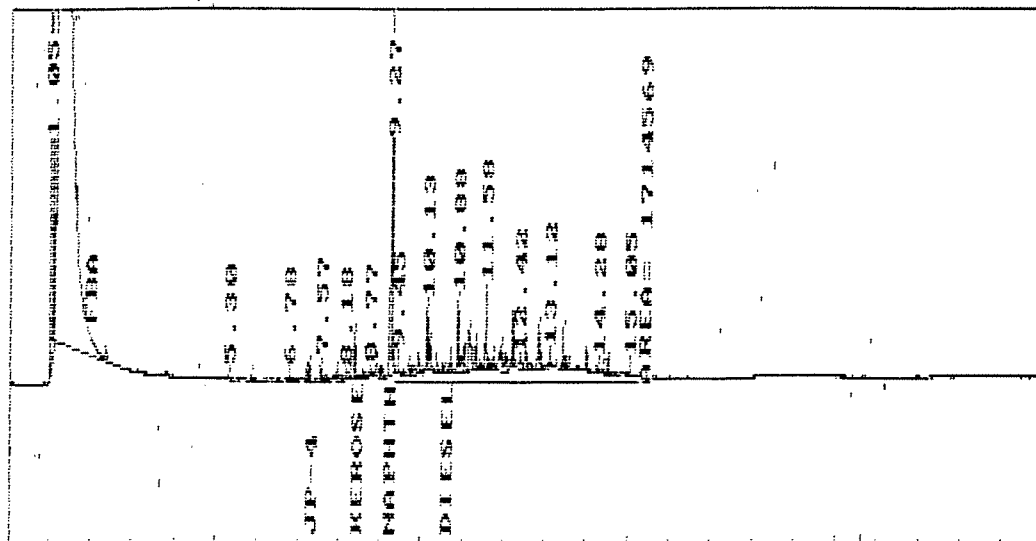
Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		265.5622	13.9887%	2655622	990583	2.7 0V			1.0000E-04
2	1.217		1559.5631	82.1510%	15595631	983492	15.9 0V			1.0000E-04
4	5.300		0.2843	0.0150%	2843	1317	2.2 1			1.0000E-04
5	5.867		0.2594	0.0137%	2595	1719	1.5 1			1.0000E-04
6	6.783		0.8216	0.0433%	8216	1988	4.1 1			1.0000E-04
7	7.300		0.4411	0.0232%	4411	2920	1.5 1			1.0000E-04
8	7.283 JP-4		0.5177	0.0273%	5347	4645	1.8 1	0	-0.6366	6.2023E-05
9	7.567		1.3022	0.0686%	13023	3921	3.3 1			1.0000E-04
10	7.967		1.4956	0.0788%	14956	2219	6.7 1			1.0000E-04
11	8.183		0.3671	0.0193%	3671	1576	2.3 1			1.0000E-04
12	8.267		0.6165	0.0325%	6165	2079	3.0 1			1.0000E-04
13	9.400 XEROSENE		1.9027	0.1002%	37648	12173	3.1 1	0	-0.3558	5.0540E-05
14	9.767		1.0949	0.0577%	10949	1583	6.9 1			1.0000E-04
15	9.933		2.8850	0.1520%	28851	4667	6.2 1			1.0000E-04

003761

2

START TIME= 9.367 START HEIGHT= 5494
 STOP TIME= 15.550 STOP HEIGHT= 5494
 AREA = 1714569
 Plot of data file: L:SM01-97.PTS
 Date: 12-07-1993 Time: 17:51:54
 Sample Name: MP DIESEL/NAPH 100/10
 Start Time= 0.02 Stop Time = 25.02 Min. Scale= 4955 Max. Scale= 104955



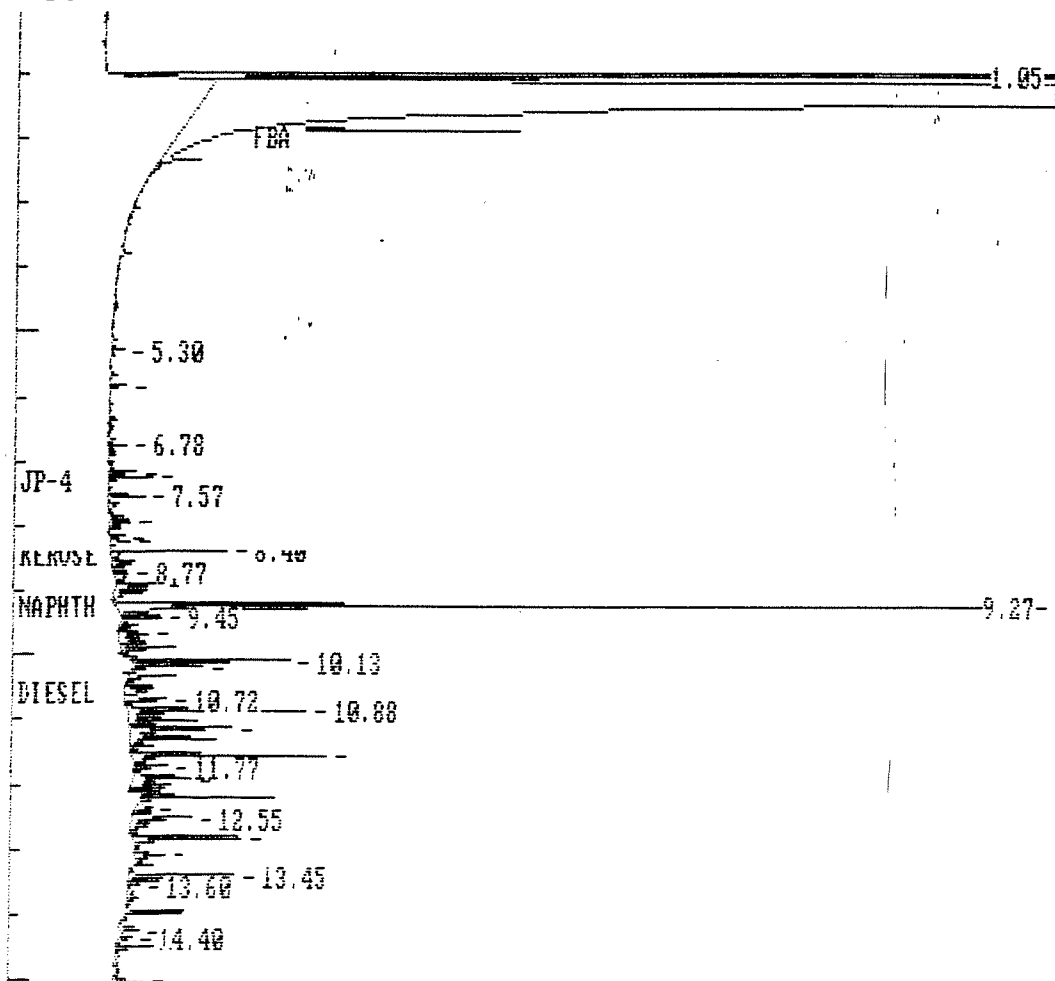
Diesel - 1714569 X 5.8843 Y10 S

$$= 101/100 = 101\%$$

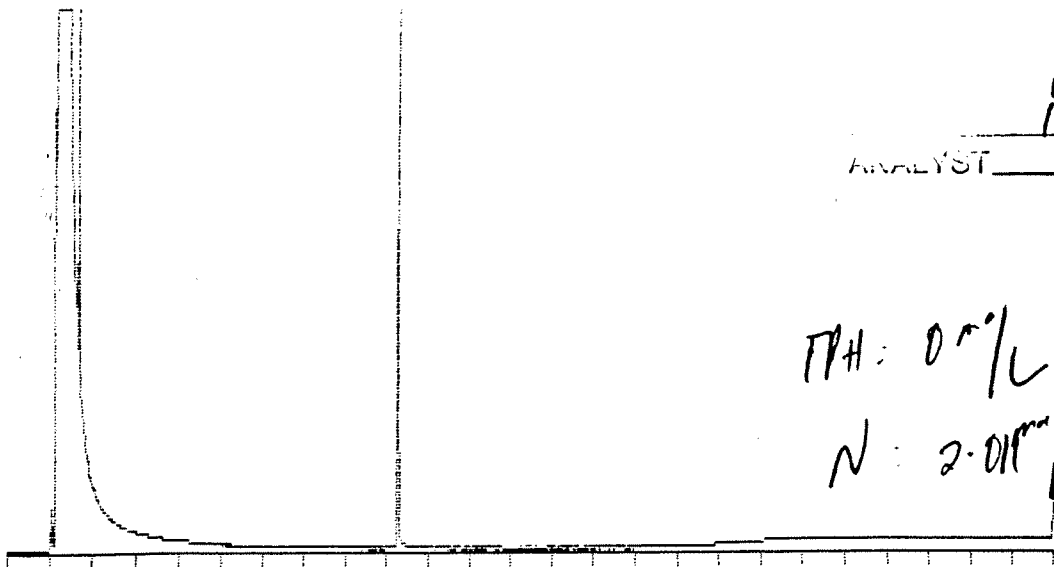
16	9.267	NAPHTHALENE	11.2662	0.5935%	279980	142474	2.0	1	0	.1801	4.0239E-05
17	9.450		1.5595	0.0821%	15595	4115	3.8	1			1.0000E-04
18	9.700		2.2521	0.1186%	22521	3239	7.0	1			1.0000E-04
19	10.133		3.9923	0.2103%	39923	16226	2.5	1			1.0000E-04
20	10.217		2.7088	0.1427%	27088	7195	3.8	1			1.0000E-04
21	10.717	DIESEL	1.5552	0.0819%	30425	4559	6.7	1	0	1.100	5.1114E-05
22	10.883		6.3261	0.3332%	63261	18693	3.4	1			1.0000E-04
23	11.167		6.8185	0.3592%	68185	10917	6.2	1			1.0000E-04
24	11.583		3.8493	0.2028%	38493	20540	1.9	1			1.0000E-04
25	11.767		0.8585	0.0452%	8585	3601	2.4	1			1.0000E-04
26	11.950		4.0619	0.2140%	40619	6198	6.6	1			1.0000E-04
27	12.417		1.4095	0.0742%	14095	1897	7.4	1			1.0000E-04
28	12.550		2.9419	0.1550%	29419	6371	4.6	1			1.0000E-04
29	12.867		3.3240	0.1751%	33240	11355	2.9	1			1.0000E-04
30	13.117		0.9363	0.0493%	9363	3245	2.9	1			1.0000E-04
31	13.450		2.6554	0.1399%	26554	11148	2.4	1			1.0000E-04
32	13.600		1.1702	0.0616%	11702	1381	8.5	1			1.0000E-04
33	14.283		0.6374	0.0336%	6374	1770	3.6	1			1.0000E-04
34	14.400		0.5270	0.0278%	5270	1464	3.6	1			1.0000E-04
35	14.550		1.2519	0.0659%	12519	4054	3.1	1			1.0000E-04
36	15.050		0.8837	0.0465%	8837	3388	2.6	1			1.0000E-04
37	15.550		0.3113	0.0164%	3113	1490	2.1	1			1.0000E-04

TOTAL AMOUNT = 1898.4099

Data File = L:SM01-97.PTS Printed on 12-07-1993 at 12:58:25
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



-15.55



124
12-07-93
ANALYST

TPH: 0.1%
N: 2.01%
Fuel: 101

[Interface 6] 0-25 Min Scale: 100 Mu
M BLANK Processed: 12-07-1993 13:31:31, segment 3, cycle 98
RAW DATA SAVED IN FILE L:GM01-98.PTS

Fuel: 101

12-999-1

AREA PERCENT REPORT

***** 12-07-1993 13:32:54 Version 5.1.5 *****
* Sample Name: M BLANK B#129/931207/25ML>5ML Data File: L:GM01-98 *
* Date: 12-07-1993 13:31:31 Method: DIESEL *
* Interface: 6 Cycle#: 98 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: Detector 1: *
* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	17262	6.4545	1	7304	6.900	2.4
2	9.250	250179	93.5455	1	174989	100.000	1.4

Total Area: 267441 Area Reject: 2000 One sample per 1.000 sec.

N: 250179 x 4.0239 x 10⁻⁵ x 5/55: 2.01%
Fuel: 101

EXTERNAL STANDARD TABLE

***** 12-07-1993 13:32:54 Version 5.1.5 *****
* Sample Name: M BLANK B#129/931207/25ML>5ML Data File: L:GM01-98 *
* Date: 12-07-1993 13:31:31 Method: DIESEL 12-03-1993 15:15:14 # 583 *
* Interface: 6 Cycle#: 98 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: Detector 1: *
* Misc. Information: 536-25 INITIAL CALIBRATION *

REVIEWED & APPROVED
BY SHV DATE 12/10/93

003765 (1)

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

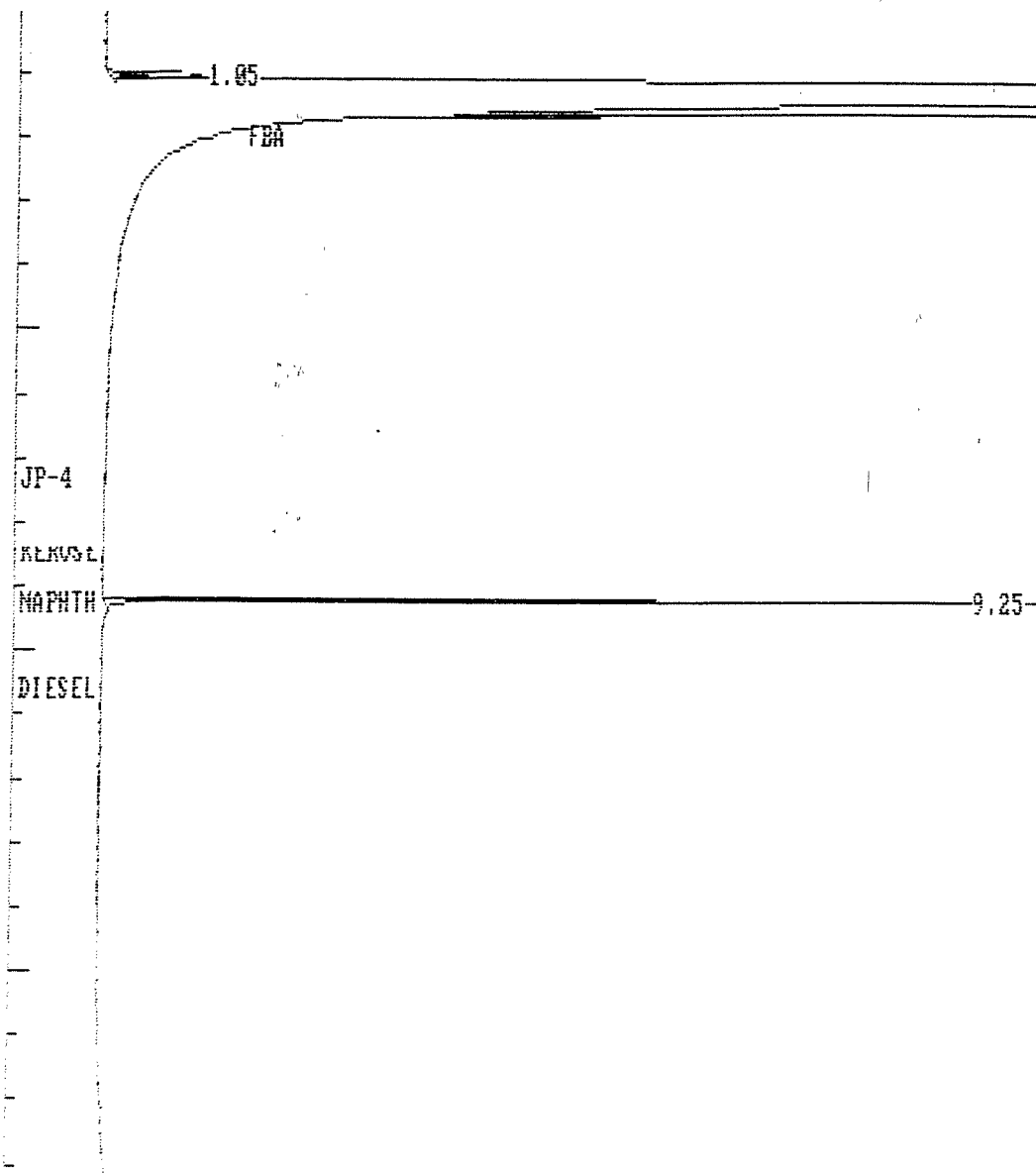
RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050	1.7262	14.6372%	17262	7304	2.4 1			1.0000E-04
2	9.250 NAPHTHALENE	10.0670	85.3628%	250179	174989	1.4 1	0	0	4.0239E-05

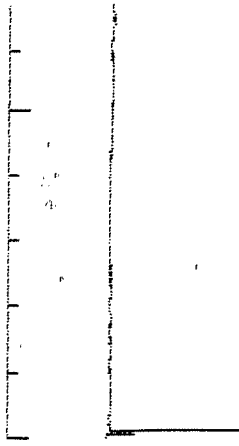
TOTAL AMOUNT = 11.7932

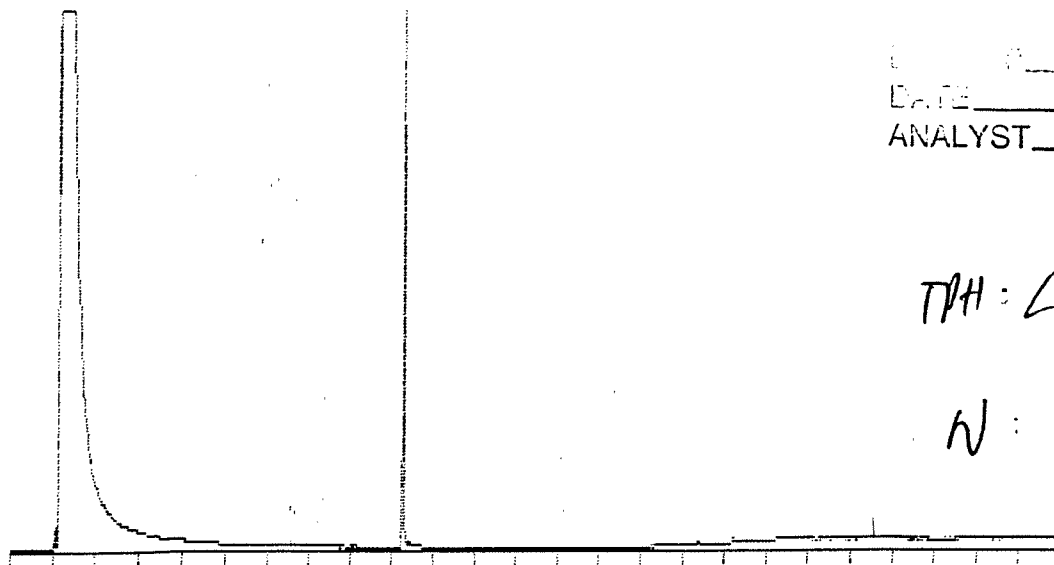
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:GM01-98.PTS Printed on 12-07-1993 at 13:33:02
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts







129
DATE 12-07-93
ANALYST JN

TPH: 21.0 mg/L

N: 1.90 mg/L

[Interface 6] 0-25 Min Scale: 100 Mu
G9311378-2 Processed: 12-07-1993 14:06:38, segment 4, cycle 99
RAW DATA SAVED IN FILE L:AM01-99.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 14:08:01 Version 5.1.5 *****

* Sample Name: G9311378-2 B#129/931207/25ML>5ML
Data File: L:AM01-99

* Date: 12-07-1993 14:06:38 Method: DIESEL

* Interface: 6 Cycle#: 99 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0: Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00 Run Time: 125.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.100	8423	3.4527	1	3316	3.576	2.5
2	9.267	235534	96.5473	1	151387	100.000	1.6

Total Area: 243957 Area Reject: 2000 One sample per 1.000 sec.

$N = 235534 \times 4.0239 \times 10^{-5} \times \frac{5}{55} \cdot 1.90 \text{ mg/L}$

***** EXTERNAL STANDARD TABLE *****

***** 12-07-1993 14:08:01 Version 5.1.5 *****

* Sample Name: G9311378-2 B#129/931207/25ML>5ML
Data File: L:AM01-99

* Date: 12-07-1993 14:06:38 Method: DIESEL 12-03-1993 15:15:14 # 583

* Interface: 6 Cycle#: 99 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

Solvent Description:

REVIEWED & APPROVED
BY JN DATE 12/10/93

003768 (1)

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* Conditions: 45 20/MIN FINAL 300 HOLD 8.25
* Detector 0:
* Misc. Information: 536-25 INITIAL CALIBRATION
*****
Starting Delay: 0.00 Ending retention time: 25.00
An reject: 2000 One sample per 1.000 sec.
Quant injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

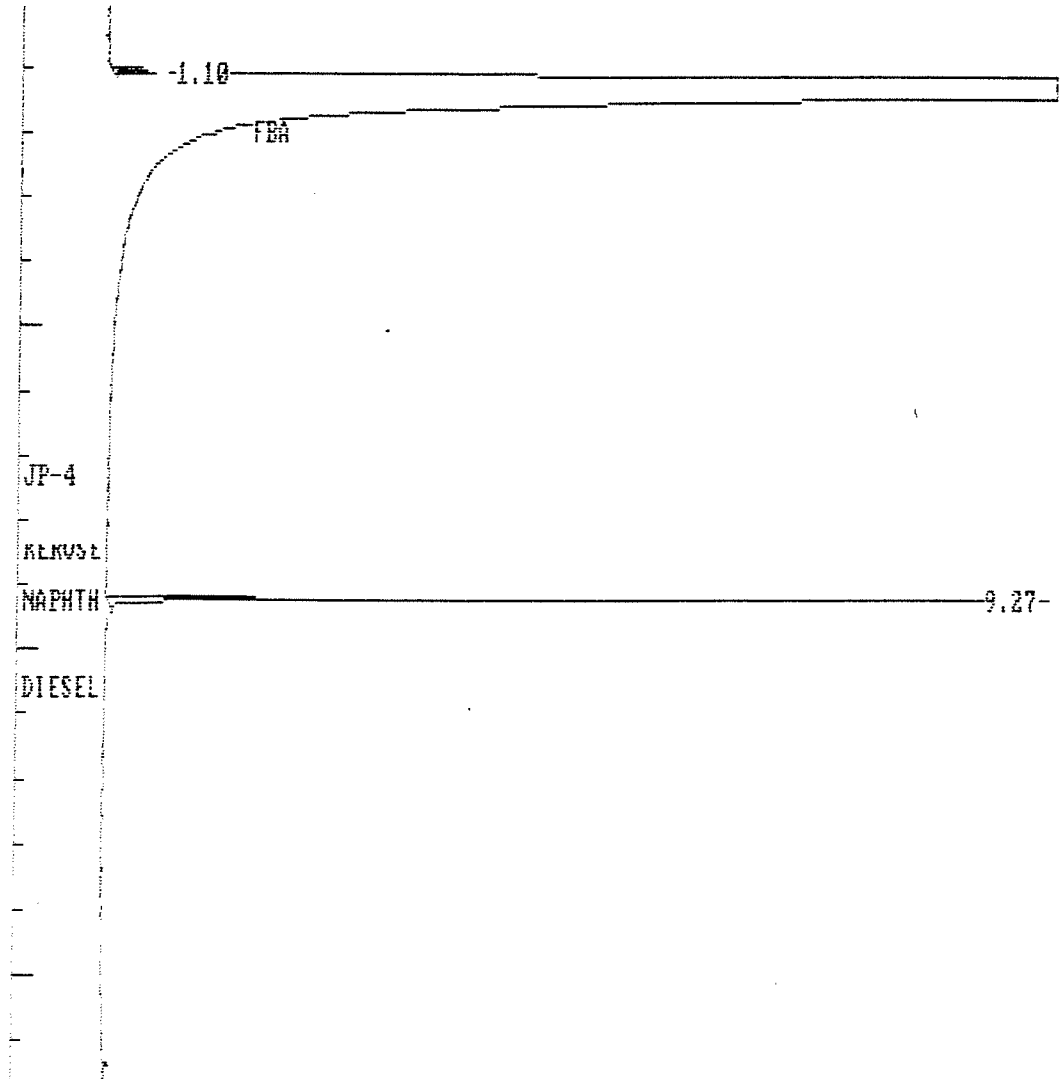
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.100		0.8423	8.1618%	8423	3316	2.5 1			1.0000E-04
2	9.267	NAPHTHALENE	9.4777	91.8382%	235534	151387	1.6 1	0	.1801	4.0239E-05

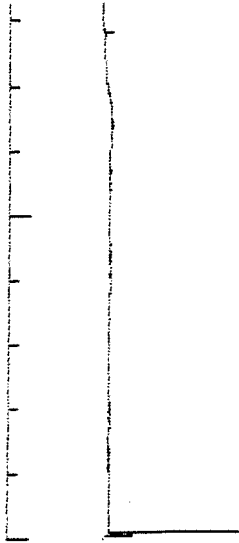
TOTAL AMOUNT = 10.3200

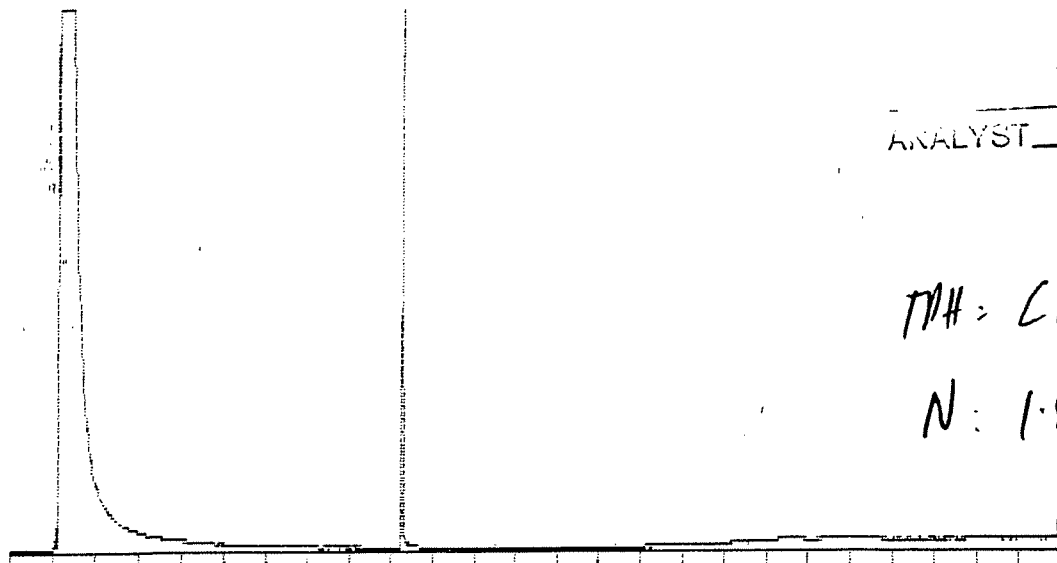
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:AM01-99.PTS Printed on 12-07-1993 at 14:08:09
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts







129
12-07-93
ANALYST JP

MPH: 61.0 m^2/L
N: 1.89 m^2/L

[Interface 6] 0-25 Min Scale: 100 Mv
G9311378-3 Processed: 12-07-1993 14:41:47, segment 5, cycle 100
RAW DATA SAVED IN FILE L:AM01-100.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 14:43:10 Version 5.1.5,*****

* Sample Name: G9311378-3 B#129/931207/25ML>5ML

Data File: L:AM01-100

* Date: 12-07-1993 14:41:47 Method: DIESEL

* Interface: 6 Cycle#: 100 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0:

Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	1.100	6777	2.8072	1	3417	2.888	2.0
2	9.250	234642	97.1928	1	165231	100.000	1.4

Total Area: 241419 Area Reject: 2000 One sample per 1.000 sec.

$N = 234642 \times 4.0239 \times 10^{-5} \times \frac{5}{25} = 1.89 \text{ m}^2/\text{L}$

***** EXTERNAL STANDARD TABLE *****

***** 12-07-1993 14:43:10 Version 5.1.5 *****

* Sample Name: G9311378-3 B#129/931207/25ML>5ML

Data File: L:AM01-100

* Date: 12-07-1993 14:41:47 Method: DIESEL 12-03-1993 15:15:14 # 583

* Interface: 6 Cycle#: 100 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

Solvent Description:

REVIEWED & APPROVED
BY SPV DATE 12/10/93

003771

①

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0:

* Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Ending retention time: 25.00

Ar reject: 2000

One sample per 1.000 sec.

Amount injected: 1.00

Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.100		0.6777	6.6970%	6777	3417	2.0 1			1.0000E-04
2	9.250	NAPHTHALENE	9.4418	93.3030%	234642	165231	1.4 1	0	0	4.0239E-05

TOTAL AMOUNT = 10.1195

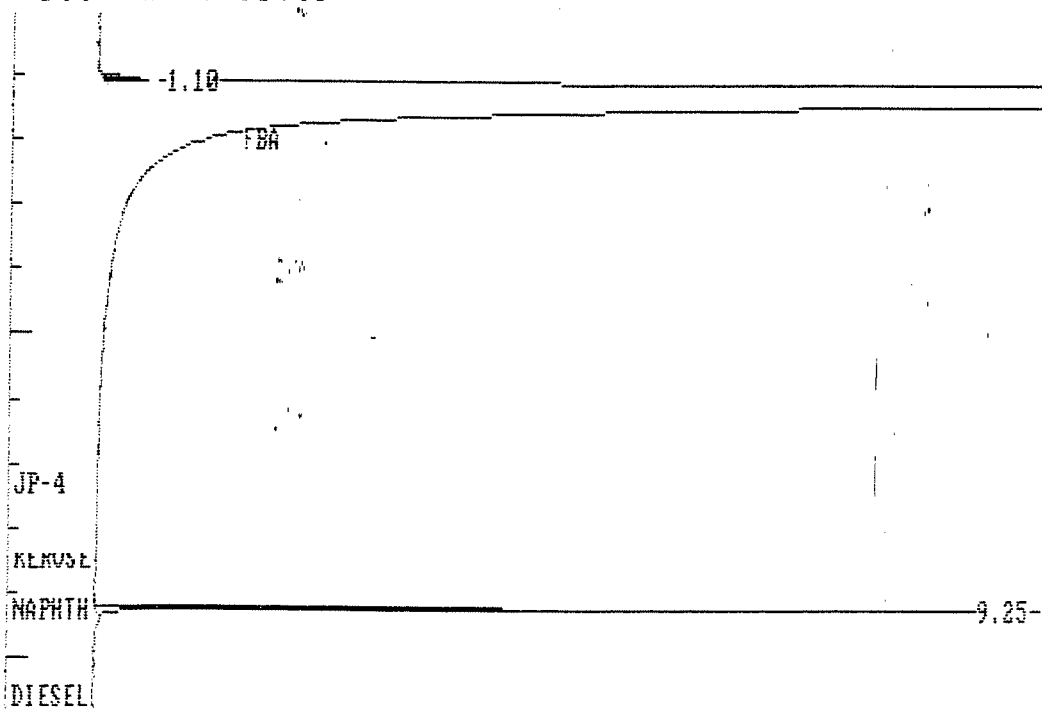
PEAKS NOT FOUND IN THIS RUN

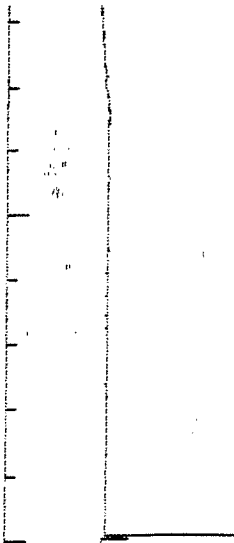
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

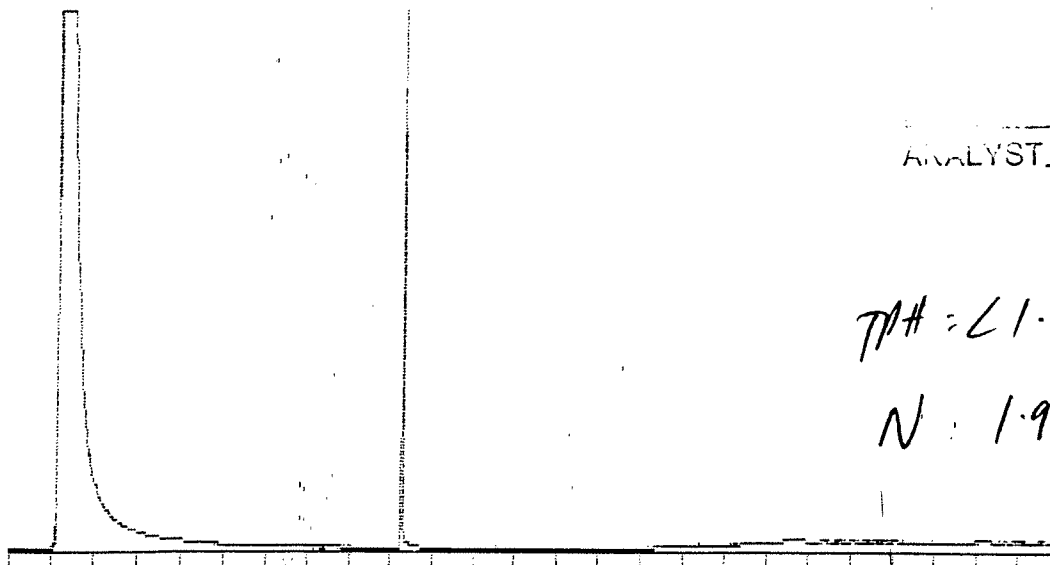
Data File = L:AM01-100.PTS Printed on 12-07-1993 at 14:43:18

Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

Full Range: 100 millivolts







174
12-07-93
ANALYST JD

TPH = 1.0 $\mu\text{g}/\text{L}$
N = 1.94 $\mu\text{g}/\text{L}$

[Interface 6] 0-25 Min Scale: 100 Mv
69311378-4 Processed: 12-07-1993 15:17:02, segment 6, cycle 101
RAW DATA SAVED IN FILE L:AM01-101.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 15:18:25 Version 5.1.5 *****
* Sample Name: 69311378-4 B#129/931207/25ML>5ML Data File: L:AM01-101 *
* Date: 12-07-1993 15:17:02 Method: DIESEL *
* Interface: 6 Cycle#: 101 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: Detector 1: *
* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
2	9.267	240705	100.0000	1	143601	100.000	1.7

Total Area: 240705 Area Reject: 2000 One sample per 1.000 sec.

$$N = 240705 \times 4.0239 \times 10^{-5} \times \frac{5}{55} = 1.94 \mu\text{g}/\text{L}$$

***** EXTERNAL STANDARD TABLE *****

***** 12-07-1993 15:18:25 Version 5.1.5 *****
* Sample Name: 69311378-4 B#129/931207/25ML>5ML Data File: L:AM01-101 *
* Date: 12-07-1993 15:17:02 Method: DIESEL 12-03-1993 15:15:14 # 583 *
* Interface: 6 Cycle#: 101 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

REVIEWED & APPROVED
DATE 12/10/93

003774

(1)

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
2	9.267	NAPHTHALENE	9.6858	100.0000%	240705	143601	1.7 1	0	.1801	4.0239E-05

TOTAL AMOUNT = 9.6858

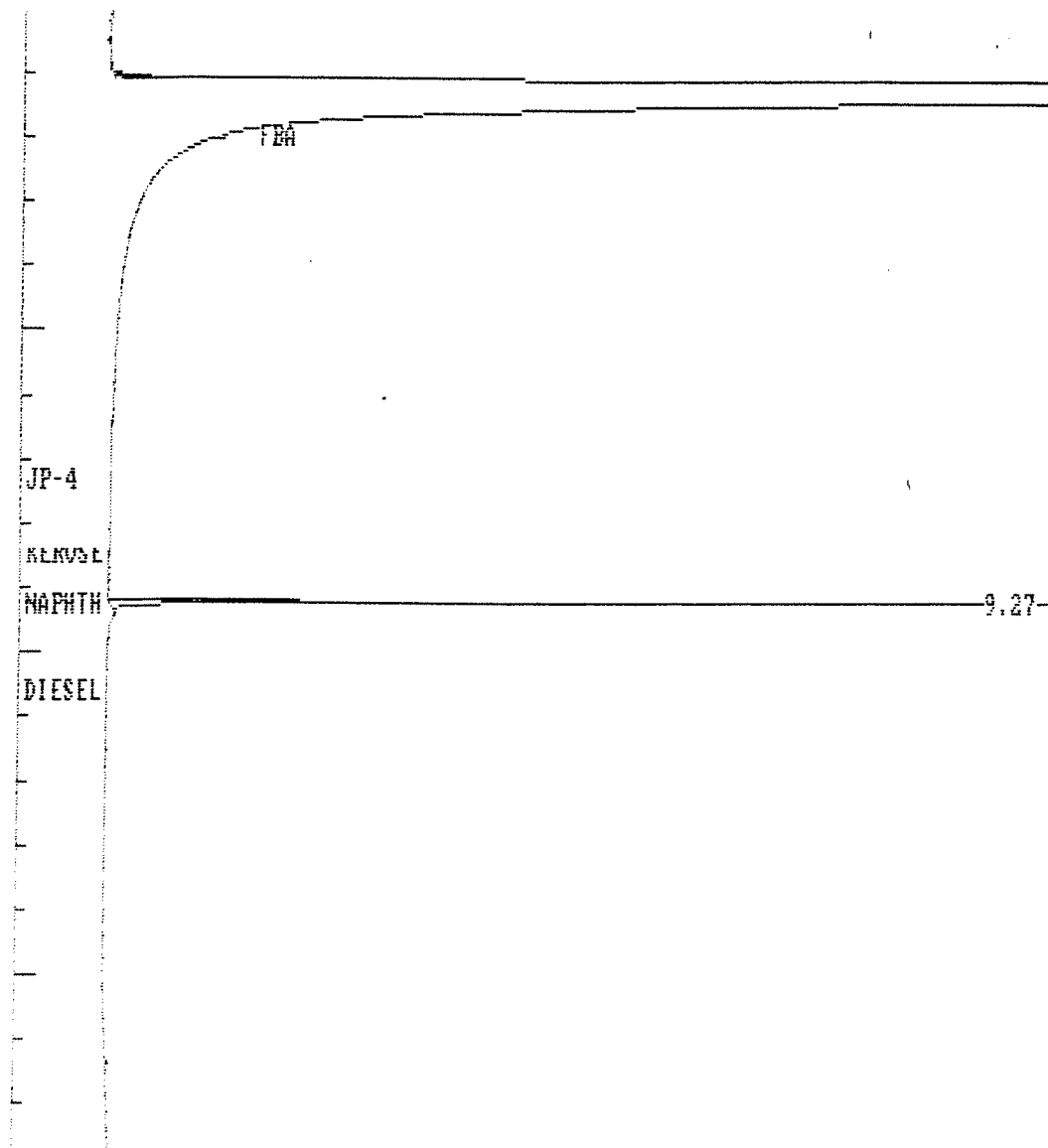
PEAKS NOT FOUND IN THIS RUN

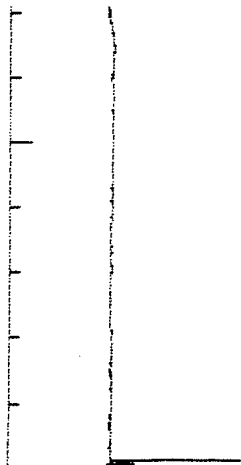
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

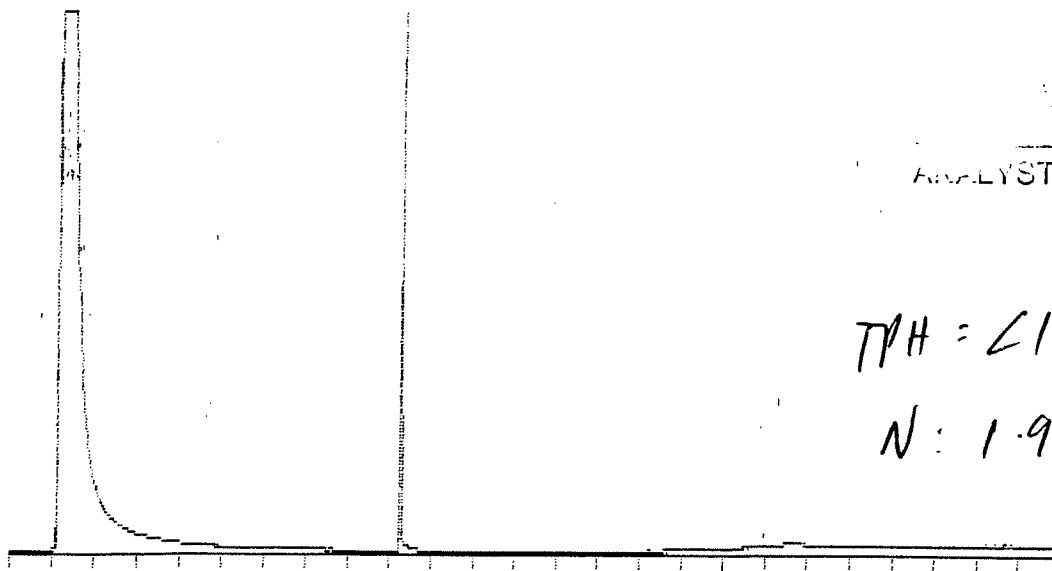
Data File = L:AM01-101.PTS Printed on 12-07-1993 at 15:18:32

Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

Full Range: 100 millivolts







ANALYST

TPH = 21.0 mg/L
N: 1.95 mg/L

[Interface 6] 0-25 Min Scale: 100 Mu
G9311378-5 Processed: 12-07-1993 15:52:09, segment 7, cycle 102
RAW DATA SAVED IN FILE L:AM01-102.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 15:53:31 Version 5.1.5 *****

* Sample Name: G9311378-5 B#129/931207/25ML>5ML

Data File: L:AM01-102

* Date: 12-07-1993 15:52:09 Method: DIESEL

* Interface: 6 Cycle#: 102 Operator JF Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0: Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.100	4771	1.9296	1	3497	1.968	1.4
2	9.250	242485	98.0704	1	170634	100.000	1.4

Total Area: 247256 Area Reject: 2000 One sample per 1.000 sec.

N. 242485 x 4.0039 x 10⁻⁵ x $\frac{5}{25}$ = 1.95 mg/L

***** EXTERNAL STANDARD TABLE *****

***** 12-07-1993 15:53:32 Version 5.1.5 *****

* Sample Name: G9311378-5 B#129/931207/25ML>5ML

Data File: L:AM01-102

* Date: 12-07-1993 15:52:09 Method: DIESEL 12-03-1993 15:15:14 # 583

* Interface: 6 Cycle#: 102 Operator JF Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

Solvent Description:

REVIEWED & APPROVED
BY: SHU DATE: 12/10/93

003777

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* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0:

Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Ending retention time: 25.00

Accept reject: 2000

One sample per 1.000 sec.

Amount injected: 1.00

Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.100		0.4771	4.6617%	4771	3497	1.4 1			1.0000E-04
2	9.250	NAPHTHALENE	9.7574	95.3383%	242485	170634	1.4 1	0	0	4.0239E-05

TOTAL AMOUNT = 10.2345

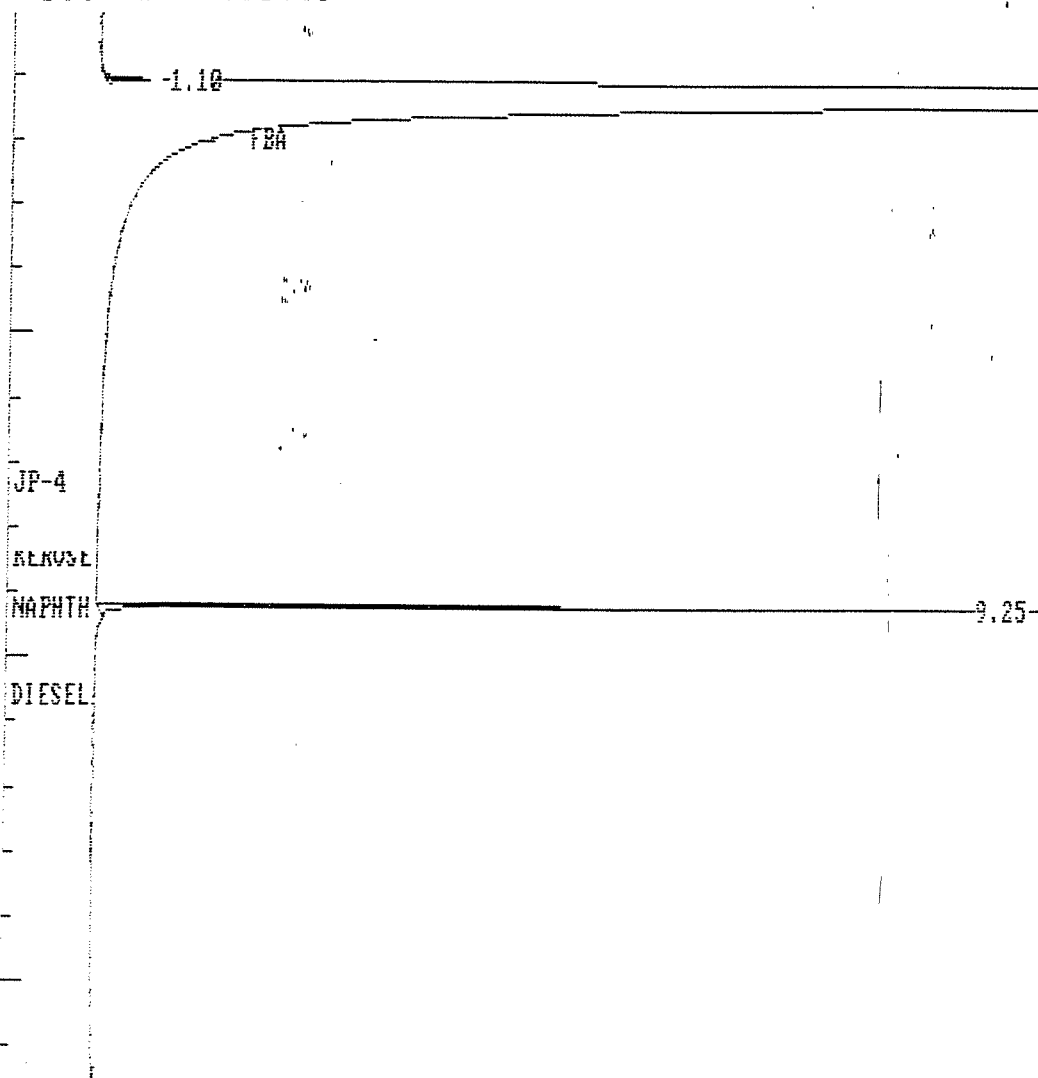
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:AM01-102.PTS Printed on 12-07-1993 at 15:53:40

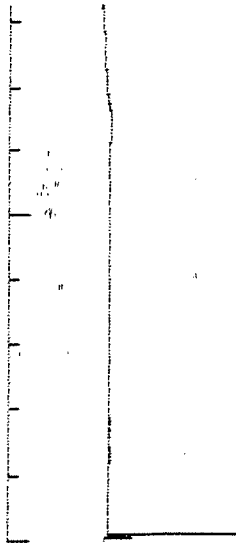
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

Full Range: 100 millivolts



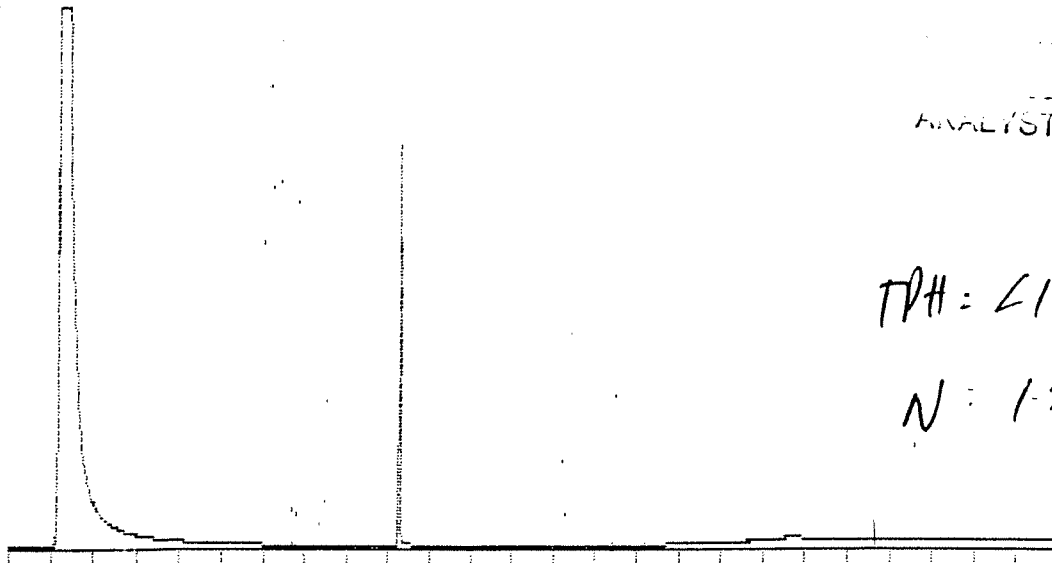
003778

2



129
12-07-93
ANALYST JP

TPH = 41.0 mg/L
N = 1.26 mg/L



[Interface 6] 0-25 Min Scale: 100 Mv
G9311378-6 Processed: 12-07-1993 16:27:53, segment 8, cycle 103
RAW DATA SAVED IN FILE L:AM01-103.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 16:29:16 Version 5.1.5 *****
* Sample Name: G9311378-6 B#129/931207/25ML>5ML Data File: L:AM01-103
* Date: 12-07-1993 16:27:53 Method: DIESEL
* Interface: 6 Cycle#: 103 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25
* Solvent Description:
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25
* Detector 0: Detector 1:
* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized Area %	Area/Height
1	1.117	3470	2.1677	1	1659	2.216	2.1
2	9.267	156610	97.8323	1	73370	100.000	2.1

Total Area: 160080 Area Reject: 2000 One sample per 1.000 sec.

$N = 156610 \times 4 - 0.239 \times 10^{-5} \times \frac{5}{25} = 1.26 \text{ mg/L}$

***** EXTERNAL STANDARD TABLE *****
***** 12-07-1993 16:29:16 Version 5.1.5 *****
* Sample Name: G9311378-6 B#129/931207/25ML>5ML Data File: L:AM01-103
* Date: 12-07-1993 16:27:53 Method: DIESEL 12-03-1993 15:15:14 # 583
* Interface: 6 Cycle#: 103 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25
* Solvent Description:

REVIEWED & APPROVED
JPW 12/10/93

003780 ①

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Ending retention time: 25.00
 Arg. reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

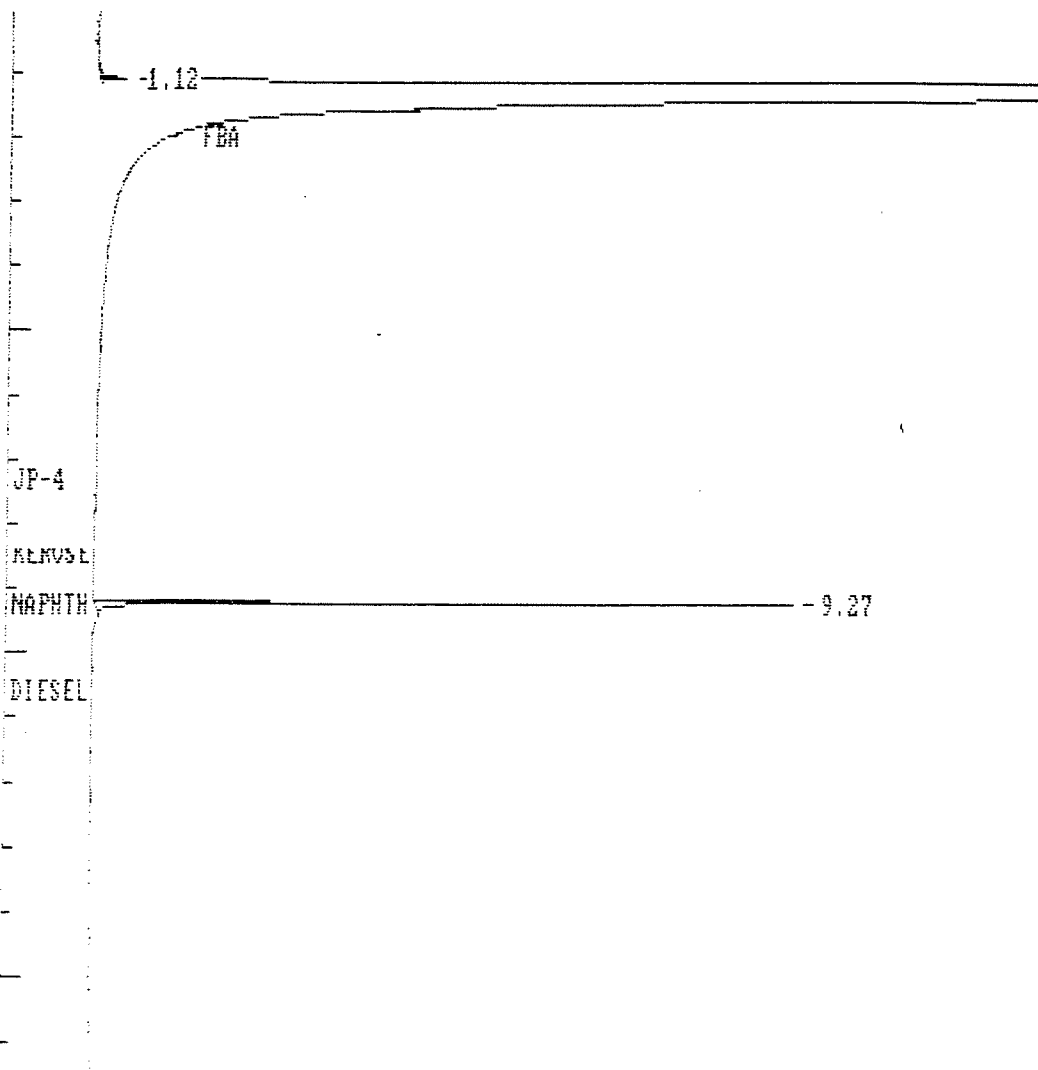
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.117		0.3470	5.2189%	3470	1659	2.1 1			1.0000E-04
2	9.267	NAPHTHALENE	6.3019	94.7811%	156610	73370	2.1 1	0	.1801	4.0239E-05

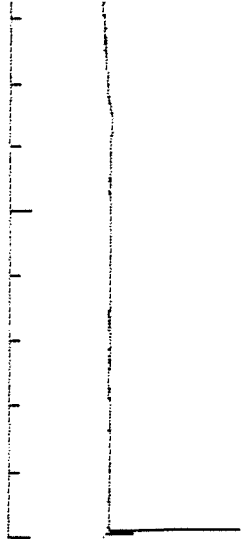
TOTAL AMOUNT = 6.6489

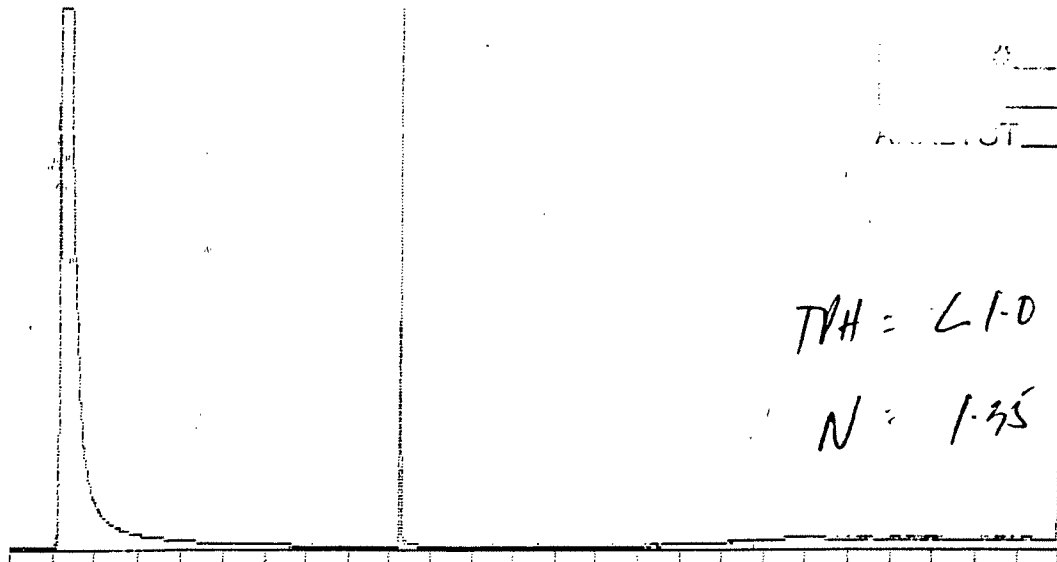
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET. TIME	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:AM01-103.FTS Printed on 12-07-1993 at 16:29:24
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0. mu.
 Full Range: 100 millivolts







TPH = 21.0 mg/L

N = 1.35 mg/L

[Interface 6] 0-25 Min Scale: 100 Mv
G9311378-7 Processed: 12-07-1993 17:02:22, segment 9, cycle 104
RAW DATA SAVED IN FILE L:AM01-104.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 17:03:45 Version 5.1.5 *****
* Sample Name: G9311378-7 B#129/931207/25ML>5ML Data File: L:AM01-104 *
* Date: 12-07-1993 17:02:22 Method: DIESEL *
* Interface: 6 Cycle#: 104 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: Detector 1: *
* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.217	13015495	98.731500	993975		100.000	13.1
2	9.250	167225	1.2685	117169		1.285	1.4

Total Area: 13182720 Area Reject: 2000 One sample per 1.000 sec.

$$N = 167225 \times 4.0239 \times 10^{-5} \times \frac{5}{25} = 1.35 \text{ mg/L}$$

***** EXTERNAL STANDARD TABLE *****

***** 12-07-1993 17:03:45 Version 5.1.5 *****
* Sample Name: G9311378-7 B#129/931207/25ML>5ML Data File: L:AM01-104 *
* Date: 12-07-1993 17:02:22 Method: DIESEL 12-03-1993 15:15:14 # 583 *
* Interface: 6 Cycle#: 104 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *

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BY SPV DATE 11/10/93

003783

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* Conditions: 45 20/MIN FINAL 500 HOLD 8.20

* Detector 0:

Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Ending retention time: 25.00

Area reject: 2000

One sample per 1.000 sec.

Amount injected: 1.00

Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.217		1301.5494	99.4857%	13015495	993975	13.1 OV			1.0000E-04
2	9.250	NAPHTHALENE	6.7290	0.5143%	167225	117169	1.4 1	0	0	4.0239E-05

TOTAL AMOUNT = 1308.2784

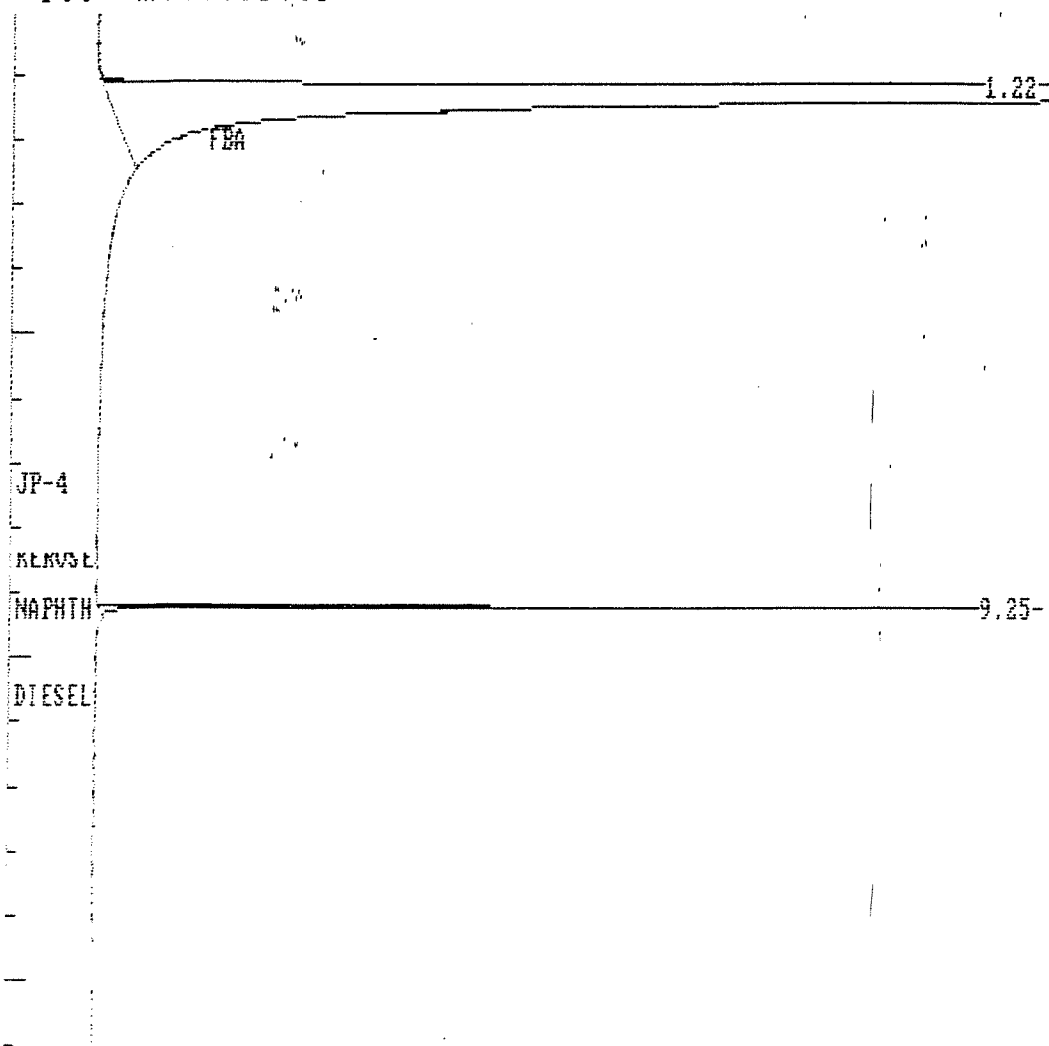
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET. TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:AM01-104.PTS Printed on 12-07-1993 at 17:03:53

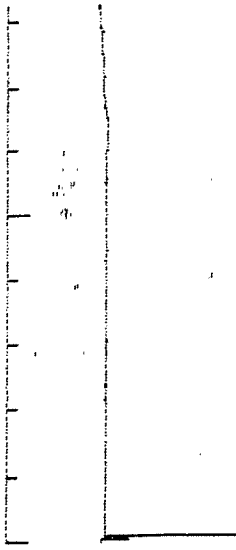
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

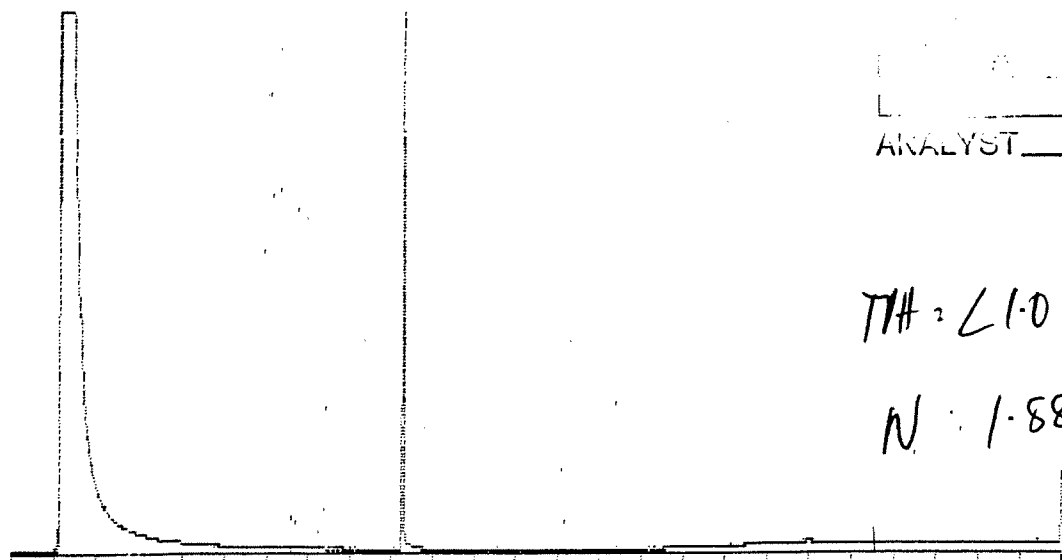
Full Range: 100 millivolts



003784

2





129
12-09-93
ANALYST JP

TH: 1.0 $\mu\text{g}/\text{L}$
N: 1.88 $\mu\text{g}/\text{L}$

[Interface 6] 0-25 Min Scale: 100 Mv
G9311378-1 Processed: 12-07-1993 18:47:36, segment 12, cycle 107
RAW DATA SAVED IN FILE L:AM01-107.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 18:48:59 Version 5.1.5 *****
* Sample Name: G9311378-1 B#129/931207/25ML>5ML
Data File: L:AM01-107
* Date: 12-07-1993 18:47:36 Method: DIESEL
* Interface: 6 Cycle#: 107 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25
Solvent Description:
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25
* Detector 0: Detector 1:
* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
2	9.267	233232	100.0000	1	111482	100.000	2.1

Total Area: 233232 Area Reject: 2000 One sample per 1.000 sec.

$N = 233232 \times 4.0239 \times 10^{-5} \times \frac{5}{1.25} = 1.88 \mu\text{g}/\text{L}$

***** EXTERNAL STANDARD TABLE *****
***** 12-07-1993 18:49:00 Version 5.1.5 *****
* Sample Name: G9311378-1 B#129/931207/25ML>5ML
Data File: L:AM01-107
* Date: 12-07-1993 18:47:36 Method: DIESEL 12-03-1993 15:15:14 # 583
* Interface: 6 Cycle#: 107 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25
Solvent Description:
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

REVIEWED & APPROVED
BY JP DATE 12/10/93

003786 (1)

* Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

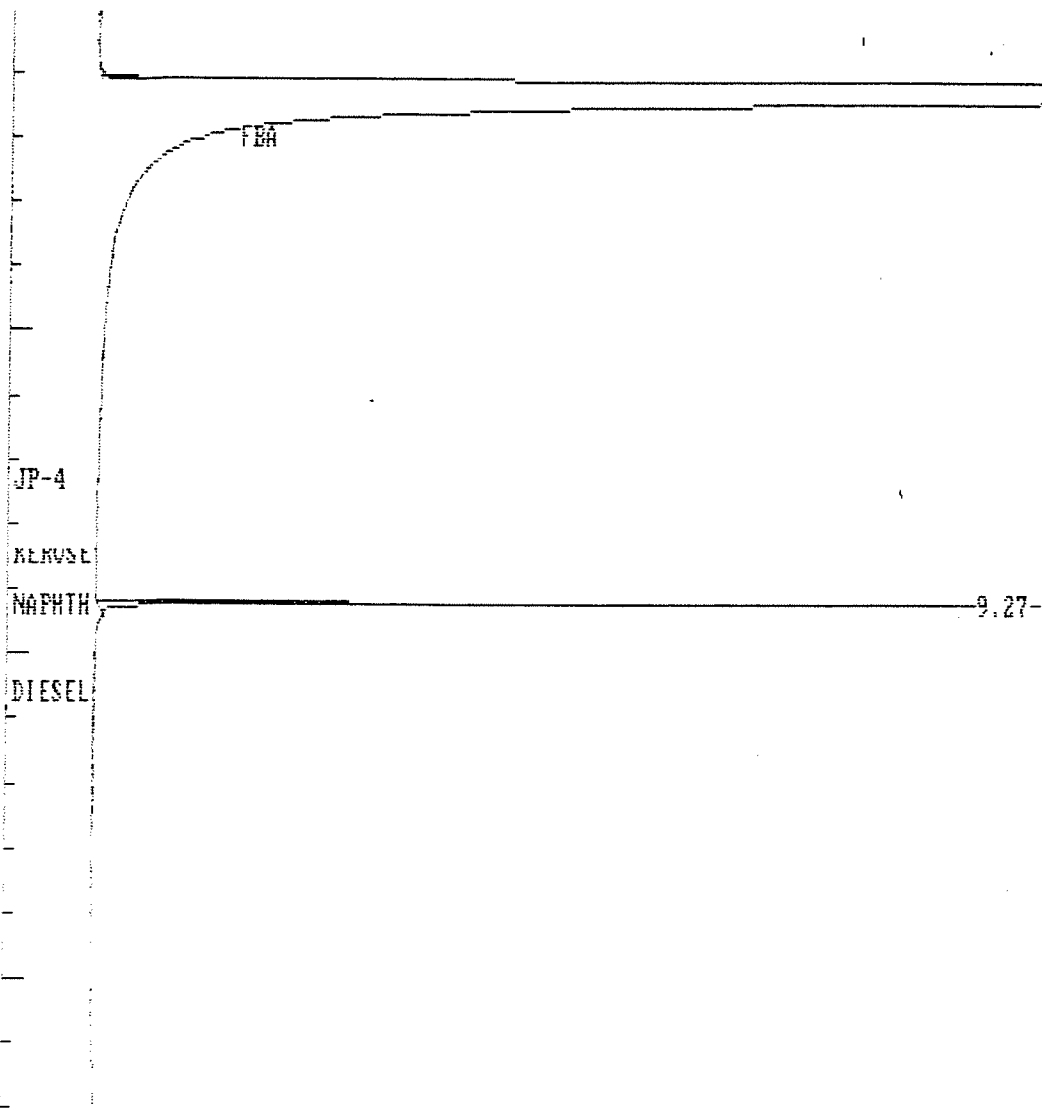
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
2	9.267	NAPHTHALENE	9.3851	100.0000%	233232	111482	2.11	0	.1801	4.0239E-05

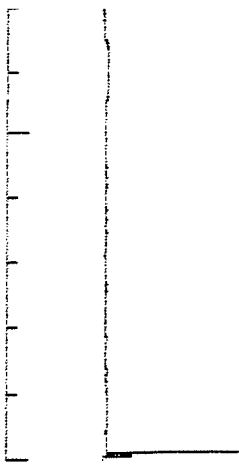
TOTAL AMOUNT = 9.3851

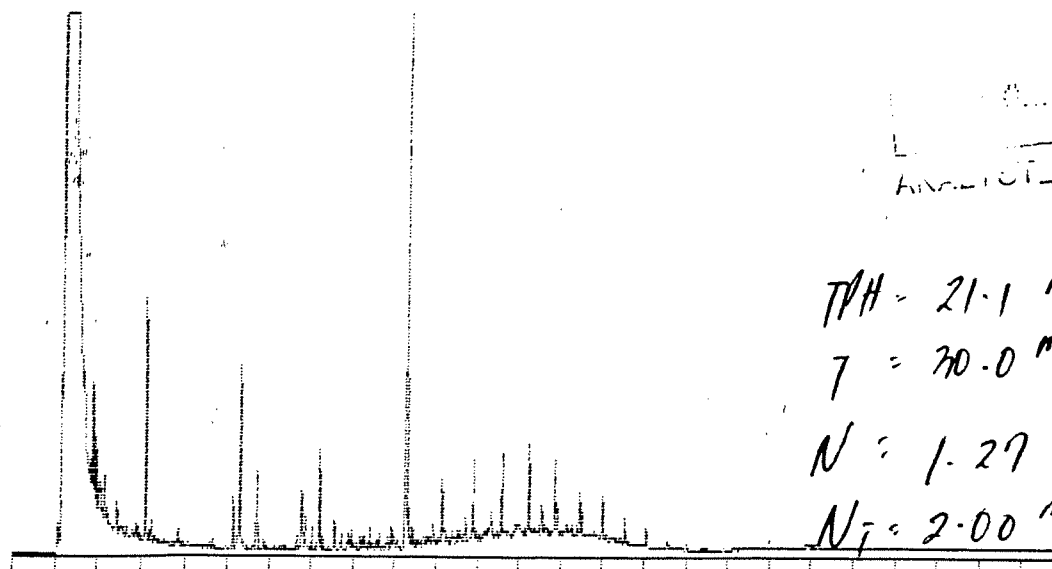
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:AM01-107.PTS Printed on 12-07-1993 at 18:49:07
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts







[Interface 6] 0-25 Min Scale: 100 Mu
 G9311378-1 Processed: 12-07-1993 19:22:34, segment 13, cycle 108
 RAW DATA SAVED IN FILE L:AM01-108.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 19:23:58 Version 5.1.5 *****

* Sample Name: G9311378-1S1 B#129/931207/25ML>5ML

Data File: L:AM01-108

* Date: 12-07-1993 19:22:35 Method: DIESEL

* Interface: 6 Cycle#: 108 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5.25

* Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0: Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.067	7651	0.7804	1	4386	3.964	1.7
2	1.883	55927	5.7044	1	19973	28.978	2.8
3	2.083	17299	1.7644	1	5527	8.963	3.1
4	2.183	16959	1.7297	1	8081	8.787	2.1
5	2.467	9482	0.9671	1	5367	4.913	1.8
7	2.900	6424	0.6552	1	2410	3.328	2.7
8	3.100	93440	9.5306	1	44659	48.415	2.1
9	3.817	5909	0.6027	1	2555	3.062	2.3
10	4.650	4249	0.4333	1	1312	2.201	3.2
11	5.133	15259	1.5564	1	9502	7.906	1.6
12	5.283	72040	7.3479	1	37432	37.326	2.2
13	5.700	22945	2.3403	1	14285	11.888	1.6
14	6.767	47889	4.8845	1	10587	24.813	4.5
15	7.200	32175	3.2813	1	18446	16.671	1.7
16	7.550	10350	1.0556	1	5442	5.562	1.9
17	7.717	6005	0.6125	1	2888	3.111	2.1
18	7.853	4565	0.4656	1	2540	2.365	1.8

6.379288 x 10⁻⁵
 8.7072 x 10⁻⁵
 = 6.2298 mg/L

REVIEWED & APPROVED
 BY SPN DATE 12/10/93

003789
 (1)

19	7.967	8467	0.8636	1	2785	4.287	2.0
20	8.383	25129	2.5631	1	4349	13.020	5.8
21	8.917	24442	2.4930	1	4095	12.664	6.0
22	9.250	193000	19.6854	1	119520	100.000	1.6
23	9.433	4897	0.4995	1	3420	2.537	1.4
24	9.917	23871	2.4348	1	3985	12.368	6.0
	10.133	21453	2.1881	1	11077	11.116	1.9
	10.717	18809	1.9185	1	4596	9.746	4.1
27	10.883	28129	2.8691	1	14568	14.575	1.9
28	11.317	23175	2.3638	1	4361	12.008	5.3
29	11.583	34588	3.5279	1	15426	17.921	2.2
30	11.933	19862	2.0259	1	2083	10.291	9.5
31	12.233	26399	2.6926	1	16298	13.678	1.6
32	12.850	49810	5.0804	1	13316	25.808	3.7
33	13.117	9842	1.0039	1	1295	5.099	7.6
34	13.450	24073	2.4554	1	7855	12.473	3.1
35	14.533	8668	0.8841	1	4685	4.491	1.9
36	15.050	4723	0.4817	1	3167	2.447	1.5
37	15.550	2520	0.2570	1	1288	1.305	2.0

Total Area: 980422 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 12-07-1993 19:24:05 Version 5.1.5 *****

* Sample Name: G9311378-1S1 B#129/931207/25ML>5ML

Data File: L:AM01-108

* Date: 12-07-1993 19:22:35 Method: DIESEL 12-03-1993 15:15:14 # 583

* Interface: 6 Cycle#: 108 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

Detector 0: Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.067		0.7651	0.9071%	7651	4386	1.7	1		1.0000E-04
2	1.883		5.5927	6.6307%	55927	19973	2.8	1		1.0000E-04
3	2.083		1.7299	2.0510%	17299	5527	3.1	1		1.0000E-04
4	2.183		1.6959	2.0106%	16959	8081	2.1	1		1.0000E-04
5	2.467		0.9482	1.1242%	9482	5367	1.8	1		1.0000E-04
7	2.900		0.6423	0.7616%	6424	2410	2.7	1		1.0000E-04
8	3.100		9.3440	11.0782%	93440	44659	2.1	1		1.0000E-04
9	3.817		0.5909	0.7006%	5909	2555	2.3	1		1.0000E-04
10	4.650		0.4248	0.5037%	4249	1312	3.2	1		1.0000E-04
11	5.133		1.5259	1.8091%	15259	9502	1.6	1		1.0000E-04
12	5.283		7.2040	8.5410%	72040	33432	2.2	1		1.0000E-04
	5.700		2.2945	2.7203%	22945	14285	1.6	1		1.0000E-04
	6.767		4.7889	5.6777%	47889	10587	4.5	1		1.0000E-04
15	7.200		3.2175	3.8146%	32175	18446	1.7	1		1.0000E-04

003790

2

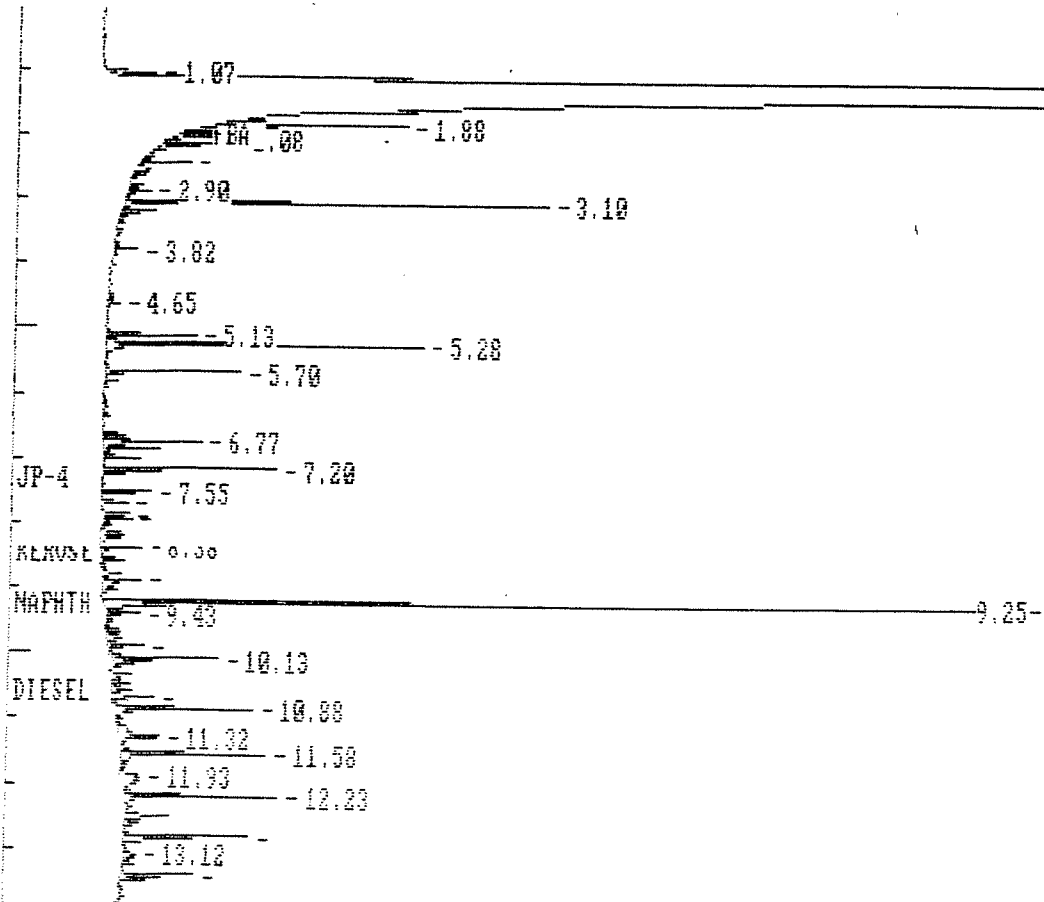
16	7.550	1.0350	1.2270%	10350	5442	1.9 1			1.0000E-04
17	7.717	0.6005	0.7119%	6005	2888	2.1 1			1.0000E-04
18	7.883	0.4565	0.5412%	4565	2540	1.8 1			1.0000E-04
19	7.967	0.8467	1.0038%	8467	2783	3.0 1			1.0000E-04
20	8.383 KEROSENE	1.2700	1.5057%	25129	4349	5.8 1	0	-5535	5.0540E-05
21	9.917	2.4442	2.8978%	24442	4095	6.0 1			1.0000E-04
22	9.250 NAPHTHALENE	7.7662	9.2075%	193000	119520	1.6 1	0	0	4.0239E-05
23	9.433	0.4897	0.5806%	4897	3420	1.4 1			1.0000E-04
24	9.917	2.3871	2.8301%	23871	3985	6.0 1			1.0000E-04
25	10.133	2.1453	2.5435%	21453	11077	1.9 1			1.0000E-04
26	10.717 DIESEL	0.9614	1.1398%	18809	4596	4.1 1	0	1.100	5.1114E-05
27	10.883	2.8129	3.3350%	28129	14568	1.9 1			1.0000E-04
28	11.317	2.3175	2.7476%	23175	4361	5.3 1			1.0000E-04
29	11.583	3.4588	4.1007%	34588	15426	2.2 1			1.0000E-04
30	11.933	1.9862	2.3548%	19862	2083	9.5 1			1.0000E-04
31	12.233	2.6398	3.1298%	26399	16298	1.6 1			1.0000E-04
32	12.850	4.9809	5.9054%	49810	13316	3.7 1			1.0000E-04
33	13.117	0.9842	1.1669%	9842	1295	7.6 1			1.0000E-04
34	13.450	2.4073	2.8541%	24073	7855	3.1 1			1.0000E-04
35	14.533	0.8668	1.0277%	8668	4685	1.9 1			1.0000E-04
36	15.050	0.4723	0.5600%	4723	3167	1.5 1			1.0000E-04
37	15.550	0.2520	0.2987%	2520	1288	2.0 1			1.0000E-04

TOTAL AMOUNT = 84.3460

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL

Data File = L:AM01-108.PTS Printed on 12-07-1993 at 19:24:28
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



003791

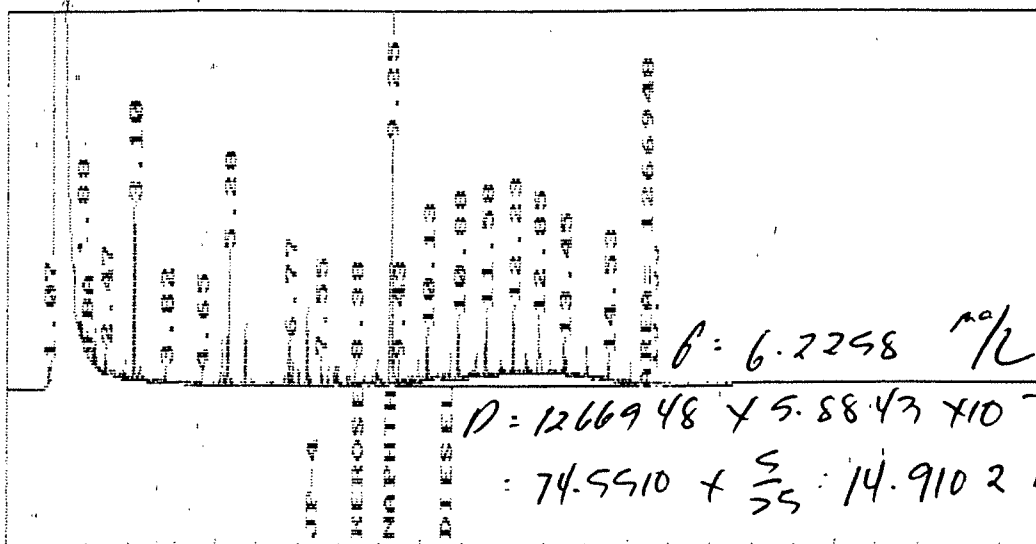
-14.53

-15.55

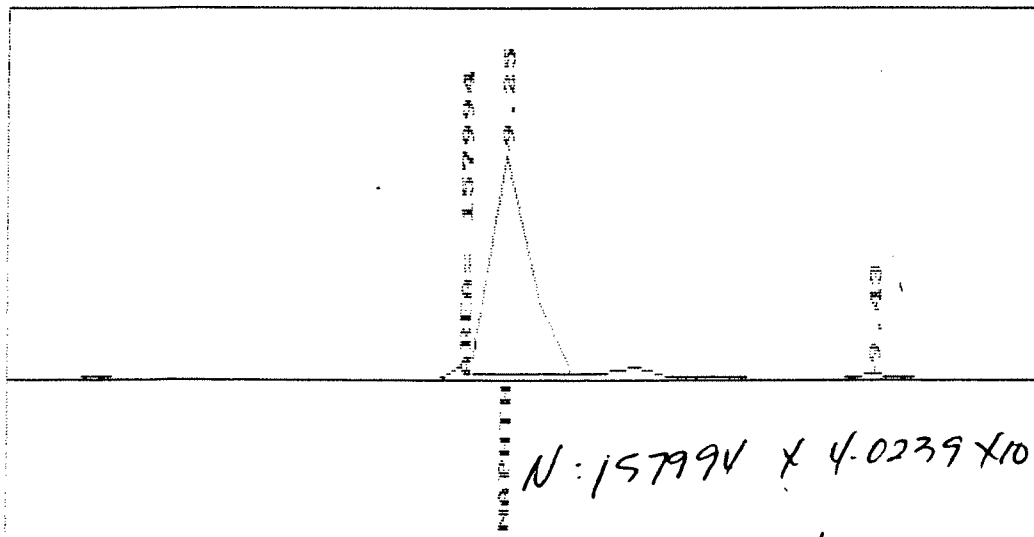
003792

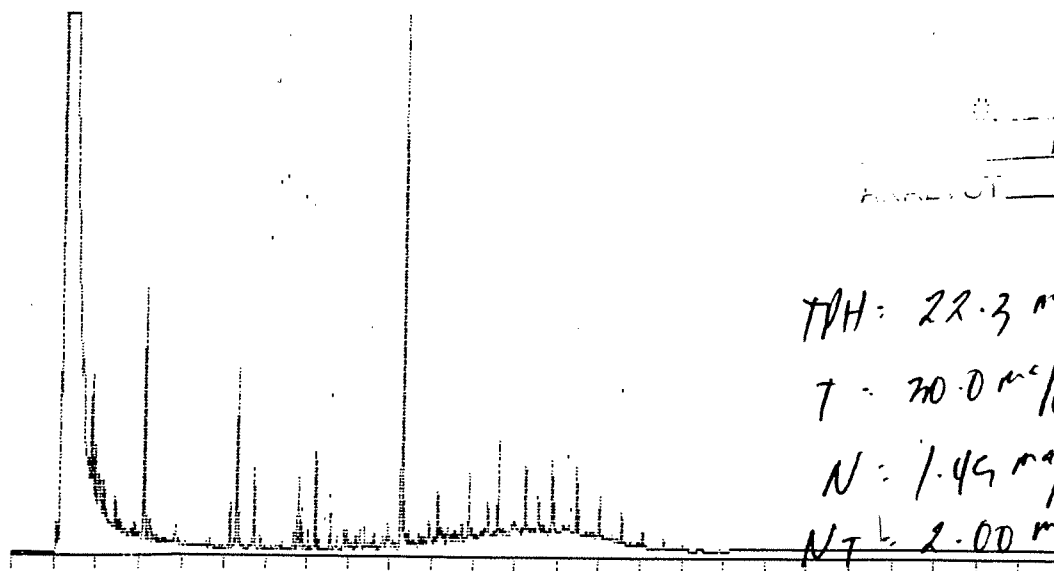
(4)

START TIME= 7.220 START HEIGHT= 7030
 STOP TIME= 15.550 STOP HEIGHT= 5630
 AREA = 1266948
 Plot of data file: L:AM01-108.PTS
 Date: 12-09-1993 Time: 10:18:34
 Sample Name: G9311378-1S1 B#129/9
 Start Time= 0.02 Stop Time = 25.02 Min. Scale= 5136 Max. Scale= 105136



START TIME= 9.283 START HEIGHT= 10712
 STOP TIME= 9.233 STOP HEIGHT= 10712
 AREA = 157994
 Plot of data file: L:AM01-108.PTS
 Date: 12-09-1993 Time: 10:19:01
 Sample Name: G9311378-1S1 B#129/9
 Start Time= 9.00 Stop Time = 9.52 Min. Scale= 5136 Max. Scale= 205136





179
17.09.93
JP

TH: 22.3 mg/L } 742
T: 20.0 mg/L }
N: 1.45 mg/L } 722
NT: 2.00 mg/L }

[Interface 6] 0-25 Min Scale: 100 Mu
39311378-1 Processed: 12-07-1993 19:57:48, segment 14, cycle 109
RAW DATA SAVED IN FILE L:AM01-109.PTS

***** AREA PERCENT REPORT *****

***** 12-07-1993 19:59:12 Version 5.1.5 *****
* Sample Name: G9311378-1S2 B#129/931207/25ML>5ML Data File: L:AM01-109
* Date: 12-07-1993 19:57:49 Method: DIESEL
* Interface: 6 Cycle#: 109 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25
* Solvent Description:
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25
* Detector 0: Detector 1:
* Misc. Information: 536-25 INITIAL CALIBRATION
Starting Delay: 0.00 Run Time: 25.00

pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.067	8009	0.8174	1	4515	3.846	1.8
2	1.950	21790	2.2241	1	0	10.466	0.0
3	2.083	18677	1.9063	1	6654	8.970	12.8
4	2.200	16639	1.6983	1	6873	7.992	2.4
5	2.467	10039	1.0247	1	6043	4.822	1.7
6	2.583	8438	0.8613	1	1945	4.053	4.3
7	2.833	5201	0.3267	1	1310	1.537	2.4
8	2.900	6347	0.6478	1	2337	3.048	2.7
9	3.117	97992	10.0020	1	46301	47.065	2.1
10	3.333	4379	0.4470	1	1220	2.103	3.6
11	3.817	7564	0.7721	1	3056	3.633	12.5
12	4.650	2962	0.3023	1	1330	1.423	2.2
13	5.150	15776	1.6103	1	8138	7.577	1.9
14	5.300	72897	7.4406	1	33620	35.012	2.2
15	5.717	23857	2.4351	1	14639	11.458	1.6
16	5.867	5113	0.3177	1	2168	1.495	1.4
17	6.400	3185	0.3251	1	1077	1.530	3.0

6.385161 x 10⁻⁵
8.2072 x 10⁻⁵
6.3222 x 10⁻⁵

REVIEWED & APPROVED
DATE 12/10/93

003794

18	6.667	2247	0.2667	1	2000	2.000	1.0
19	6.783	39755	4.0578	1	13361	19.094	3.0
20	7.200	29432	3.0041	1	17488	14.136	1.7
21	7.567	11039	1.1268	1	6549	5.302	1.7
22	7.900	4696	0.4793	1	2642	2.255	1.8
23	7.967	9895	1.0100	1	2782	4.753	3.6
	8.183	5313	0.5423	1	2377	2.552	2.2
	8.400	9807	1.0010	1	4104	4.710	2.4
26	8.633	8479	0.8655	1	2609	4.072	3.3
27	8.933	19923	2.0335	1	4449	9.569	4.5
28	9.267	208206	21.2517	1	120870	100.000	1.7
29	9.450	9968	1.0175	1	2879	4.788	3.5
30	9.700	13652	1.3935	1	2029	6.557	6.7
31	9.933	12958	1.3226	1	4415	6.224	2.9
32	10.383	11148	1.1379	1	2534	5.354	4.4
33	10.733	20108	2.0524	1	3260	9.658	6.2
34	10.883	30088	3.0710	1	12070	14.451	2.5
35	11.333	14100	1.4391	1	5670	6.772	2.5
36	11.583	36969	3.7734	1	17127	17.756	2.2
37	11.950	21132	2.1569	1	2623	10.149	8.1
38	12.233	27479	2.8048	1	12070	13.198	2.3
39	12.550	18754	1.9142	1	6441	9.007	2.9
40	12.867	33874	3.4575	1	12836	16.269	2.6
41	13.450	25119	2.5639	1	11876	12.064	2.1
42	14.017	15445	1.5765	1	7307	7.418	2.1
43	14.550	9152	0.9341	1	5363	4.396	1.7
44	15.550	2816	0.2874	1	1788	1.353	1.6

Total Area: 979716 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 12-07-1993 19:59:21 Version 5.1.5 *****

* Sample Name: G9311378-152 B#129/931207/25ML>5ML

Data File: L:AM01-109

* Date: 12-07-1993 19:57:49 Method: DIESEL 12-03-1993 15:15:14 # 583

* Interface: 6 Cycle#: 109 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

* Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0: Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

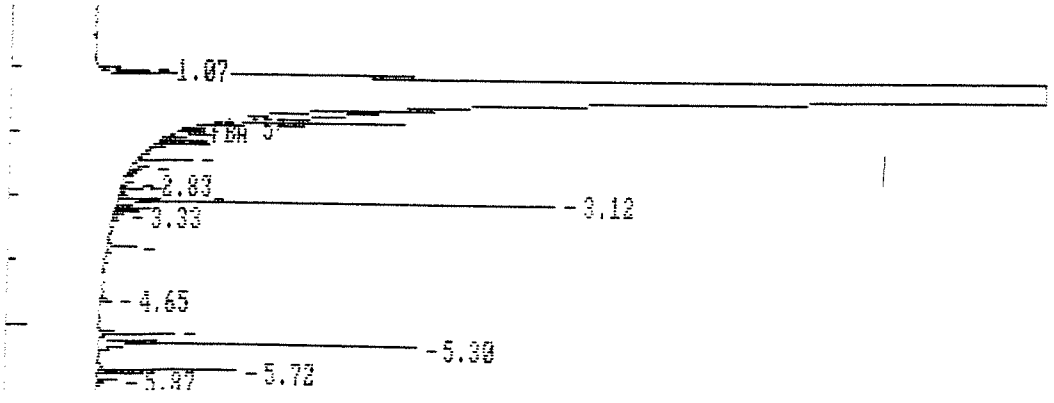
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.667		0.8308	0.9527%	8909	4515	1.8 1			1.0000E-04
2	1.950		2.1790	2.5922%	21790	0	0 0 1			1.0000E-04
3	2.087		1.8676	2.2218%	18677	6654	2.8 1			1.0000E-04
	2.200		1.5639	1.9794%	16639	6873	2.4 1			1.0000E-04
	2.437		1.0039	1.1943%	10039	6043	1.7 1			1.0000E-04
6	2.583		0.9438	1.0038%	8438	1945	4.3 1			1.0000E-04

7	2.833	0.3201	0.3807%	3201	1310	2.4	1	1.0000E-04
8	2.900	0.6347	0.7550%	6347	2337	2.7	1	1.0000E-04
9	3.117	9.7991	11.6572%	97992	46301	2.1	1	1.0000E-04
10	3.333	0.4379	0.5209%	4379	1220	3.6	1	1.0000E-04
11	3.817	0.7564	0.8998%	7564	3056	2.5	1	1.0000E-04
12	4.650	0.2962	0.3524%	2962	1330	2.2	1	1.0000E-04
13	5.150	1.5776	1.8767%	15776	8138	1.9	1	1.0000E-04
14	5.300	7.2897	8.6719%	72897	33626	2.2	1	1.0000E-04
15	5.717	2.3857	2.8381%	23857	14639	1.6	1	1.0000E-04
16	5.867	0.3113	0.3703%	3113	2168	1.4	1	1.0000E-04
17	6.400	0.3185	0.3789%	3185	1077	3.0	1	1.0000E-04
18	6.667	0.5548	0.6601%	5549	3005	1.8	1	1.0000E-04
19	6.783	3.9755	4.7293%	39755	13361	3.0	1	1.0000E-04
20	7.200	2.9432	3.5013%	29432	17488	1.7	1	1.0000E-04
21	7.567	1.1039	1.3132%	11039	6549	1.7	1	1.0000E-04
22	7.900	0.4696	0.5586%	4696	2642	1.8	1	1.0000E-04
23	7.967	0.9895	1.1771%	9895	2782	3.6	1	1.0000E-04
24	8.183	0.5313	0.6320%	5313	2377	2.2	1	1.0000E-04
25	8.400 KEROSENE	0.4956	0.5896%	9807	4104	2.4	1	5.0540E-05
26	8.633	0.8479	1.0087%	8479	2609	3.3	1	1.0000E-04
27	8.933	1.9923	2.3701%	19923	4449	4.5	1	1.0000E-04
28	9.267 NAPHTHALENE	8.3781	9.9667%	208206	120870	1.7	1	4.0239E-05
29	9.450	0.9968	1.1859%	9968	2879	3.5	1	1.0000E-04
30	9.700	1.3652	1.6241%	13652	2029	6.7	1	1.0000E-04
31	9.933	1.2958	1.5415%	12958	4415	2.9	1	1.0000E-04
32	10.383	1.1148	1.3262%	11148	2534	4.4	1	1.0000E-04
33	10.733 DIESEL	1.0278	1.2227%	20108	3260	6.2	1	5.1114E-05
34	10.883	3.0088	3.5792%	30088	12070	2.5	1	1.0000E-04
35	11.333	1.4100	1.6773%	14100	5670	2.5	1	1.0000E-04
36	11.583	3.6968	4.3978%	36969	17127	2.2	1	1.0000E-04
37	11.950	2.1131	2.5138%	21132	2623	8.1	1	1.0000E-04
38	12.233	2.7479	3.2689%	27479	12070	2.3	1	1.0000E-04
39	12.550	1.8754	2.2310%	18754	6441	2.9	1	1.0000E-04
40	12.867	3.3874	4.0297%	33874	12836	2.6	1	1.0000E-04
41	13.450	2.5118	2.9881%	25119	11876	2.1	1	1.0000E-04
42	14.017	1.5445	1.8374%	15445	7307	2.1	1	1.0000E-04
43	14.550	0.9152	1.0887%	9152	5363	1.7	1	1.0000E-04
44	15.550	0.2816	0.3350%	2816	1788	1.6	1	1.0000E-04

TOTAL AMOUNT = 84.0610

PEAKS NOT FOUND IN THIS RUN
NAME ADJUSTED RET.TIME. REFERENCE PEAK
JP-4 7.33 DIESEL

Data File = L:AM01-109.PTS Printed on 12-07-1993 at 19:59:48
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



JP-4

-6.67--6.78

-7.57

KEROSE

-8.48

NAPHTH

-9.45

-9.27-

DIESEL

-10.38

-10.88

-11.95

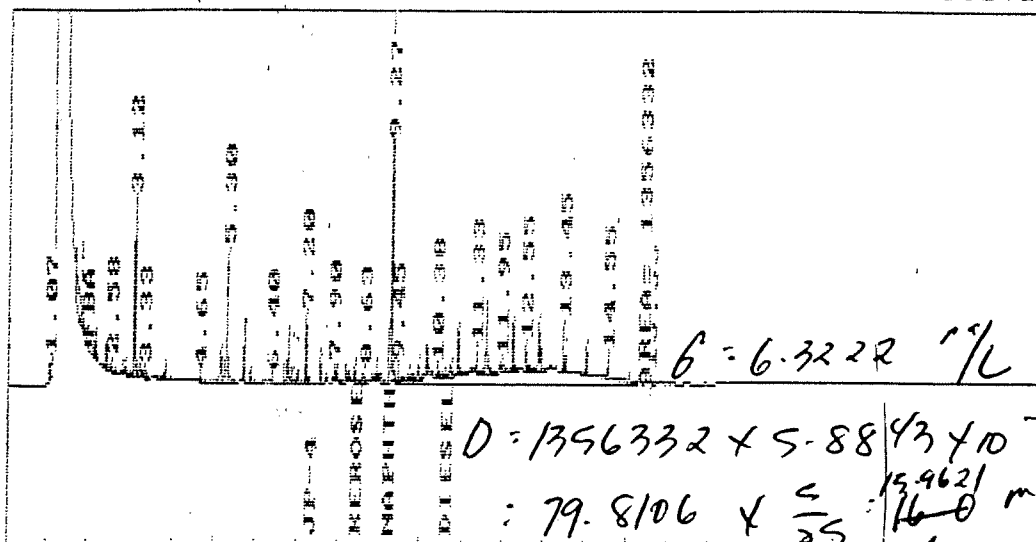
-12.23

-13.45

-14.55

-15.35

START TIME= 9.367 START HEIGHT= 5024
 STOP TIME= 15.550 STOP HEIGHT= 5634
 Plot of data file: L:AM01-109.PTS
 Date: 12-09-1993 Time: 10:20:15
 Sample Name: G9311378-1S2 B#129/9
 Start Time= 0.02 Stop Time = 25.02 Min. Scale= 5095 Max. Scale= 105095



AREA = 1356332

START TIME= 9.33 START HEIGHT= 8182

STOP TIME= 9.283 STOP HEIGHT= 8182

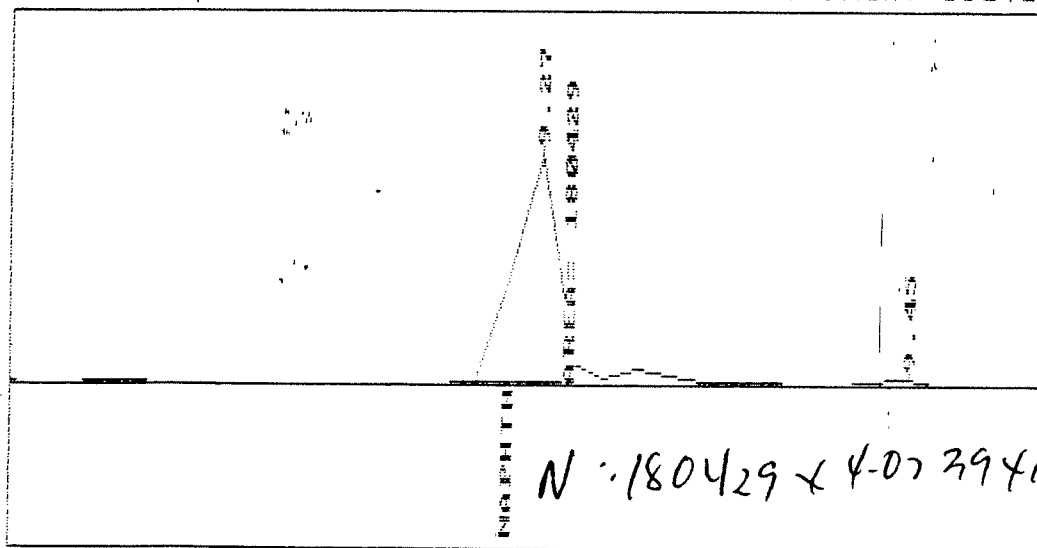
AREA = 180429

Plot of data file: L:AM01-109.PTS

Date: 12-09-1993 Time: 10:20:35

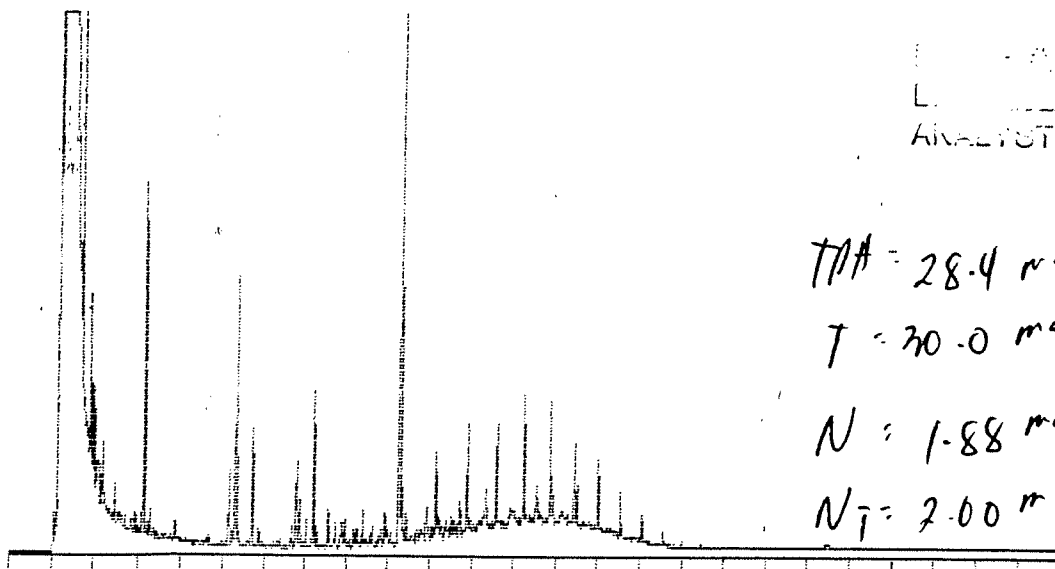
Sample Name: G9311378-1S2 B#129/9

Start Time= 9.00 Stop Time = 9.52 Min. Scale= 5095 Max. Scale= 205095



003798

(5)



12.9
17-09-93
ANALYST: JN

TMA = 28.4 mg/L
T = 30.0 mg/L } 958
N = 1.88 mg/L
N₁ = 2.00 mg/L } 942

[Interface 6] 0-25 Min Scale: 100 Mv
LCS-1 B Processed: 12-08-1993 03:36:27, segment 27, cycle 122
RAW DATA SAVED IN FILE L:LM01-122.PTS

fuel POT
12-762-1

***** AREA PERCENT REPORT *****

***** 12-08-1993 03:37:52 Version 5.1.5 *****
* Sample Name: LCS-1 B#129/931207/25ML>5ML Data File: L:LM01-122 *
* Date: 12-08-1993 03:36:27 Method: DIESEL *
* Interface: 6 Cycle#: 122 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: Detector 1: *
* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.067	8078	0.5586	1	5190	2.874	1.6
3	1.917	75724	5.2363	1	30341	26.937	2.5
4	2.083	24939	1.7245	1	5887	8.871	4.2
5	2.217	22180	1.5337	1	11401	7.890	1.9
6	2.500	12782	0.8839	1	6549	4.547	2.0
7	2.600	9101	0.6294	1	1997	3.238	4.6
8	2.717	2594	0.1794	1	1846	0.923	1.4
9	2.850	4052	0.2802	1	2279	1.441	1.8
10	2.933	8244	0.5700	1	3410	2.932	2.4
11	3.133	128801	8.9065	1	64178	45.817	2.0
12	3.567	5579	0.3858	1	1330	1.985	4.2
13	3.567	5050	0.3492	1	1017	1.796	5.0
14	3.850	8161	0.5643	1	3459	2.903	2.4
15	4.667	316	0.5648	1	1822	2.906	4.5
16	5.150	21024	1.4538	1	13655	7.478	1.5
17	5.300	99515	6.8815	1	49083	35.399	2.0
18	5.717	31262	2.1618	1	21024	11.121	1.5
19	5.867	4269	0.2952	1	2980	1.518	1.4

6: 560 147 x 5/25 x
8: 2072 x 10 -5
= 9.1945 mg/L

REVIEWED & APPROVED

003799

20	6.233	3715	0.2569	1	1129	1.321	3.3
21	6.400	3338	0.2308	1	1216	1.187	2.7
22	6.667	7309	0.5054	1	4194	2.600	1.7
23	6.783	51693	3.5746	1	15851	18.388	3.3
24	7.200	44617	3.0853	1	28473	15.871	1.6
25	7.550	14558	1.0067	1	6684	5.179	2.2
26	7.717	8419	0.5821	1	4169	2.995	2.0
27	7.883	6604	0.4567	1	3494	2.349	1.9
28	7.967	12169	0.8415	1	4102	4.329	3.0
29	8.183	7643	0.5285	1	2898	2.719	2.6
30	8.383	13052	0.9025	1	6324	4.643	2.1
31	8.917	51210	3.5412	1	5992	18.216	8.5
32	9.250	281120	19.4394	1	170939	100.000	1.6
33	9.433	7208	0.4984	1	4987	2.564	1.4
34	9.817	16093	1.1128	1	1969	5.724	8.2
35	10.133	65013	4.4956	1	16114	23.126	4.0
36	10.383	14055	0.9719	1	3274	5.000	4.3
37	10.517	13439	0.9293	1	3227	4.781	4.2
38	10.717	12939	0.8947	1	6235	4.603	2.1
39	10.883	40016	2.7671	1	20078	14.234	2.0
40	11.317	33357	2.3066	1	7134	11.866	4.7
41	11.583	52599	3.6372	1	18833	18.711	2.8
42	11.933	7227	0.4997	1	1847	2.571	3.9
43	12.233	42077	2.9096	1	23558	14.967	1.8
44	12.533	14927	1.0322	1	6394	5.310	2.3
45	12.850	47020	3.2514	1	21704	16.726	2.2
46	13.167	6344	0.4387	1	1611	2.257	3.9
47	13.433	36892	2.5510	1	14479	13.123	2.5
48	13.800	3999	0.2765	1	967	1.423	4.1
49	14.000	21044	1.4552	1	12320	7.486	1.7
50	14.533	13287	0.9188	1	8384	4.726	1.6
51	15.050	7441	0.5145	1	4735	2.647	1.6
52	15.533	3969	0.2745	1	2379	1.412	1.7
53	16.000	2225	0.1539	1	1050	0.791	2.1

Total Area: 1446134 Area Reject: 2000 One sample per 1.000 sec.

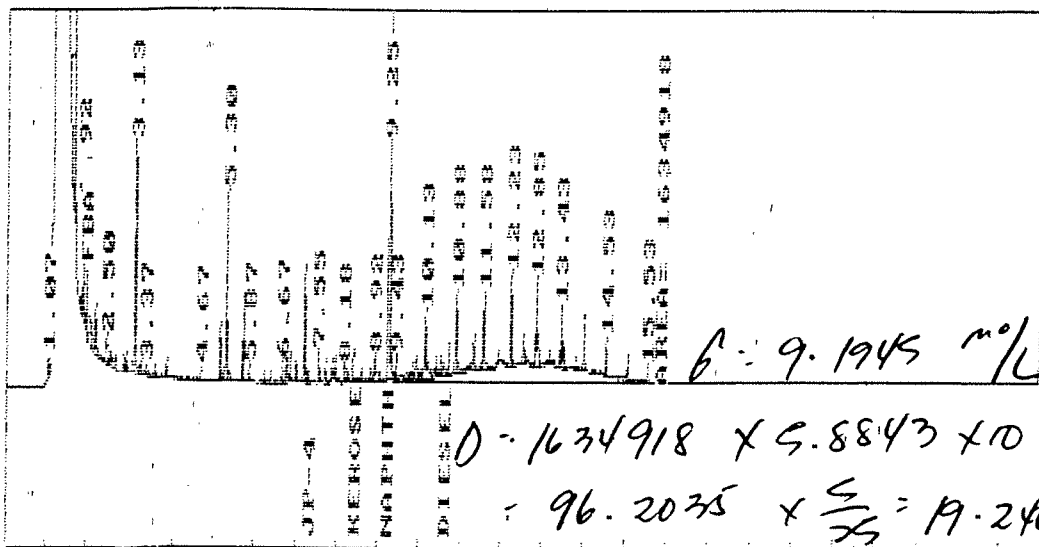
```

***** 12-08-1993 03:38:03 Version 5.1.5 *****
* Sample Name: LCS-1      B#129/931207/25ML>5ML      Data File: L:LM01-122
* Date: 12-08-1993 03:36:27 Method: DIESEL 12-03-1993 15:15:14 # 583
* Interface: 6      Cycle#: 122 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
*****
* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25
* Solvent Description:
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25
* Detector 0:
* Misc. Information: 536-25 INITIAL CALIBRATION
*****
Starting Delay: 0.00      Ending retention time: 25.00
Area reject: 2000      One sample per 1.000 sec.
Amount injected: 1.00      Dilution factor: 1.00
Sample Weight: 1.00000

```

RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
----------	-----------	------------------------	-----------------	------	--------	--------------	----------	------------------	-----------

START TIME= 9.250 START HEIGHT= 6381
 STOP TIME= 16.000 STOP HEIGHT= 6381
 AREA = 1634918
 Plot of data file: L:LM01-122.PTS
 Date: 12-09-1993 Time: 10:22:00
 Sample Name: LCS-1 B#129/931207/
 Start Time= 0.02 Stop Time = 25.02 Min. Scale= 5033 Max. Scale= 105033

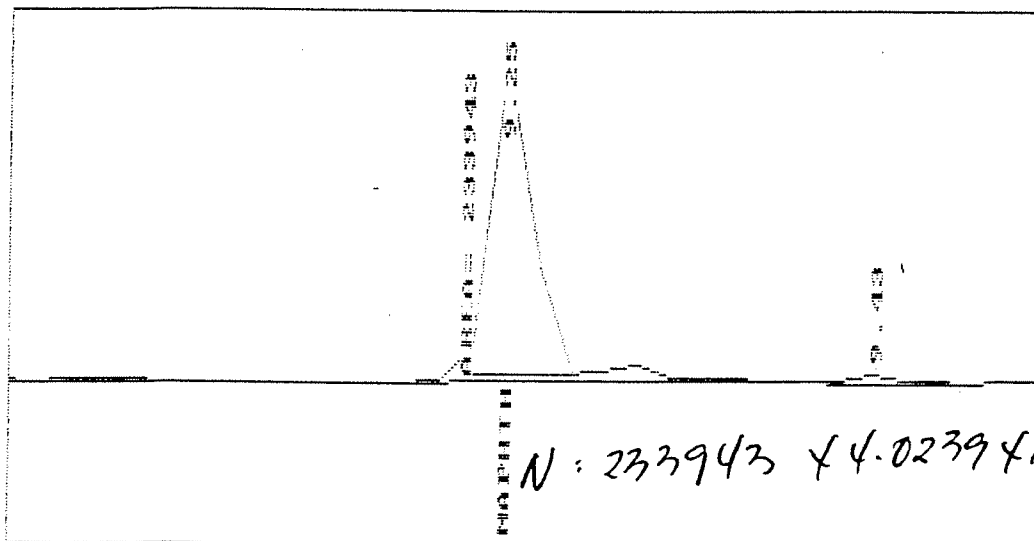


$$D = 1634918 \times 5.8843 \times 10^{-5}$$

$$= 96.2035 \times \frac{5}{25} = 19.2407 \%$$

START TIME= 9.283 START HEIGHT= 12187
 STOP TIME= 9.233 STOP HEIGHT= 12187
 AREA = 233943
 Plot of data file: L:LM01-122.PTS
 Date: 12-09-1993 Time: 10:22:21
 Sample Name: LCS-1 B#129/931207/
 Start Time= 9.00 Stop Time = 9.52 Min. Scale= 5033 Max. Scale= 205033

$$T/H = 9.1945 + 19.2407 = 28.4 \%$$



$$N = 233943 \times 4.0239 \times 10^{-5} \times \frac{5}{25}$$

$$= 1.88 \%$$

1	1.067	0.8078	0.6385%	8078	5170	1.0	1	1.0000E-04
3	1.917	7.5724	5.9856%	75724	30341	2.5	1	1.0000E-04
4	2.083	2.4939	1.9713%	24939	5887	4.2	1	1.0000E-04
5	2.217	2.2129	1.7532%	22180	11401	1.9	1	1.0000E-04
6	2.500	1.2782	1.0103%	12782	6549	2.0	1	1.0000E-04
7	2.600	0.9101	0.7194%	9101	1997	4.6	1	1.0000E-04
	.717	0.2594	0.2050%	2594	1846	1.4	1	1.0000E-04
	2.850	0.4052	0.3203%	4052	2279	1.8	1	1.0000E-04
10	2.933	0.8244	0.6516%	8244	3410	2.4	1	1.0000E-04
11	3.133	12.8800	10.1810%	128801	64178	2.0	1	1.0000E-04
12	3.367	0.5579	0.4410%	5579	1330	4.2	1	1.0000E-04
13	3.567	0.5050	0.3992%	5050	1017	5.0	1	1.0000E-04
14	3.850	0.8161	0.6451%	8161	3459	2.4	1	1.0000E-04
15	4.667	0.8168	0.6456%	8168	1822	4.5	1	1.0000E-04
16	5.150	2.1024	1.6618%	21024	13655	1.5	1	1.0000E-04
17	5.300	9.9515	7.8661%	99515	49083	2.0	1	1.0000E-04
18	5.717	3.1262	2.4711%	31262	21024	1.5	1	1.0000E-04
19	5.867	0.4268	0.3374%	4269	2980	1.4	1	1.0000E-04
20	6.233	0.3715	0.2937%	3715	1129	3.3	1	1.0000E-04
21	6.400	0.3338	0.2639%	3338	1216	2.7	1	1.0000E-04
22	6.667	0.7308	0.5777%	7309	4194	1.7	1	1.0000E-04
23	6.783	5.1693	4.0860%	51693	15851	3.3	1	1.0000E-04
24	7.200	4.4617	3.5267%	44617	28473	1.6	1	1.0000E-04
25	7.550	1.4558	1.1507%	14558	6684	2.2	1	1.0000E-04
26	7.717	0.8418	0.6654%	8419	4169	2.0	1	1.0000E-04
27	7.883	0.6604	0.5220%	6604	3494	1.9	1	1.0000E-04
28	7.967	1.2169	0.9619%	12169	4102	3.0	1	1.0000E-04
29	8.183	0.7643	0.6041%	7643	2898	2.6	1	1.0000E-04
30	8.383 KEROSENE	0.6596	0.5214%	13052	6324	2.1	1	5.0540E-05
31	8.917	5.1210	4.0479%	51210	5992	8.5	1	1.0000E-04
32	9.250 NAPHTHALENE	11.3121	8.9416%	281120	170939	1.6	1	4.0239E-05
33	9.433	0.7208	0.5698%	7208	4987	1.4	1	1.0000E-04
	9.817	1.6092	1.2720%	16093	1969	8.2	1	1.0000E-04
35	10.133	6.5012	5.1389%	65013	16114	4.0	1	1.0000E-04
36	10.383	1.4055	1.1110%	14055	3274	4.3	1	1.0000E-04
37	10.517 DIESEL	0.6869	0.5430%	13439	3227	4.2	1	5.1114E-05
38	10.717	1.2939	1.0228%	12939	6235	2.1	1	1.0000E-04
39	10.883	4.0016	3.1630%	40016	20078	2.0	1	1.0000E-04
40	11.317	3.3357	2.6367%	33357	7134	4.7	1	1.0000E-04
41	11.583	5.2599	4.1577%	52599	18833	2.8	1	1.0000E-04
42	11.933	0.7226	0.5712%	7227	1847	3.9	1	1.0000E-04
43	12.233	4.2076	3.3259%	42077	23558	1.8	1	1.0000E-04
44	12.533	1.4927	1.1799%	14927	6394	2.3	1	1.0000E-04
45	12.850	4.7020	3.7166%	47020	21704	2.2	1	1.0000E-04
46	13.167	0.6344	0.5014%	6344	1611	3.9	1	1.0000E-04
47	13.433	3.6891	2.9161%	36892	14479	2.5	1	1.0000E-04
48	13.800	0.3999	0.3161%	3999	967	4.1	1	1.0000E-04
49	14.000	2.1044	1.6634%	21044	12320	1.7	1	1.0000E-04
50	14.533	1.3287	1.0503%	13287	8384	1.6	1	1.0000E-04
51	15.050	0.7441	0.5882%	7441	4735	1.6	1	1.0000E-04
52	15.533	0.3969	0.3137%	3969	2379	1.7	1	1.0000E-04
53	16.000	0.2225	0.1759%	2225	1050	2.1	1	1.0000E-04

TOTAL AMOUNT = 126.5110

PEAKS NOT FOUND IN THIS RUN

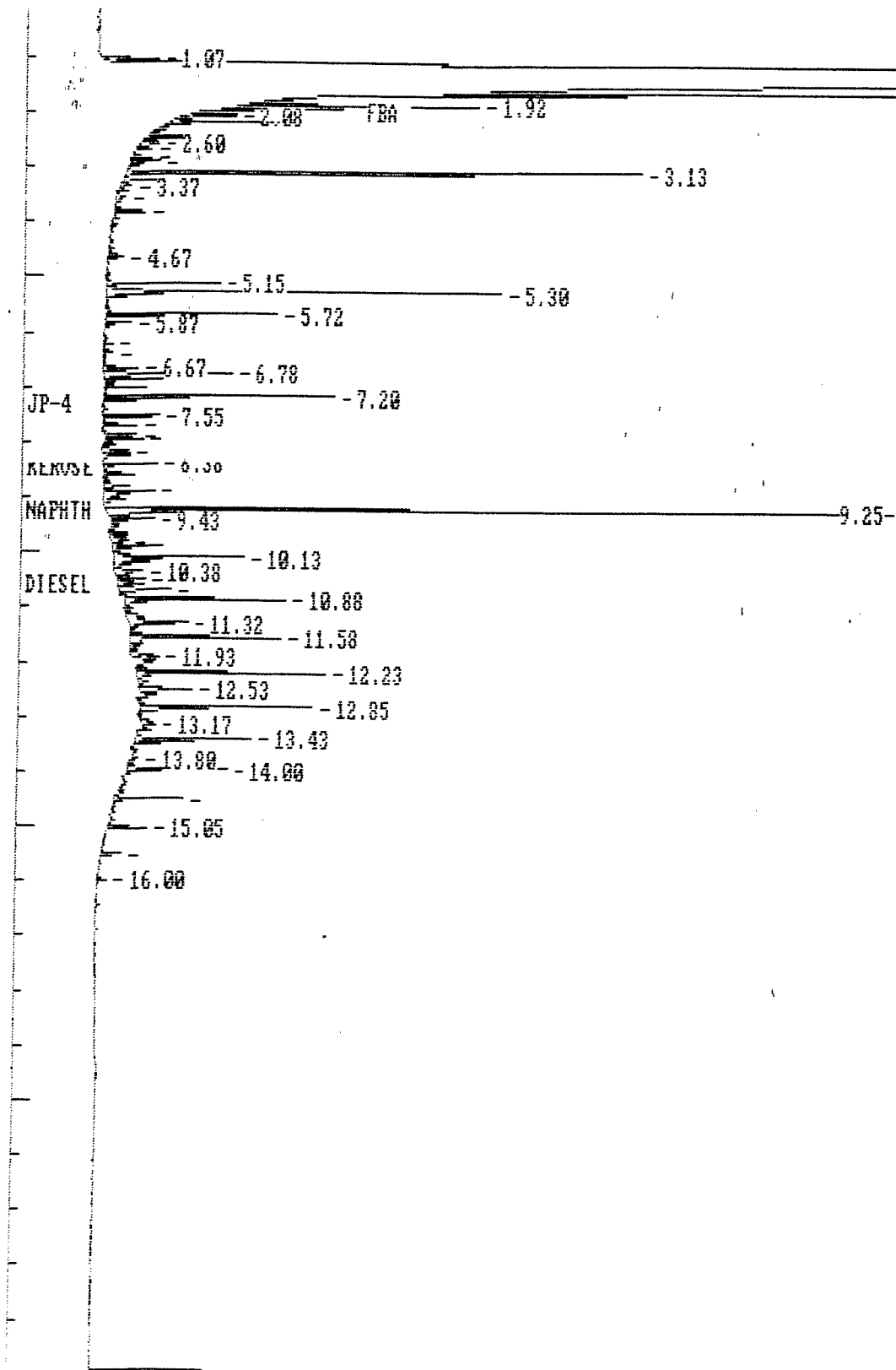
NAME ADJUSTED RET. TIME. REFERENCE PEAK
7.33 DIESEL

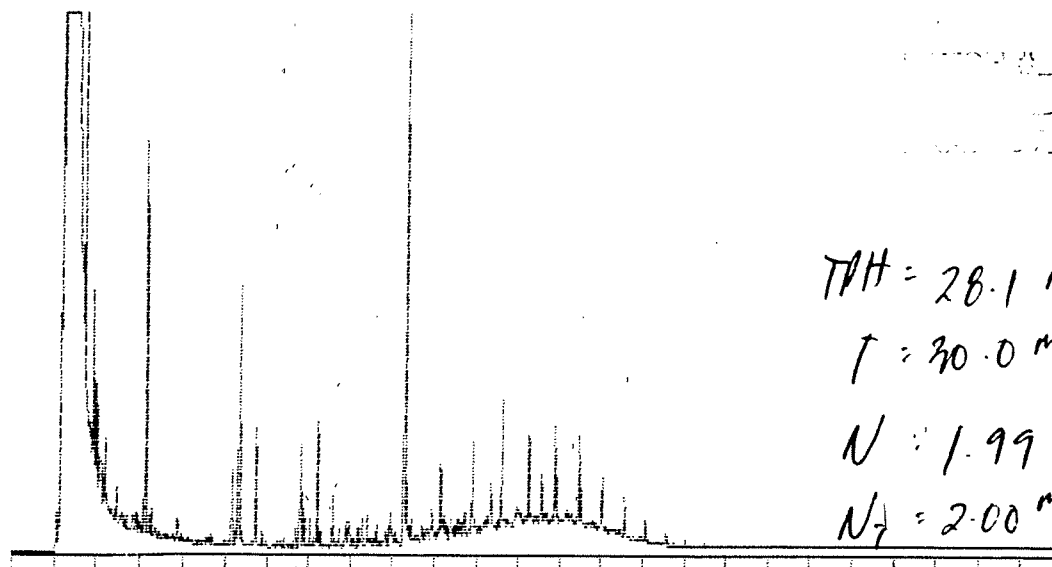
Data File = L:\LM01-122.PTS Printed on 12-08-1993 at 03:38:33

003802

4

Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts





179
12.09-93
JP

TPH = 28.1 mg/L
T = 30.0 mg/L } 94%
N = 1.99 mg/L } 100%
N₂ = 2.00 mg/L }

[Interface 6] 0-25 Min Scale: 100 Mv
LCS-2 B Processed: 12-08-1993 04:11:52, segment 28, cycle 123
RAW DATA SAVED IN FILE L:LM01-123.PTS

Fuel. 10T
12.763-1

***** AREA PERCENT REPORT *****

***** 12-08-1993 04:13:16 Version 5.1.5 *****
* Sample Name: LCS-2 B#129/931207/25ML>5ML Data File: L:LM01-123 *
* Date: 12-08-1993 04:11:52 Method: DIESEL *
* Interface: 6 Cycle#: 123 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: % Detector 1: *
* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
3	1.917	77198	5.4700	1	30807	27.077	2.5
4	2.083	25240	1.7884	1	6084	8.853	4.1
5	2.217	22684	1.6073	1	11990	7.956	1.9
6	2.500	12941	0.9170	1	6257	4.539	2.1
7	2.600	9324	0.6607	1	2252	3.270	4.1
8	2.717	2650	0.1878	1	1875	0.929	1.4
9	2.933	11659	0.8261	1	3324	4.089	3.5
10	3.133	119461	8.4646	1	71442	41.900	1.7
11	3.267	13278	0.9408	1	4313	4.657	3.1
12	3.567	4838	0.3428	1	979	1.697	4.9
13	3.853	11200	0.7936	1	3887	3.928	2.9
14	4.667	7893	0.5593	1	1791	2.768	4.4
15	5.150	21667	1.5352	1	13365	7.600	1.6
16	5.300	101342	7.1807	1	47442	35.545	2.1
17	5.717	36298	2.5719	1	21096	12.731	1.7
18	6.400	2222	0.1574	1	1449	0.779	1.5
19	6.667	7191	0.5095	1	3614	2.522	2.0
20	6.783	52613	3.7280	1	18706	18.454	2.8

6.551332 x 10⁻⁵
8.7077 x 10⁻⁵
= 9.0498 mg/L

REVIEWED & APPROVED
BY SN DATE 12/10/93

003804

21	7.200	54794	3.8825	1	22577	19.219	2.4
22	7.567	14697	1.0414	1	9071	5.155	1.6
23	7.900	6446	0.4567	1	3623	2.261	1.8
24	7.967	13607	0.9641	1	3683	4.773	3.7
25	8.183	7357	0.5213	1	3293	2.580	2.2
26	8.400	13687	0.9698	1	5458	4.801	2.5
27	8.633	11864	0.8406	1	3548	4.161	3.3
28	8.933	27244	1.9304	1	6045	9.556	4.5
29	9.267	285110	20.2018	1	164826	100.000	1.7
30	9.450	13980	0.9906	1	3775	4.903	3.7
31	9.700	18426	1.3056	1	2745	6.463	6.7
32	9.933	17151	1.2152	1	5561	6.015	3.1
33	10.217	10310	0.7305	1	2755	3.616	3.7
34	10.383	14484	1.0263	1	3442	5.080	4.2
35	10.733	27094	1.9198	1	4263	9.503	6.4
36	10.883	39527	2.8007	1	16620	13.864	2.4
37	11.333	18596	1.3176	1	7688	6.522	2.4
38	11.583	48920	3.4663	1	23055	17.158	2.1
39	11.950	27422	1.9430	1	3448	9.618	8.0
40	12.233	41634	2.9500	1	16240	14.603	2.6
41	12.550	25009	1.7720	1	8566	8.772	2.9
42	12.867	45948	3.2557	1	17458	16.116	2.6
43	13.450	36033	2.5532	1	16283	12.638	2.2
44	14.017	24979	1.7699	1	9861	8.761	2.5
45	14.550	14461	1.0247	1	7276	5.072	2.0
46	15.050	6903	0.4891	1	3408	2.421	2.0
47	15.550	3768	0.2670	1	2303	1.322	1.6
48	16.017	2158	0.1529	1	1102	0.757	2.0

Total Area: 1411307 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-08-1993 04:13:25 Version 5.1.5 *****

* Sample Name: LCS-2 B#129/931207/25ML>5ML Data File: L:LM01-123 *

* Date: 12-08-1993 04:11:52 Method: DIESEL 12-03-1993 15:15:14 # 583 *

* Interface: 6 Cycle#: 123 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *

* Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

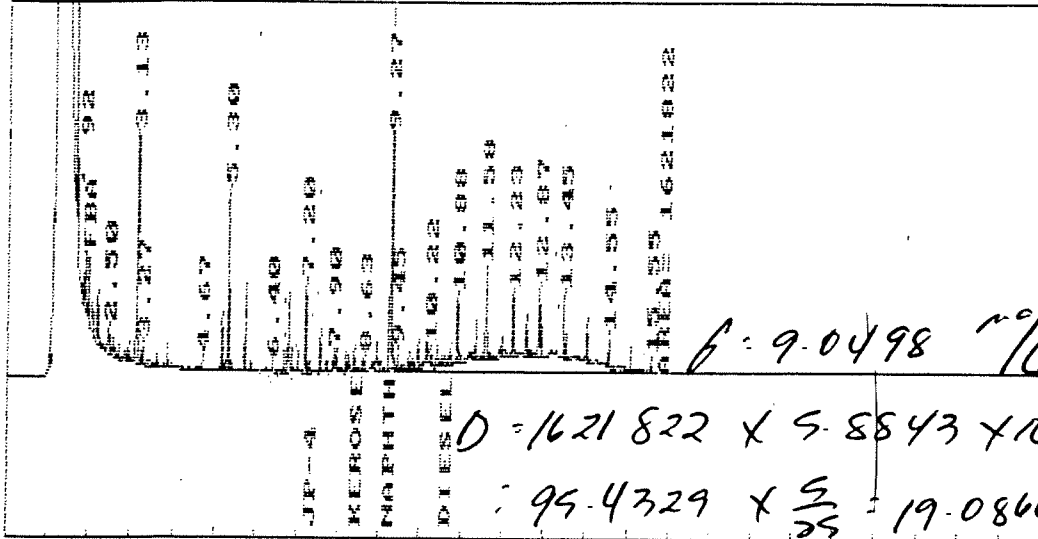
Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in ng/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
3	7.917		7.7198	6.3230%	77198	30607	2.5 1			1.0000E-04
4	7.983		2.5240	2.0673%	25240	6084	4.1 1			1.0000E-04
5	7.917		2.2684	1.8530%	22684	11990	1.9 1			1.0000E-04
6	7.900		1.2941	1.0599%	12941	6257	2.1 1			1.0000E-04
7	7.900		0.9324	0.7637%	9324	2252	4.1 1			1.0000E-04
8	7.917		0.2650	0.2171%	2650	1875	1.4 1			1.0000E-04

003805

2

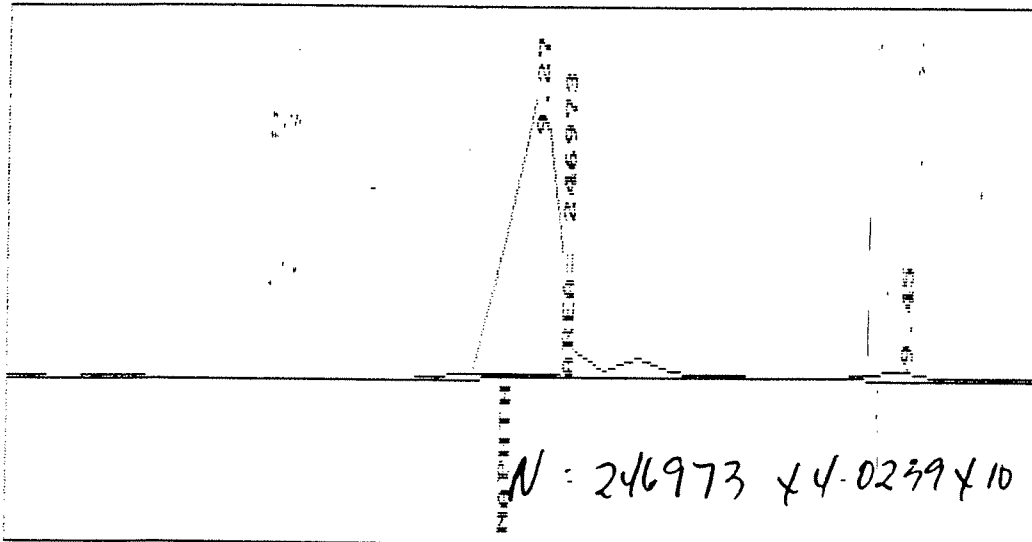
START TIME= 9.267 START HEIGHT= 6182
 STOP TIME= 16.017 STOP HEIGHT= 6182
 AREA = 1621822
 Plot of data file: L:LM01-123.PTS
 Date: 12-09-1993 Time: 10:23:36
 Sample Name: LCS-2 B#129/931207/
 Start Time= 0.02 Stop Time = 25.02 Min. Scale= 4898 Max. Scale= 104898



$$D = 1621822 \times 5.8843 \times 10^{-5}$$

$$= 95.4329 \times \frac{5}{25} = 19.0866 \text{ mL}$$

START TIME= 9.233 START HEIGHT= 9291
 STOP TIME= 9.283 STOP HEIGHT= 9291
 AREA = 246973
 Plot of data file: L:LM01-123.PTS
 Date: 12-09-1993 Time: 10:23:59
 Sample Name: LCS-2 B#129/931207/
 Start Time= 9.00 Stop Time = 9.52 Min. Scale= 4898 Max. Scale= 204898



$$N = 246973 \times 4.0239 \times 10^{-5} \times \frac{5}{25}$$

$$= 1.99 \text{ mL}$$

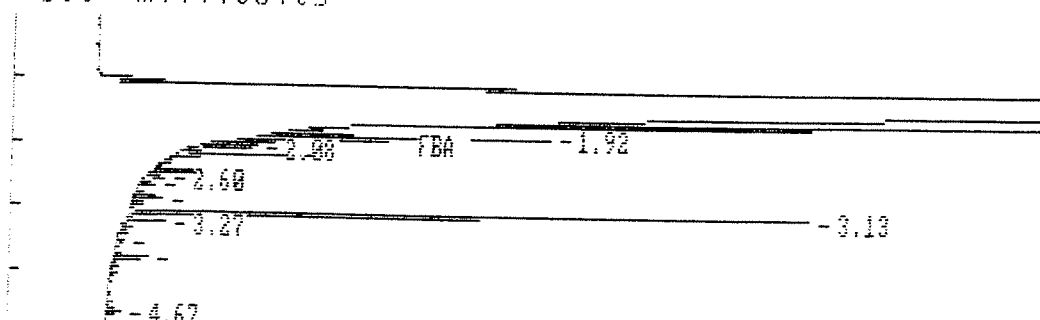
9	2.933	1.1659	0.9549%	11659	3324	3.5 1			1.0000E-04
10	3.133	11.9461	9.7846%	119461	71442	1.7 1			1.0000E-04
11	3.267	1.3278	1.0875%	13278	4313	3.1 1			1.0000E-04
12	3.567	0.4838	0.3963%	4838	979	4.9 1			1.0000E-04
13	3.833	1.1200	0.9173%	11200	3887	2.9 1			1.0000E-04
14	4.667	0.7893	0.6465%	7893	1791	4.4 1			1.0000E-04
15	5.150	2.1667	1.7747%	21667	13365	1.6 1			1.0000E-04
16	5.300	10.1342	8.3005%	101342	47442	2.1 1			1.0000E-04
17	5.717	3.6298	2.9730%	36298	21096	1.7 1			1.0000E-04
18	6.400	0.2222	0.1820%	2222	1449	1.5 1			1.0000E-04
19	6.667	0.7191	0.5890%	7191	3614	2.0 1			1.0000E-04
20	6.783	5.2613	4.3093%	52613	18706	2.8 1			1.0000E-04
21	7.200	5.4794	4.4880%	54794	22577	2.4 1			1.0000E-04
22	7.567	1.4697	1.2038%	14697	9071	1.6 1			1.0000E-04
23	7.900	0.6446	0.5280%	6446	3623	1.8 1			1.0000E-04
24	7.967	1.3607	1.1145%	13607	3683	3.7 1			1.0000E-04
25	8.183	0.7357	0.6026%	7357	3293	2.2 1			1.0000E-04
26	8.400 KEROSENE	0.6917	0.5666%	13687	5458	2.5 1	0	- .3558	5.0540E-05
27	8.633	1.1863	0.9717%	11864	3548	3.3 1			1.0000E-04
28	8.933	2.7244	2.2315%	27244	6045	4.5 1			1.0000E-04
29	9.267 NAPHTHALENE	11.4726	9.3968%	285110	164826	1.7 1	0	.1801	4.0239E-05
30	9.450	1.3980	1.1450%	13980	3775	3.7 1			1.0000E-04
31	9.700	1.8426	1.5092%	18426	2745	6.7 1			1.0000E-04
32	9.933	1.7150	1.4047%	17151	5561	3.1 1			1.0000E-04
33	10.217	1.0310	0.8445%	10310	2755	3.7 1			1.0000E-04
34	10.383	1.4484	1.1863%	14484	3442	4.2 1			1.0000E-04
35	10.733 DIESEL	1.3849	1.1343%	27094	4263	6.4 1	0	1.257	5.1114E-05
36	10.883	3.9527	3.2375%	39527	16620	2.4 1			1.0000E-04
37	11.333	1.8596	1.5231%	18596	7688	2.4 1			1.0000E-04
38	11.583	4.8920	4.0069%	48920	23055	2.1 1			1.0000E-04
39	11.950	2.7422	2.2460%	27422	3448	8.0 1			1.0000E-04
40	12.233	4.1634	3.4101%	41634	16240	2.6 1			1.0000E-04
41	12.550	2.5009	2.0484%	25009	8566	2.9 1			1.0000E-04
42	12.867	4.5948	3.7634%	45948	17458	2.6 1			1.0000E-04
43	13.450	3.6033	2.9513%	36033	16283	2.2 1			1.0000E-04
44	14.017	2.4979	2.0459%	24979	9861	2.5 1			1.0000E-04
45	14.550	1.4461	1.1844%	14461	7276	2.0 1			1.0000E-04
46	15.050	0.6903	0.5654%	6903	3408	2.0 1			1.0000E-04
47	15.550	0.3768	0.3086%	3768	2303	1.6 1			1.0000E-04
48	16.017	0.2158	0.1768%	2158	1102	2.0 1			1.0000E-04

TOTAL AMOUNT = 122.0909

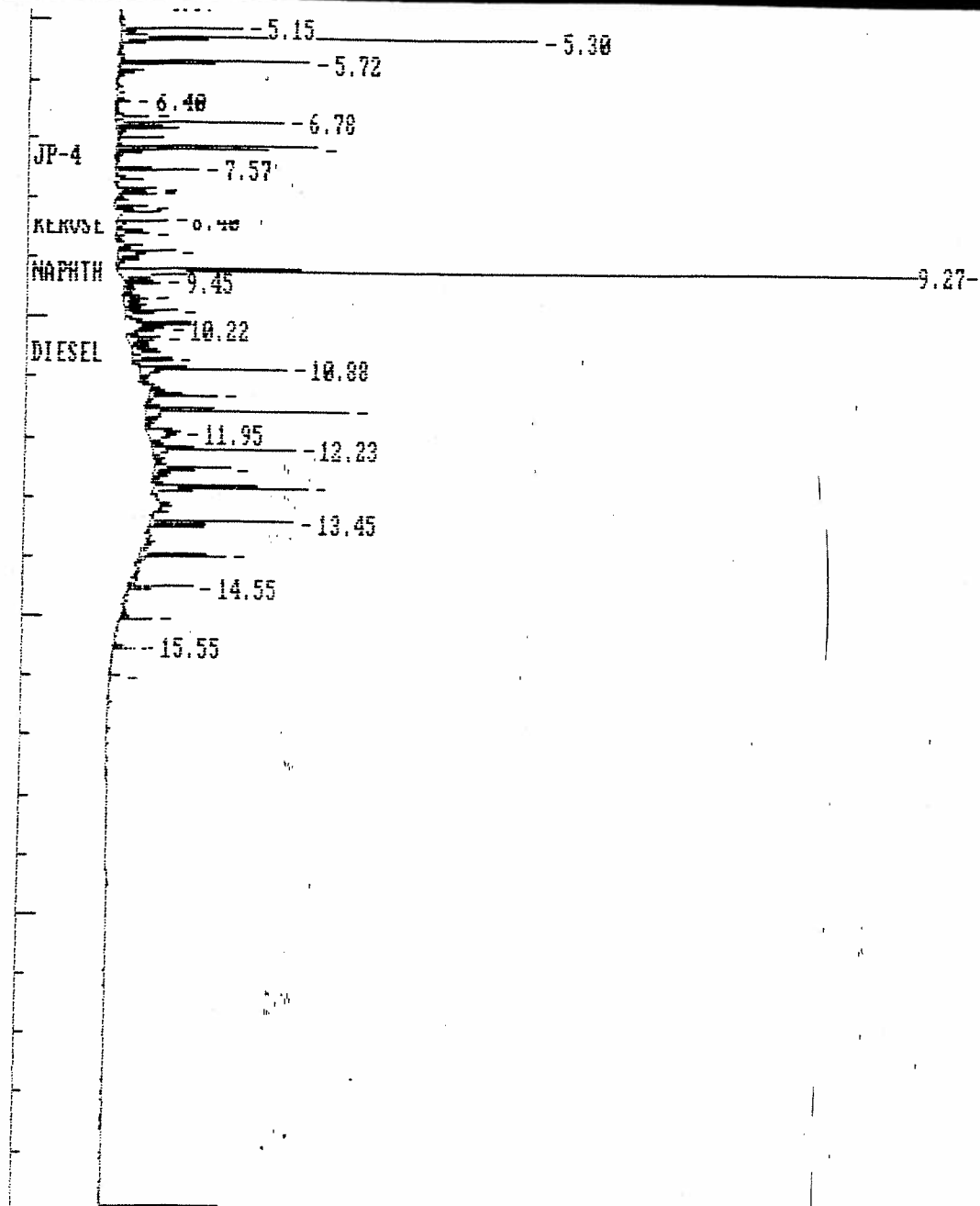
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL

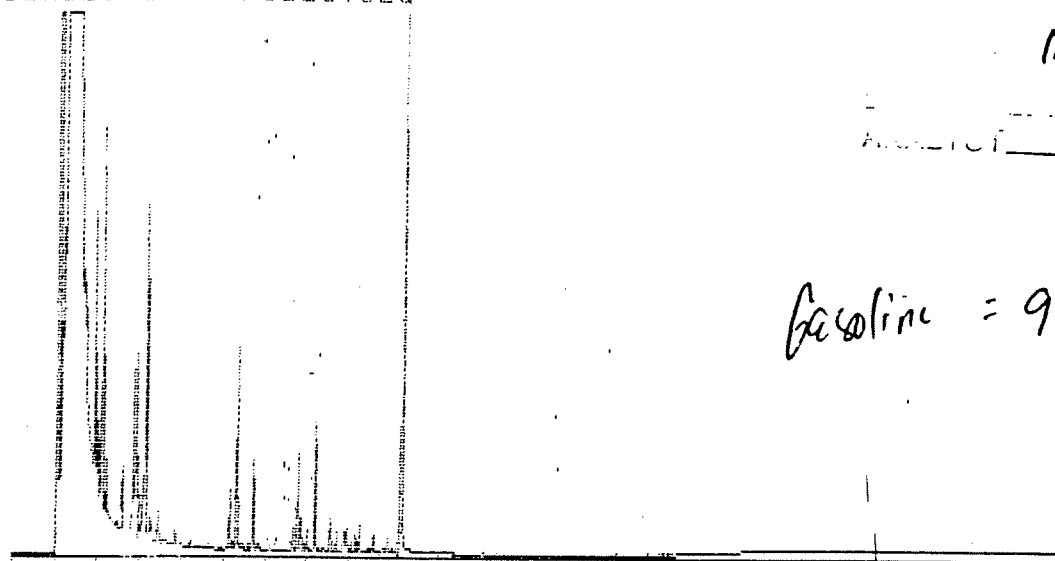
Data File = L:LM01-123.PTS Printed on 12-08-1993 at 04:13:53
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



003807



[illegible]



170 = 131
12.09.42
JP

Gasoline = 94%

[Interface 6] 0-25 Min Scale: 100 Mv

MP GASOLIN Processed: 12-09-1993 15:48:09, segment 2, cycle 161

RAW DATA SAVED IN FILE L:SM01-161.PTS

00 00 00 00 00 00 00 00 AREA PERCENT REPORT 00 00 00 00 00 00 00 00

***** 12-09-1993 15:49:39 Version 5.1.5 *****

* Sample Name: MP GASOLINE/NAPH 50/10PPM SV9311034

Data File: L:SM01-161

* Date: 12-09-1993 15:48:10 Method: DIESEL

* Interface: 6 Cycle#: 161 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 125

* Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0:

Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	1.050	2411427	69.856100	988946	100.000	2.4	
3	1.917	106728	3.0918	1	47283	4.426	2.3
4	2.100	112024	3.2452	1	68715	4.646	1.6
5	2.217	8156	0.2363	1	8993	0.338	0.9
6	2.600	32336	0.9367	1	11607	1.341	2.8
7	2.917	107436	3.1123	1	33162	4.455	3.2
8	3.017	12377	0.3585	1	7367	0.513	1.7
9	3.133	118897	3.4443	1	61392	4.931	1.9
10	3.433	8797	0.2549	1	5210	0.365	1.7
11	3.837	4908	0.1422	1	2569	0.204	1.9
12	5.150	17964	0.5204	1	10980	0.745	1.6
13	5.300	66004	1.9121	1	36450	2.737	1.8
14	5.717	25676	0.7438	1	16478	1.065	1.6
15	6.233	2341	0.0678	1	1107	0.087	2.1
16	6.667	6643	0.1924	1	4290	0.275	1.5
17	6.783	57858	1.6761	1	17768	2.329	3.5

6.576300 x

8.7077 x 10⁻⁵

= 47/50 = 94%

18	7.200	38731	1.1220	1	23059	1.606	1.0
19	7.567	12231	0.3543	1	6191	0.507	2.0
20	7.717	5991	0.1736	1	3496	0.248	1.7
21	7.967	26534	0.7687	1	4234	1.100	6.3
22	8.267	16992	0.4922	1	4599	0.705	3.7
23	8.633	9872	0.2860	1	3161	0.409	3.1
24	8.933	4712	0.1365	1	2308	0.195	2.0
25	9.267	237358	6.8760	1	125793	9.843	1.9

Total Area: 3451991 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 12-09-1993 15:49:43 Version 5.1.5 *****

* Sample Name: MP GASOLINE/NAPH 50/10PPM SU9311034

Data File: L:SM01-161

* Date: 12-09-1993 15:48:10 Method: DIESEL 12-03-1993 15:15:14 # 583

* Interface: 6 Cycle#: 161 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

* Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0:

Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

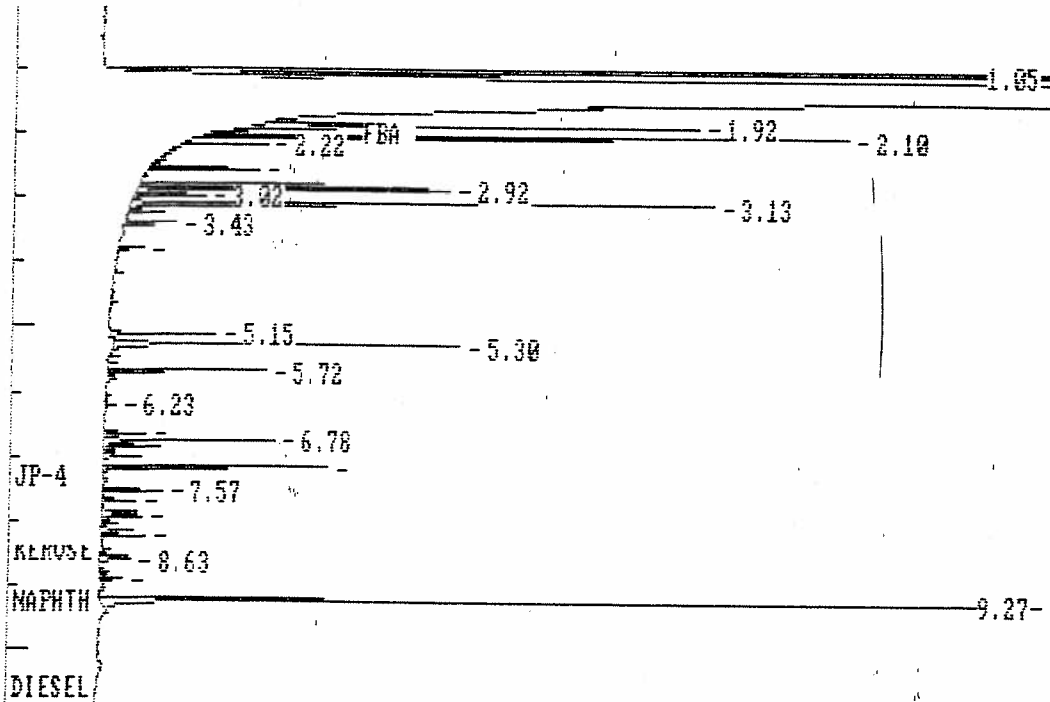
RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050	241.1427	72.8496%	2411427	988946	2.4 0V			1.0000E-04
3	1.917	10.6727	3.2243%	106728	47283	2.3 1			1.0000E-04
4	2.100	11.2023	3.3842%	112024	68715	1.6 1			1.0000E-04
5	2.217	0.8156	0.2464%	8156	8993	0.9 1			1.0000E-04
6	2.600	3.2336	0.9769%	32336	11607	2.8 1			1.0000E-04
7	2.917	10.7436	3.2457%	107436	33162	3.2 1			1.0000E-04
8	3.017	1.2377	0.3739%	12377	7367	1.7 1			1.0000E-04
9	3.133	11.8896	3.5919%	118897	61392	1.9 1			1.0000E-04
10	3.433	0.8797	0.2658%	8797	5210	1.7 1			1.0000E-04
11	3.833	0.4908	0.1483%	4908	2569	1.9 1			1.0000E-04
12	5.150	1.7964	0.5427%	17964	10980	1.6 1			1.0000E-04
13	5.300	6.6004	1.9940%	66004	36450	1.8 1			1.0000E-04
14	5.717	2.5676	0.7757%	25676	16478	1.6 1			1.0000E-04
15	6.233	0.2341	0.0707%	2341	1107	2.1 1			1.0000E-04
16	6.667	0.6643	0.2007%	6643	4290	1.5 1			1.0000E-04
17	6.783	5.7858	1.7479%	57858	17768	3.3 1			1.0000E-04
18	7.200	3.8731	1.1701%	38731	23659	1.6 1			1.0000E-04
19	7.567	1.2231	0.3595%	12231	6191	2.0 1			1.0000E-04
20	7.717	5991	0.1810%	5991	3496	1.7 1			1.0000E-04
21	7.967	26534	0.8016%	26534	4234	6.3 1			1.0000E-04
22	8.267	16992	0.5173%	16992	4599	3.7 1			1.0000E-04
23	8.633	9872	0.2922%	9872	3161	3.1 1			1.0000E-04
24	8.933	4712	0.1437%	4712	2308	2.0 1			1.0000E-04
25	9.267	237358	0.8854%	237358	125793	1.9 1			1.0000E-04
	MP GASOLINE/NAPHTHALENE	5.5811	0.8854%	237358	125793	1.9 1			1.0000E-04

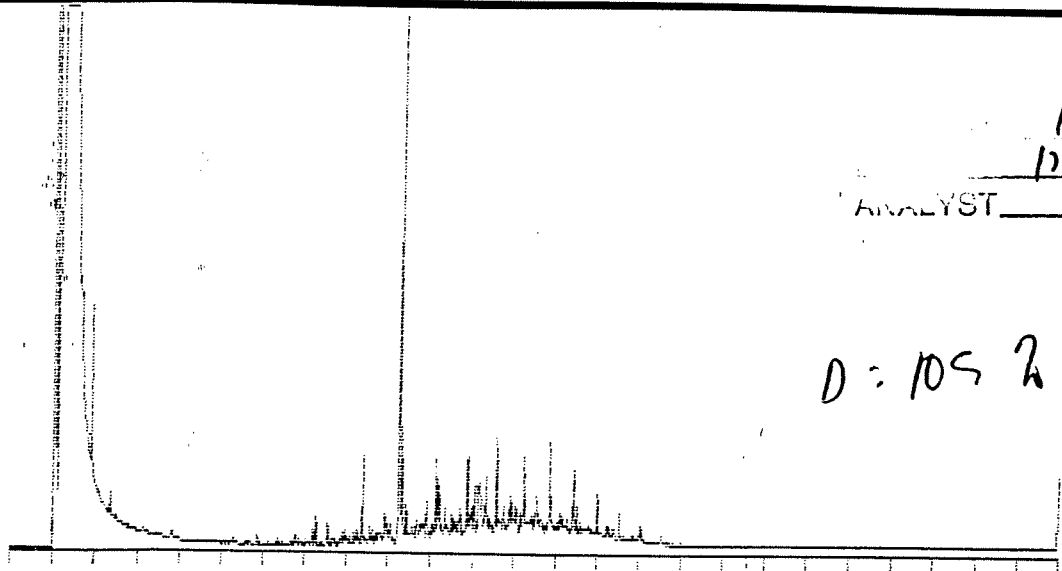
003811

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KF SENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:SM01-161.PTS Printed on 12-09-1993 at 15:50:02
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts





B1
12-10-93
ANALYST JP

D: 105 2

[Interface 6] 0-25 Min Scale: 100 Mu
MP DIESEL/ Processed: 12-09-1993 16:23:10, segment 3, cycle 162
RAW DATA SAVED IN FILE L:SM01-162.PTS

***** AREA PERCENT REPORT *****

***** 12-09-1993 16:24:40 Version 5.1.5 *****
* Sample Name: MP DIESEL/NAPH 100/10PPM SU9311035
Data File: L:SM01-162
* Date: 12-09-1993 16:23:10 Method: DIESEL
* Interface: 6 Cycle#: 162 Operator JP Channel#: 0 Vial#: N.A.
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25
* Solvent Description:
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25
* Detector 0: Detector 1:
* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	Peak Ht.	Normalized Area/Height
1	1.050	2648889	13.876300	990831	17.011
2	1.217	15571999	81.574200	984131	100.000
3	2.367	4907	0.0257	3606	0.032
5	5.867	3246	0.0170	1375	0.021
6	6.783	9345	0.0490	1708	0.060
7	7.283	12972	0.0680	5300	0.083
8	7.550	7223	0.0378	4051	0.046
9	7.950	9480	0.0497	2217	0.061
10	8.183	3634	0.0190	1541	0.023
11	8.383	36837	0.1930	15646	0.237
12	8.917	29918	0.1567	4994	0.182
13	9.250	278812	1.4606	169771	1.790
14	9.433	16195	0.0848	5680	0.104
15	9.683	21145	0.1108	3088	0.136
16	9.917	17587	0.0921	5539	0.113
17	10.100	24944	0.1307	7708	0.160
18	10.717	30385	0.1592	4995	0.195
19	10.883	28417	0.1489	12992	0.182

20	11.050	28855	0.1512	1	8390	0.185	3.4
21	11.167	23354	0.1223	1	9313	0.150	2.5
22	11.317	50095	0.2624	1	17245	0.322	2.9
23	11.567	40562	0.2125	1	6410	0.260	6.3
24	11.933	33675	0.1764	1	12702	0.216	2.7
25	12.233	55419	0.2903	1	15918	0.356	3.5
	12.850	8089	0.0424	1	2777	0.052	2.9
28	13.100	26848	0.1406	1	11268	0.172	2.4
29	13.433	2992	0.0157	1	1432	0.019	2.1
30	13.583	12576	0.0659	1	7754	0.081	1.6
31	14.000	8168	0.0428	1	1771	0.052	4.6
32	14.267	6008	0.0315	1	1762	0.039	3.4
33	14.400	10595	0.0555	1	4902	0.068	2.2
34	14.533	3879	0.0203	1	2080	0.025	1.9
35	15.050	2946	0.0154	1	1501	0.019	2.0

Total Area: 19089358 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****
 ***** 12-09-1993 16:24:47 Version 5.1.5 *****
 * Sample Name: MF DIESEL/NAFH 100/10PPM SU9311035

Data File: L:SM01-162

* Date: 12-09-1993 16:23:10 Method: DIESEL 12-03-1993 15:15:14 # 583
 * Interface: 6 Cycle#: 162 Operator JF Channel#: 0 Vial#: N.A.
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000
 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25
 * Solvent Description:
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25

Detector 0:

Detector 1:

Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		264.8889	14.0266%	2648889	990831	2.7 00			1.0000E-04
2	1.217		1557.1998	82.4581%	15571999	984131	15.8 00			1.0000E-04
3	2.367		0.4907	0.0260%	4907	3606	1.4 1			1.0000E-04
5	5.867		0.3246	0.0172%	3246	1375	2.4 1			1.0000E-04
6	6.783		0.9344	0.0495%	9345	1708	5.5 1			1.0000E-04
7	7.283	JP-4	0.8046	0.0426%	12972	5300	2.4 1	0	-6366	6.2023E-05
8	7.550		0.7223	0.0382%	7223	4051	1.8 1			1.0000E-04
9	7.950		0.9480	0.0502%	9480	2217	4.3 1			1.0000E-04
10	8.163		0.3634	0.0192%	3634	1541	2.4 1			1.0000E-04
11	8.383	KEROSENE	1.8617	0.0986%	36837	15646	2.4 1	0	-5535	5.0540E-05
12	8.917		2.9918	0.1564%	29918	4994	6.0 1			1.0000E-04
13	9.250	NAPTHALENE	11.2162	0.5941%	278812	169771	1.6 1	0	0	4.0239E-05
14	9.433		1.6194	0.0858%	16195	5680	2.9 1			1.0000E-04
15	9.863		2.1145	0.1120%	21145	3088	6.8 1			1.0000E-04
16	9.917		1.7586	0.0931%	17587	6539	2.7 1			1.0000E-04
17	10.200		2.4944	0.1321%	24944	7708	3.2 1			1.0000E-04
18	10.717	DIESEL	1.5551	0.0822%	30385	4995	6.1 1	0	1.100	5.1114E-05

003814

SEQUENCE RECORDED IN G:FUELS.SEQ

START TIME= 9.350 START HEIGHT= 5310

STOP TIME= 15.533 STOP HEIGHT= 5310

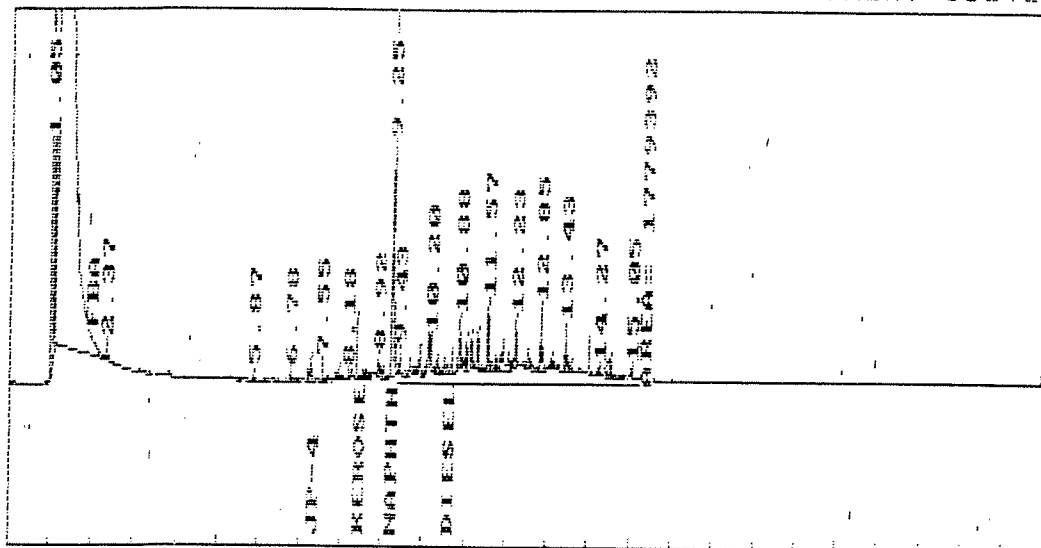
AREA = 1779392

Plot of data file: L:SM01-162.PTS

Date: 12-10-1993 Time: 09:20:19

Sample Name: MP DIESEL/NAFH 100/10

Start Time= 0.02 Stop Time = 25.02 Min. Scale= 4879 Max. Scale= 104879



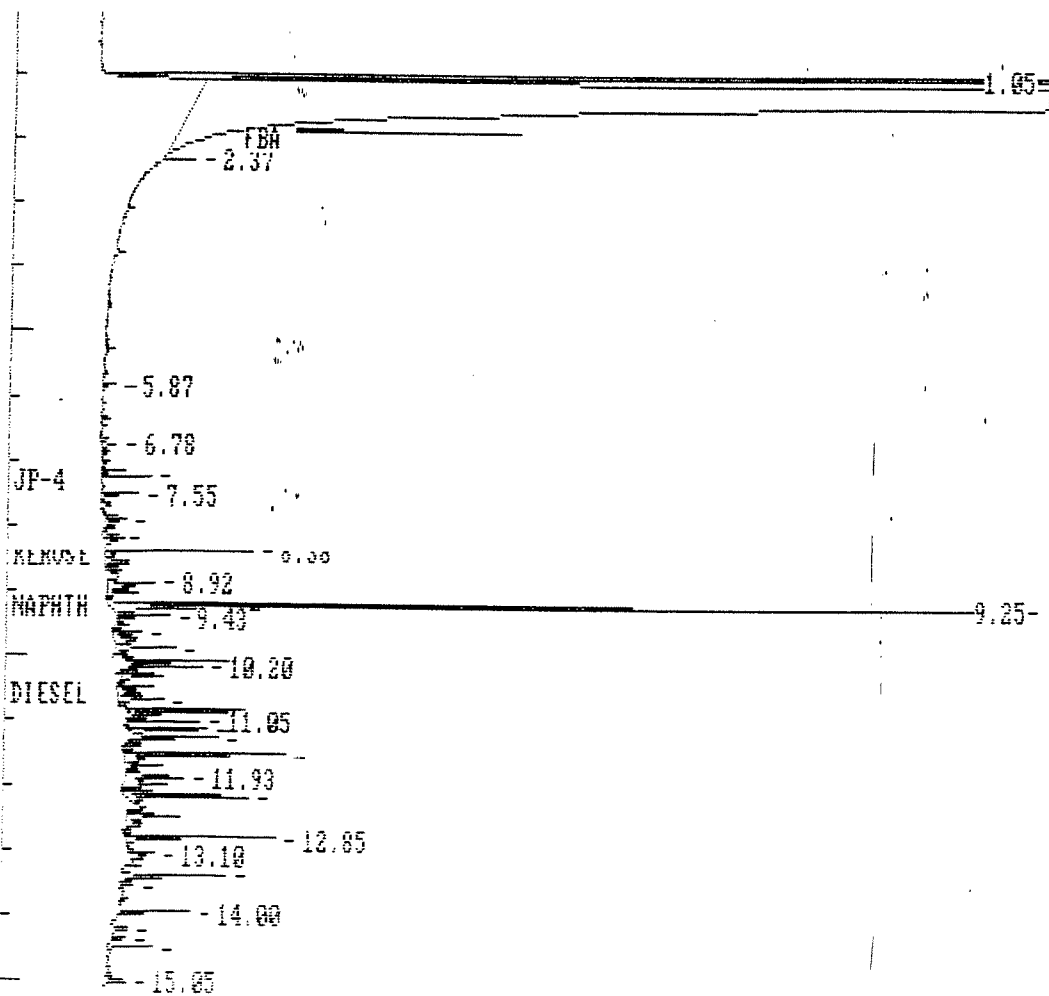
$$D = 1779392 \div 5.8843 \times 10^{-5}$$

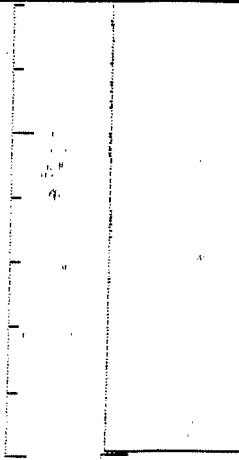
$$= 105/100 = 105\%$$

17	10.883	2.8417	0.1505%	28417	12772	2.2 1	1.0000E-04
20	11.050	1.9365	0.1025%	19365	7811	2.5 1	1.0000E-04
21	11.167	2.8855	0.1528%	28855	8390	3.4 1	1.0000E-04
22	11.317	2.3354	0.1237%	23354	9313	2.5 1	1.0000E-04
23	11.567	5.0095	0.2653%	50095	17245	2.9 1	1.0000E-04
24	11.933	4.0562	0.2148%	40562	6410	6.3 1	1.0000E-04
25	12.233	3.3675	0.1783%	33675	12702	2.7 1	1.0000E-04
26	12.850	5.5419	0.2935%	55419	15918	3.5 1	1.0000E-04
27	13.100	0.8089	0.0428%	8089	2777	2.9 1	1.0000E-04
28	13.433	2.6848	0.1422%	26848	11268	2.4 1	1.0000E-04
29	13.583	0.2991	0.0158%	2992	1432	2.1 1	1.0000E-04
30	14.000	1.2576	0.0666%	12576	7754	1.6 1	1.0000E-04
31	14.267	0.8167	0.0432%	8168	1771	4.6 1	1.0000E-04
32	14.400	0.6008	0.0318%	6008	1762	3.4 1	1.0000E-04
33	14.533	1.0595	0.0561%	10595	4902	2.2 1	1.0000E-04
34	15.050	0.3879	0.0205%	3879	2080	1.9 1	1.0000E-04
35	15.533	0.2946	0.0156%	2946	1501	2.0 1	1.0000E-04

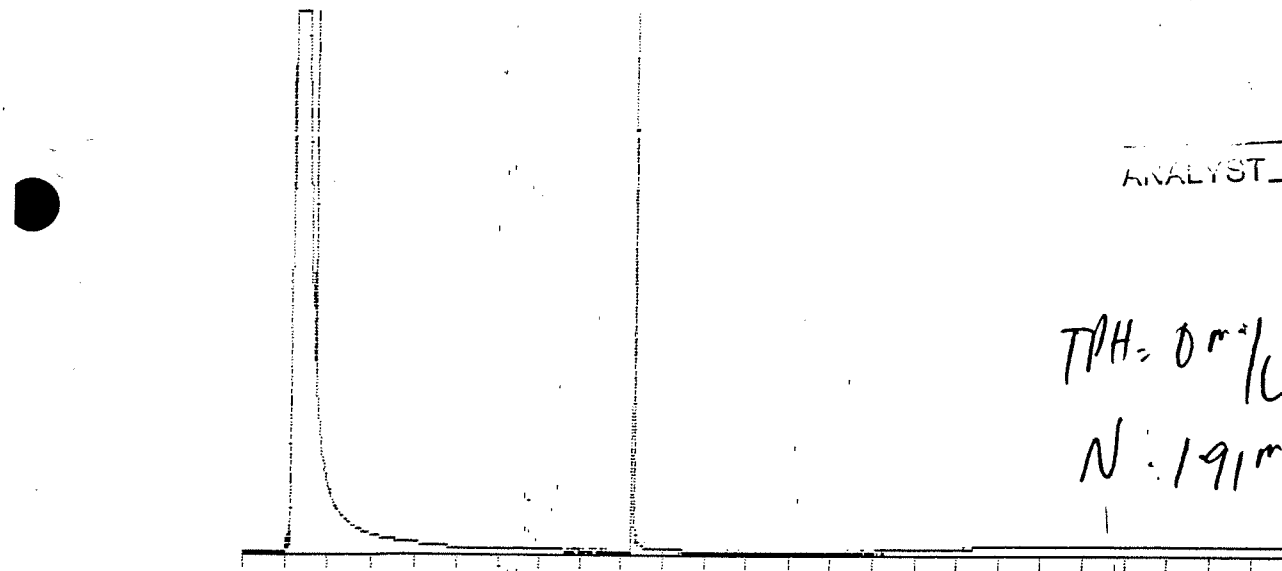
TOTAL AMOUNT = 1888.4735

Data File = L:SM01-162.PTS Printed on 12-09-1993 at 16:25:08
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts





003817



ANALYST 12.10.93

TPH = 0 m/L
N = 191 m/L

[Interface 6] 0-25 Min Scale: 100 Mu
M BLANK Processed: 12-09-1993 16:58:16, segment 4, cycle 163
RAW DATA SAVED IN FILE L:GM01-163.PTS

Fuel-DOT
12-747-1

***** AREA PERCENT REPORT *****

***** 12-09-1993 16:59:46 Version 5.1.5 *****
* Sample Name: M BLANK B#131/931209/25ML>5ML Data File: L:GM01-163 *
* Date: 12-09-1993 16:58:16 Method: DIESEL *
* Interface: 6 Cycle#: 163 Operator JF Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: * Detector 1: *
* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B	Peak Ht.	Normalized %	Area/ Height
1	1.050	5518	2.2746	1	2483	2.328	2.2
2	9.250	237078	97.7254	1	111551	100.000	2.1

Total Area: 242596 Area Reject: 2000 One sample per 1.000 sec.

$N = 237078 \times 4.0239 \times 10^{-5} \times \frac{5}{25} = 1.91 \text{ m/L}$

***** EXTERNAL STANDARD TABLE *****
***** 12-09-1993 16:59:46 Version 5.1.5 *****
* Sample Name: M BLANK B#131/931209/25ML>5ML Data File: L:GM01-163 *
* Date: 12-09-1993 16:58:16 Method: DIESEL 12-03-1993 15:15:14 # 583 *
* Interface: 6 Cycle#: 163 Operator JF Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: * Detector 1: *

REVIEWED & APPROVED
BY SPV DATE 12/14/93 003818

* Misc. Information: 556-25 INITIAL CALIBRATION

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

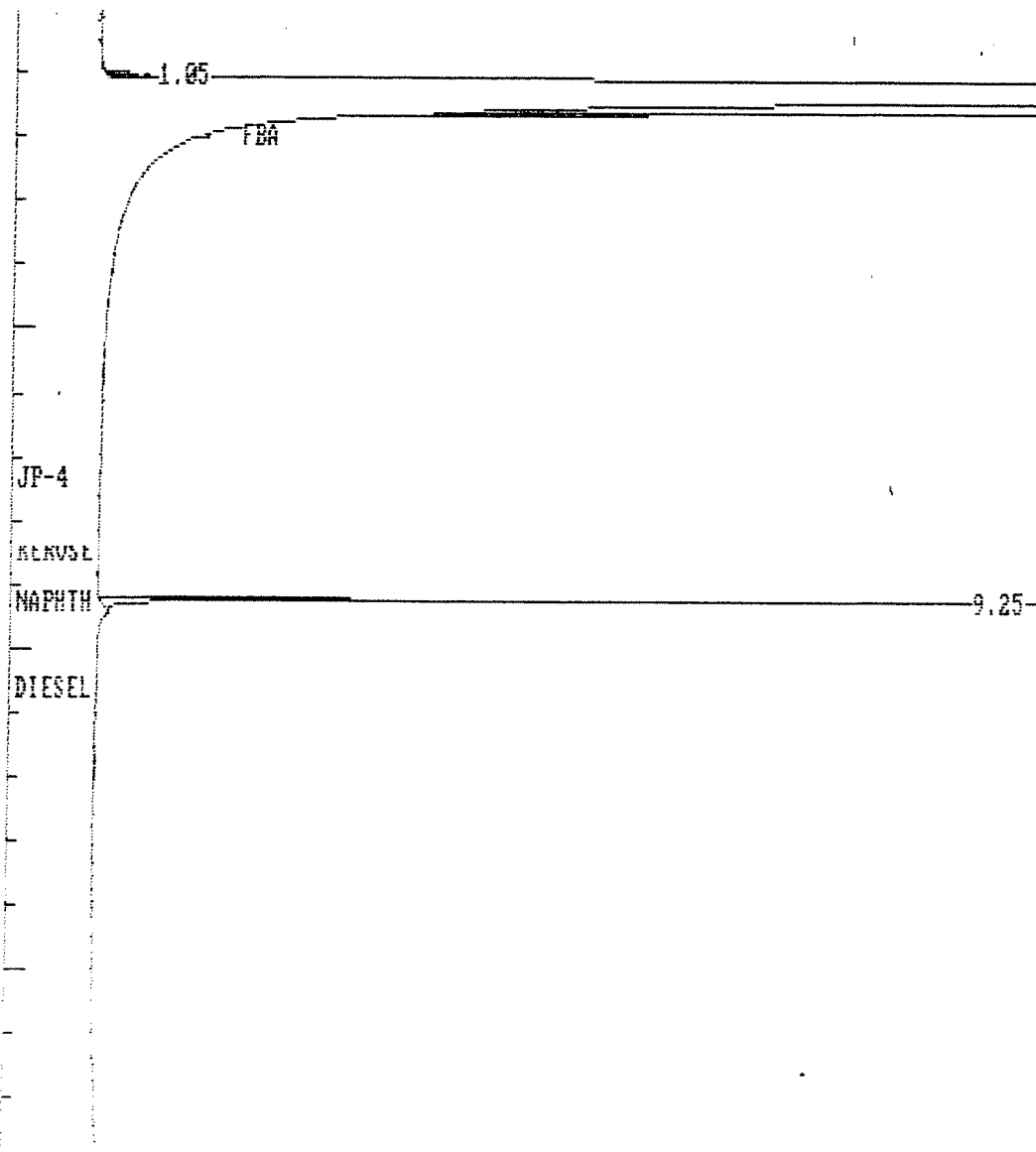
RET NUM	TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		0.5518	5.4679%	5518	2493	2.21			1.0000E-04
2	9.250	NAPHTHALENE	9.5399	94.5321%	237078	111551	2.11	0	0	4.0239E-05

TOTAL AMOUNT = 10.0917

PEAKS NOT FOUND IN THIS RUN

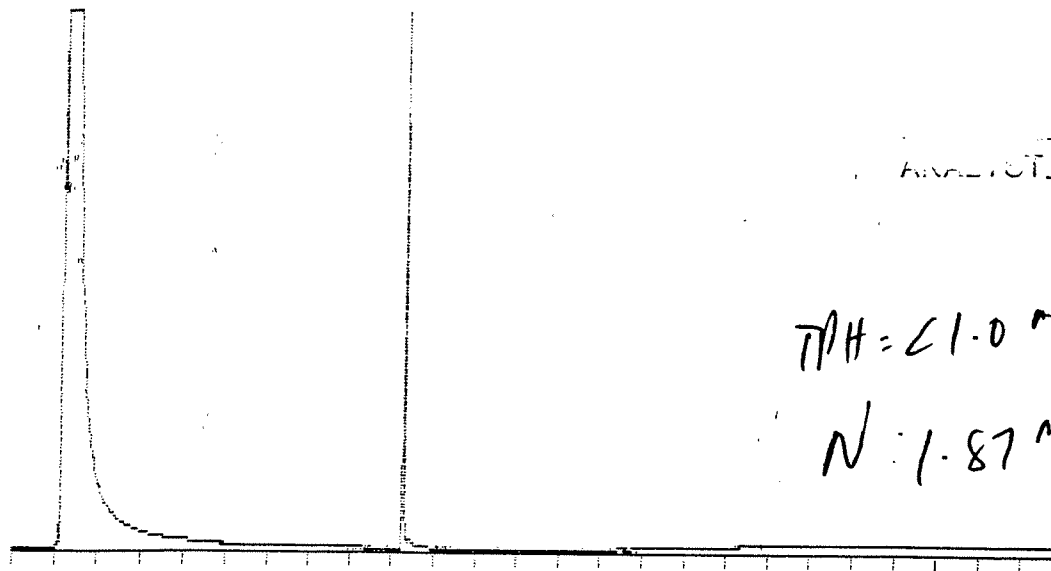
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:GM01-163.PTS Printed on 12-09-1993 at 16:59:53
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



003819

003820



131
12-10-93

ANALYST

TH = 41.0 %

N = 1.87 %

[Interface 6] 0-25 Min Scale: 100 Mu
G9312066-1 Processed: 12-09-1993 18:08:18, segment 6, cycle 165
RAW DATA SAVED IN FILE L:AM01-165.PTS

AREA PERCENT REPORT

***** 12-09-1993 18:09:48 Version 5.1.5 *****

* Sample Name: G9312066-1 B#131/931209/25ML>5ML

Data File: L:AM01-165

* Date: 12-09-1993 18:08:19 Method: DIESEL

* Interface: 6 Cycle#: 165 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0:

Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
1	1.100	4704	1.9829	1	3487	2.023	1.3
2	9.267	232529	98.0171	1	144979	100.000	1.6

Total Area: 237233 Area Reject: 2000 One sample per 1.000 sec.

$N = 232529 \times 4.0239 \times 10^{-5} + \frac{5}{25} = 1.87 \%$

EXTERNAL STANDARD TABLE

***** 12-09-1993 18:09:49 Version 5.1.5 *****

* Sample Name: G9312066-1 B#131/931209/25ML>5ML

Data File: L:AM01-165

* Date: 12-09-1993 18:08:19 Method: DIESEL 12-03-1993 15:15:14 # 583

* Interface: 6 Cycle#: 165 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

Solvent Description:

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BY SH

DATE

4/93

003821

* CONDITIONS: 45 207.111 FINAL 500 HOLD 8.25

* Detector 0:

Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Ending retention time: 25.00

Area reject: 2000

One sample per 1.000 sec.

Amount injected: 1.00

Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.100		0.4704	4.7867%	4704	3487	1.3 1			1.0000E-04
2	9.267	NAPHTHALENE	9.3568	95.2133%	232529	144979	1.6 1	0	.1801	4.0239E-05

TOTAL AMOUNT = 9.8272

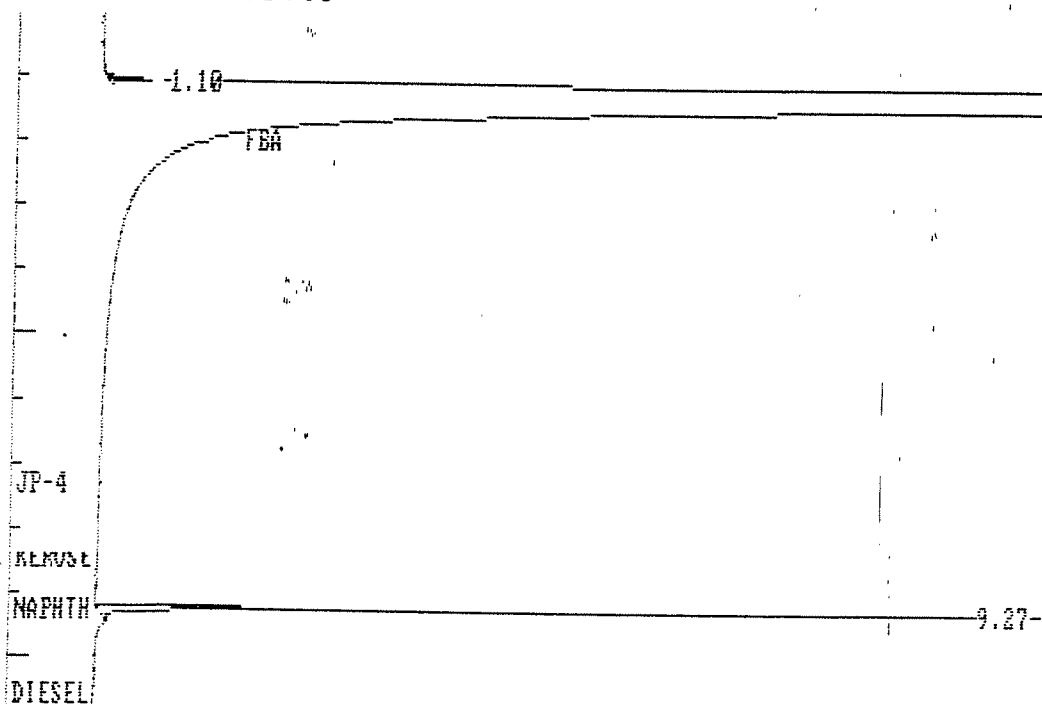
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

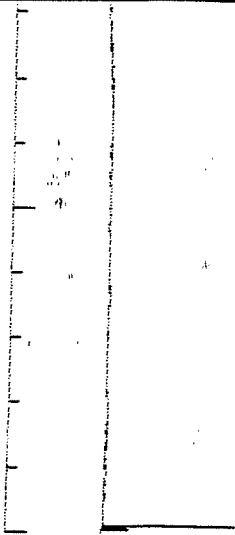
Data File = L:AM01-165.PTS Printed on 12-09-1993 at 18:09:56

Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

Full Range: 100 millivolts



003822



003823

19	7.200	34095	3.2952	1	18154	16.116	1.7
20	7.550	11007	1.0638	1	6323	5.203	1.7
21	7.717	6260	0.6050	1	2788	2.959	2.2
22	7.883	4549	0.4397	1	2753	2.150	1.7
23	7.967	7534	0.7282	1	2536	3.562	3.0
24	8.383	25357	2.4507	1	4575	11.987	5.5
25	8.617	8703	0.8411	1	3019	4.114	2.9
26	8.917	24667	2.3840	1	4676	11.661	5.3
27	9.250	211538	20.4449	1	135226	100.000	1.6
28	9.433	5502	0.5318	1	3481	2.601	1.6
29	9.683	11732	1.1339	1	1775	5.546	6.6
30	9.917	12032	1.1628	1	4434	5.688	2.7
31	10.383	10437	1.0087	1	2140	4.934	4.9
32	10.517	9072	0.8768	1	2239	4.289	4.1
33	10.883	39800	3.8466	1	12136	18.815	3.3
34	11.317	21603	2.0879	1	5680	10.212	3.8
35	11.567	34421	3.3268	1	12848	16.272	2.7
36	11.933	19760	1.9098	1	2471	9.341	8.0
37	12.233	26707	2.5812	1	14218	12.625	1.9
38	12.533	9958	0.9624	1	5278	4.707	1.9
39	12.633	3606	0.3485	1	1288	1.704	2.8
40	12.850	32513	3.1423	1	14079	15.370	2.3
41	13.167	9997	0.9662	1	1414	4.726	7.1
42	13.433	24892	2.4057	1	10222	11.767	2.4
43	14.000	16599	1.6043	1	7913	7.847	2.1
44	14.533	11650	1.1260	1	5098	5.507	2.3
45	15.050	4514	0.4363	1	2663	2.134	1.7

Total Area: 1034672 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-09-1993 18:45:05 Version 5.1.5 *****

* Sample Name: LCS-1 B#131/931209/25ML>5ML Data File: L:LM01-166 *

* Date: 12-09-1993 18:43:27 Method: DIESEL 12-03-1993 15:15:14 # 583 *

* Interface: 6' Cycle#: 166 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *

* Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

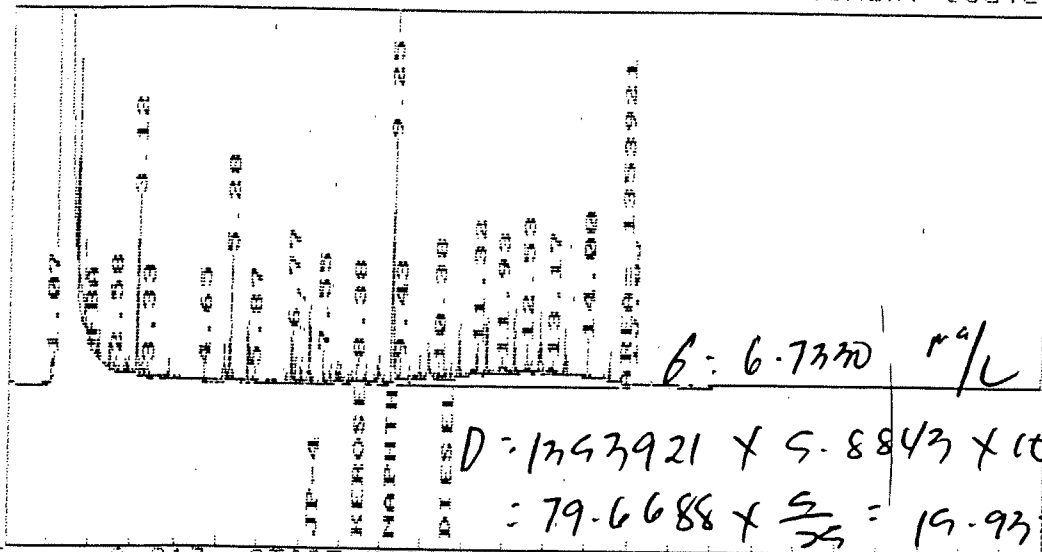
Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

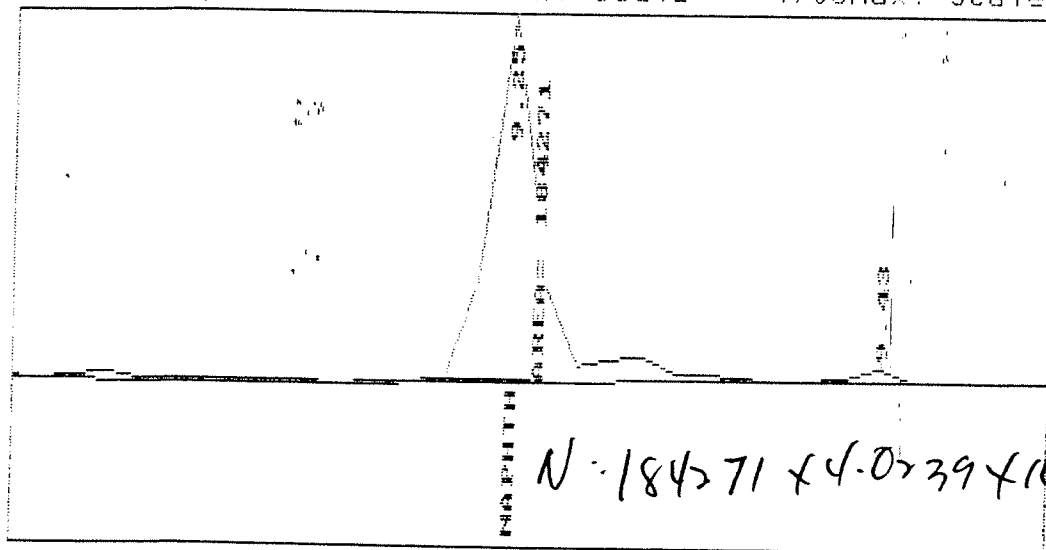
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.067		0.9472	0.9505%	9472	4844	1.7 1			1.0000E-04
2	1.950		4.4705	0.0158%	44705	0	0.0 1			1.0000E-04
3	1.063		1.8900	0.1205%	18900	8794	2.8 1			1.0000E-04
4	2.00		1.6912	1.8982%	16912	5997	2.8 1			1.0000E-04
5	1.967		1.0325	1.1584%	10325	8163	1.7 1			1.0000E-04
6	2.583		0.8833	0.9910%	8833	1839	4.7 1			1.0000E-04
7	2.817		0.3112	0.3492%	3112	1331	2.3 1			1.0000E-04

003825

START TIME= 9.250 START HEIGHT= 5447
 STOP TIME= 15.050 STOP HEIGHT= 5447
 AREA = 1353921
 Plot of data file: L:LM01-166.PTS
 Date: 12-10-1993 Time: 09:24:07
 Sample Name: LCS-1 B#131/931209/
 Start Time= 0.02 Stop Time= 25.02 Min. Scale= 4908 Max. Scale= 104908



START TIME= 9.217 START HEIGHT= 7715
 STOP TIME= 9.267 STOP HEIGHT= 7715
 AREA = 184271
 Plot of data file: L:LM01-166.PTS
 Date: 12-10-1993 Time: 09:24:36
 Sample Name: LCS-1 B#131/931209/
 Start Time= 9.00 Stop Time= 9.52 Min. Scale= 4908 Max. Scale= 104908



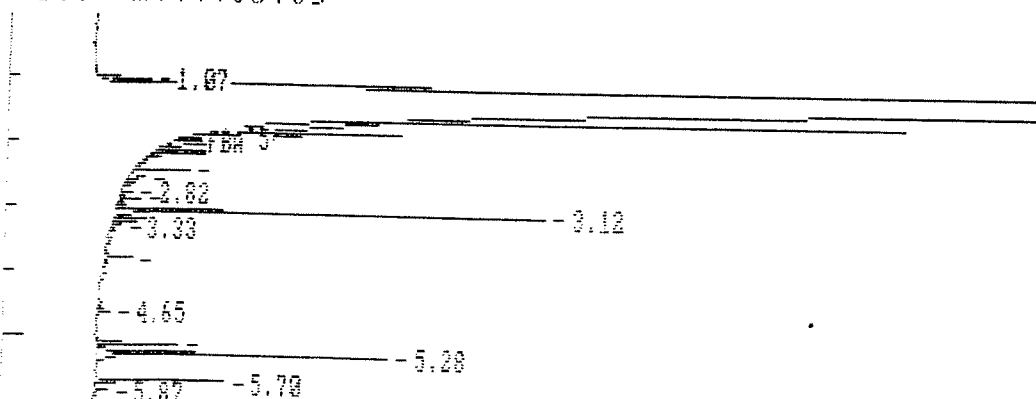
8	2.900	0.6546	0.7345%	6546	2448	2.7	1			1.0000E-04
9	3.117	9.8854	11.0913%	98855	45356	2.2	1			1.0000E-04
10	3.333	0.4406	0.4943%	4406	1186	3.7	1			1.0000E-04
11	3.817	0.7718	0.8660%	7719	3026	2.6	1			1.0000E-04
12	4.650	0.4281	0.4803%	4281	1388	3.1	1			1.0000E-04
13	5.135	1.5479	1.7367%	15479	8885	1.7	1			1.0000E-04
	5.283	7.0956	7.9611%	70956	30868	2.3	1			1.0000E-04
	5.700	2.3601	2.6479%	23601	13880	1.7	1			1.0000E-04
16	5.867	0.3023	0.3392%	3023	1557	1.9	1			1.0000E-04
17	6.767	4.4569	5.0006%	44569	11744	3.8	1			1.0000E-04
18	7.017	0.5472	0.6139%	5472	4216	1.3	1			1.0000E-04
19	7.200	3.4095	3.8254%	34095	18154	1.9	1			1.0000E-04
20	7.550	1.1007	1.2350%	11007	6323	1.7	1			1.0000E-04
21	7.717	0.6259	0.7023%	6260	2788	2.2	1			1.0000E-04
22	7.883	0.4549	0.5104%	4549	2753	1.7	1			1.0000E-04
23	7.967	0.7534	0.8453%	7534	2536	3.0	1			1.0000E-04
24	8.383 KEROSENE	1.2815	1.4378%	25357	4575	5.5	1	0	-5535	5.0540E-05
25	8.617	0.8703	0.9765%	8703	3019	2.9	1			1.0000E-04
26	8.917	2.4667	2.7675%	24667	4676	5.3	1			1.0000E-04
27	9.250 NAPHTHALENE	8.5122	9.5505%	211538	135226	1.6	1	0	0	4.0239E-05
28	9.433	0.5502	0.6173%	5502	3481	1.6	1			1.0000E-04
29	9.683	1.1732	1.3163%	11732	1775	6.6	1			1.0000E-04
30	9.917	1.2031	1.3499%	12032	4434	2.7	1			1.0000E-04
31	10.383	1.0437	1.1710%	10437	2140	4.9	1			1.0000E-04
32	10.517 DIESEL	0.4637	0.5203%	9072	2239	4.1	1	0	-7861	5.1114E-05
33	10.883	3.9800	4.4655%	39800	12136	3.3	1			1.0000E-04
34	11.317	2.1603	2.4238%	21603	5680	3.8	1			1.0000E-04
35	11.567	3.4421	3.8620%	34421	12848	2.7	1			1.0000E-04
36	11.933	1.9760	2.2170%	19760	2471	8.0	1			1.0000E-04
37	12.233	2.6707	2.9964%	26707	14218	1.9	1			1.0000E-04
38	12.533	0.9958	1.1173%	9958	5278	1.9	1			1.0000E-04
39	12.850	0.3605	0.4045%	3606	1288	2.8	1			1.0000E-04
40	13.167	3.2513	3.6479%	32513	14079	2.3	1			1.0000E-04
41	13.433	0.9997	1.1216%	9997	1414	7.1	1			1.0000E-04
42	13.833	2.4892	2.7928%	24892	10222	2.4	1			1.0000E-04
43	14.000	1.6599	1.8624%	16599	7913	2.1	1			1.0000E-04
44	14.533	1.1650	1.3071%	11650	5098	2.3	1			1.0000E-04
45	15.050	0.4514	0.5065%	4514	2663	1.7	1			1.0000E-04

TOTAL AMOUNT = 89.1279

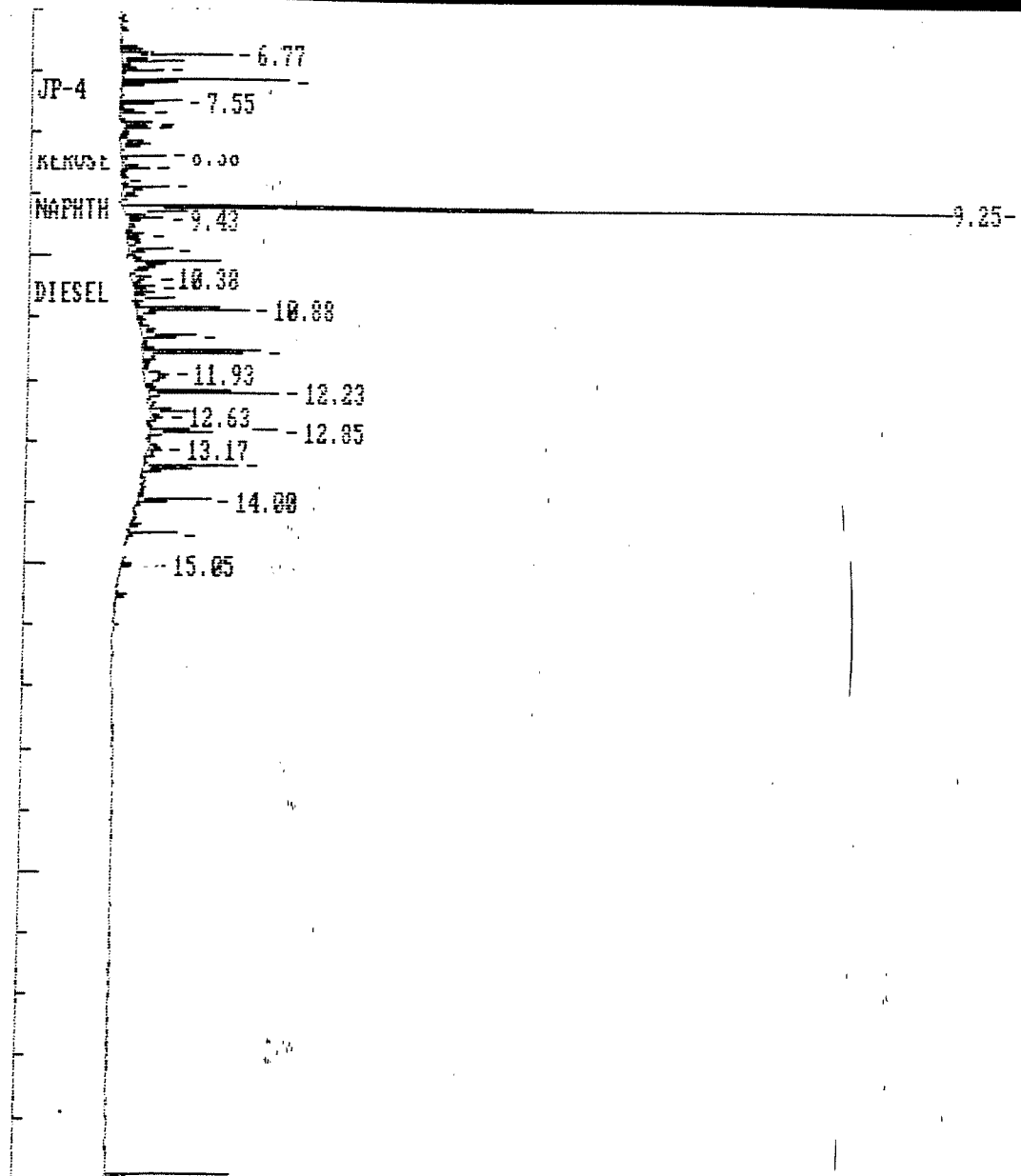
PEAKS NOT FOUND IN THIS RUN

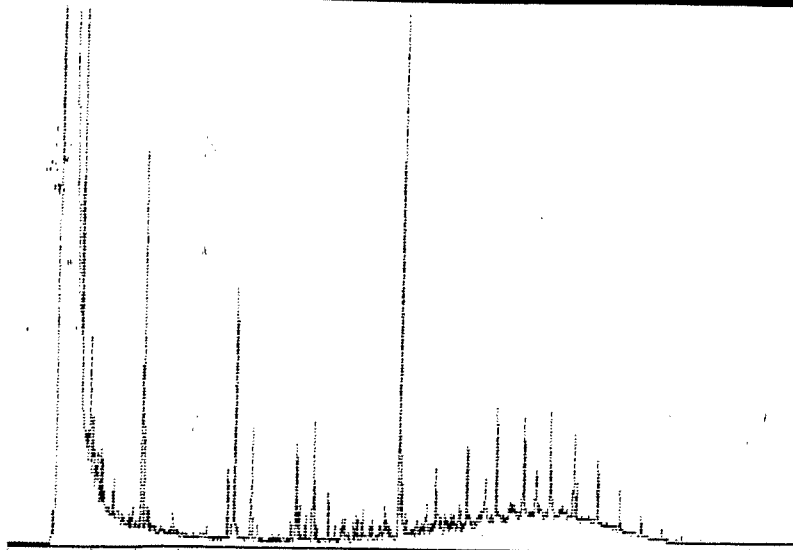
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL

Data File = L:LM01-166.PTS Printed on 12-09-1993 at 18:45:33
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



003827





BATCH# 131
 DATE 12-10-93
 ANALYST JP

TH - 28.1 $\mu\text{g/L}$
 T = 20.0 $\mu\text{g/L}$ } 942
 N = 1.90 $\mu\text{g/L}$ } 942
 N_T = 2.00 $\mu\text{g/L}$ } 942
 Fac 1.01

[Interface 6] 0-25 Min Scale: 100 Mv
 LCS-2 B Processed: 12-10-1993 09:47:16, segment 1, cycle 167
 RAW DATA SAVED IN FILE L:LM01-167.PTS

AREA PERCENT REPORT

***** 12-10-1993 09:48:46 Version 5.1.5 *****
 * Sample Name: LCS-2 B#131/931209/25ML>5ML Data File: L:LM01-167 *
 * Date: 12-10-1993 09:47:16 Method: DIESEL *
 * Interface: 6 Cycle#: 167 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

PK No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.067	8162	0.5368	1	4425	2.985	1.8
2	1.167	111588	7.3390	1	64162	40.815	1.7
3	1.700	89503	5.8865	1	74079	32.737	1.2
4	2.100	25537	1.6795	1	8352	9.341	3.1
5	2.200	23240	1.5284	1	10140	8.500	2.3
6	2.483	13026	0.8567	1	7240	4.764	1.8
7	2.617	11371	0.7479	1	2084	4.159	5.5
8	2.833	3960	0.2604	1	2261	1.448	1.8
9	2.917	8115	0.5337	1	3411	2.968	2.4
10	3.117	114516	7.5316	1	68999	41.986	1.7
11	3.250	12767	0.8397	1	4022	4.670	3.2
12	3.550	4996	0.3286	1	945	1.827	5.3
13	3.817	10402	0.6841	1	3952	3.805	2.6
14	4.650	7512	0.5203	1	1832	2.394	4.3
15	5.173	20211	1.3292	1	12872	7.392	1.6
16	5.293	92069	6.0553	1	45566	53.676	2.0
17	5.700	79829	2.6195	1	20748	14.568	1.7
18	6.383	2224	0.1463	1	1438	0.813	1.5
19	6.650	6913	0.4550	1	3496	2.530	2.0

6: 534368 $\mu\text{g/L}$
 8: 2072 $\mu\text{g/L}$
 = 8.7713 $\mu\text{g/L}$

REVIEWED & APPROVED
 BY SHN DATE 12/14/93 003829

20	7.183	108475	7.1545	1	21711	59.677	5.0
21	7.550	14404	0.9473	1	8649	5.269	1.7
22	7.883	5853	0.3849	1	3363	2.141	1.7
23	7.950	12577	0.8271	1	3530	4.600	3.6
24	8.167	6932	0.4559	1	3086	2.536	2.2
25	8.383	13176	0.8666	1	5399	4.819	2.4
26	8.617	11265	0.7409	1	3481	4.120	3.2
27	8.917	26396	1.7360	1	5926	9.655	4.5
28	9.250	273398	17.9810	1	163695	100.000	1.7
29	9.433	13589	0.8937	1	3920	4.970	3.5
30	9.683	17369	1.1423	1	2622	6.353	6.6
31	9.917	16686	1.0974	1	5583	6.103	3.0
32	10.200	9749	0.6412	1	2562	3.566	3.8
33	10.367	14053	0.9242	1	3192	5.140	4.4
34	10.717	25814	1.6978	1	4600	9.442	5.6
35	10.867	38530	2.5340	1	14322	14.093	2.7
36	11.317	16105	1.0592	1	7475	5.891	2.2
37	11.567	51772	3.4050	1	20834	18.937	2.5
38	11.933	26805	1.7629	1	3405	9.804	7.9
39	12.233	45497	2.9923	1	18030	16.641	2.5
40	12.533	23451	1.5423	1	8278	8.577	2.8
41	12.850	46425	3.0533	1	19264	16.981	2.4
42	13.167	13250	0.8714	1	1961	4.846	6.8
43	13.433	34982	2.3007	1	15205	12.795	2.3
44	14.000	24539	1.6139	1	11378	8.976	2.2
45	14.533	12927	0.8502	1	7612	4.728	1.7
46	15.050	6518	0.4287	1	3703	2.384	1.8
47	15.533	3604	0.2370	1	2114	1.318	1.7

Total Area: 1520481 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-10-1993 09:48:56 Version 5.1.5 *****

* Sample Name: LCS-2 B#131/931209/25ML>5ML Data File: L:LM01-167 *

* Date: 12-10-1993 09:47:16 Method: DIESEL 12-03-1993 15:15:14 # 583 *

* Interface: 6 Cycle#: 167 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10. Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *

* Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

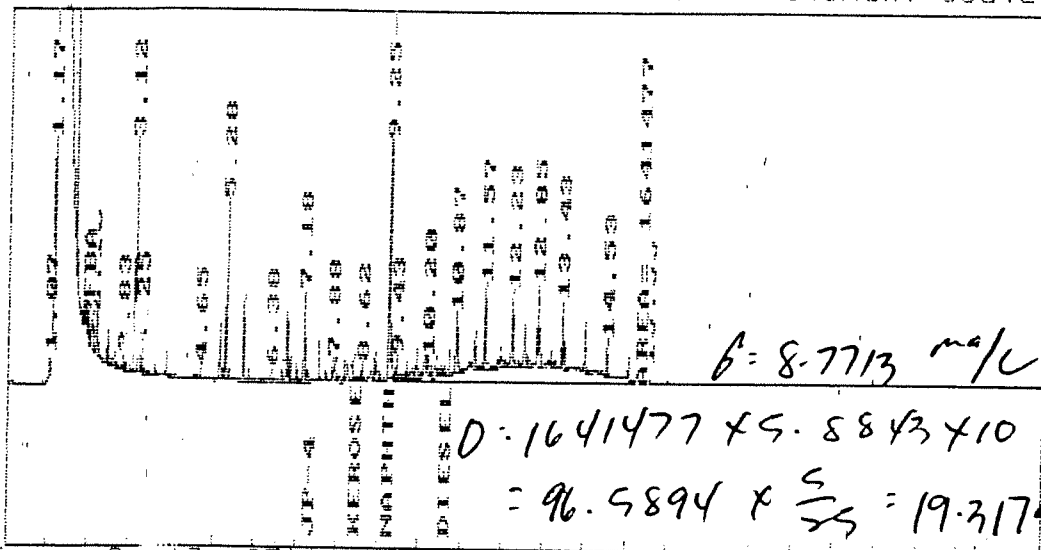
Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	7.183		9.8162	0.6109%	9162	4425	1.9 1			1.0000E-04
2	7.167		11.1589	8.3402%	111588	54162	1.7 1			1.0000E-04
3	7.700		8.9505	6.6895%	13503	74079	1.1 1			1.0000E-04
4	7.100		1.5537	1.9987%	25537	8352	3.1 1			1.0000E-04
5	7.200		2.3240	1.7369%	25240	10140	2.5 1			1.0000E-04
6	7.483		1.7026	0.9736%	15026	7240	1.8 1			1.0000E-04

003830

START TIME= 9.350 START HEIGHT= 6189
 STOP TIME= 15.533 STOP HEIGHT= 6189
 AREA = 1641477
 Plot of data file: L:LM01-167.PTS
 Date: 12-10-1993 Time: 10:08:36
 Sample Name: LCS-2 B#131/931209/
 Start Time= 0.02 Stop Time = 25.02 Min. Scale= 4841 Max. Scale= 104841



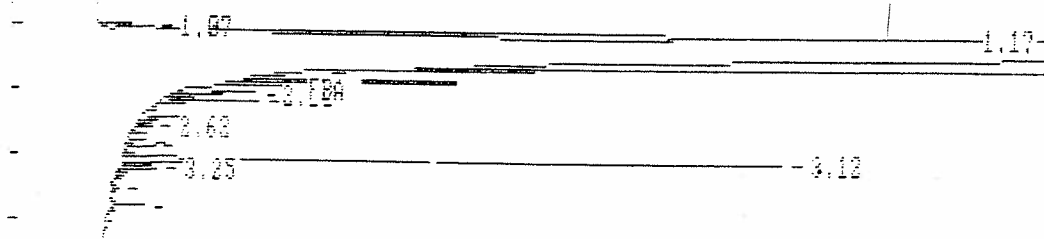
7	2.017	1.1271	0.84574	11271	2084	2.2 1	1.0000E-04
8	2.833	0.3960	0.2960%	3960	2261	1.8 1	1.0000E-04
9	2.917	0.8115	0.6065%	8115	3411	2.4 1	1.0000E-04
10	3.117	11.4516	8.5590%	114516	68999	1.7 1	1.0000E-04
11	3.250	1.2767	0.9542%	12767	4022	3.2 1	1.0000E-04
12	3.550	0.4996	0.3734%	4996	945	5.3 1	1.0000E-04
13	3.617	1.0402	0.7775%	10402	3952	2.6 1	1.0000E-04
14	4.650	0.7911	0.5913%	7912	1832	4.3 1	1.0000E-04
15	5.133	2.0211	1.5105%	20211	12872	1.6 1	1.0000E-04
16	5.283	9.2069	6.8813%	92069	45566	2.0 1	1.0000E-04
17	5.700	3.9829	2.9768%	39829	20748	1.9 1	1.0000E-04
18	6.383	0.2224	0.1662%	2224	1438	1.5 1	1.0000E-04
19	6.650	0.6918	0.5171%	6918	3496	2.0 1	1.0000E-04
20	7.183	10.8475	8.1075%	108475	21711	5.0 1	1.0000E-04
21	7.550	1.4404	1.0766%	14404	8649	1.7 1	1.0000E-04
22	7.883	0.5853	0.4375%	5853	3363	1.7 1	1.0000E-04
23	7.950	1.2577	0.9400%	12577	3530	3.6 1	1.0000E-04
24	8.167	0.6932	0.5181%	6932	3086	2.2 1	1.0000E-04
25	8.383 KEROSENE	0.6659	0.4977%	13176	5399	2.4 1	0 -5.535 5.0540E-05
26	8.617	1.1264	0.8419%	11265	3481	3.2 1	1.0000E-04
27	8.917	2.6396	1.9729%	26396	5926	4.5 1	1.0000E-04
28	9.250 NAPHTHALENE	11.0013	8.2225%	273398	163695	1.7 1	0 0 4.0239E-05
29	9.433	1.3589	1.0156%	13589	3920	3.5 1	1.0000E-04
30	9.683	1.7369	1.2982%	17369	2622	6.6 1	1.0000E-04
31	9.917	1.6686	1.2471%	16686	5583	3.0 1	1.0000E-04
32	10.200	0.9749	0.7286%	9749	2562	3.8 1	1.0000E-04
33	10.367	1.4053	1.0503%	14053	3192	4.4 1	1.0000E-04
34	10.717 DIESEL	1.3195	0.9862%	25814	4600	5.6 1	0 1.100 5.1114E-05
35	10.867	3.8529	2.8797%	38530	14322	2.7 1	1.0000E-04
36	11.317	1.6104	1.2037%	16105	7475	2.2 1	1.0000E-04
37	11.567	5.1772	3.8695%	51772	20834	2.5 1	1.0000E-04
38	11.933	2.6805	2.0034%	26805	3405	7.9 1	1.0000E-04
39	12.233	4.5497	3.4005%	45497	18030	2.5 1	1.0000E-04
40	12.533	2.3450	1.7527%	23451	8278	2.8 1	1.0000E-04
41	12.850	4.6425	3.4698%	46425	19264	2.4 1	1.0000E-04
42	13.167	1.3250	0.9903%	13250	1961	6.8 1	1.0000E-04
43	13.433	3.4982	2.6146%	34982	15205	2.3 1	1.0000E-04
44	14.000	2.4539	1.8341%	24539	11378	2.2 1	1.0000E-04
45	14.533	1.2927	0.9662%	12927	7612	1.7 1	1.0000E-04
46	15.050	0.6518	0.4872%	6518	3703	1.8 1	1.0000E-04
47	15.533	0.3604	0.2694%	3604	2114	1.7 1	1.0000E-04

TOTAL AMOUNT = 133.7961

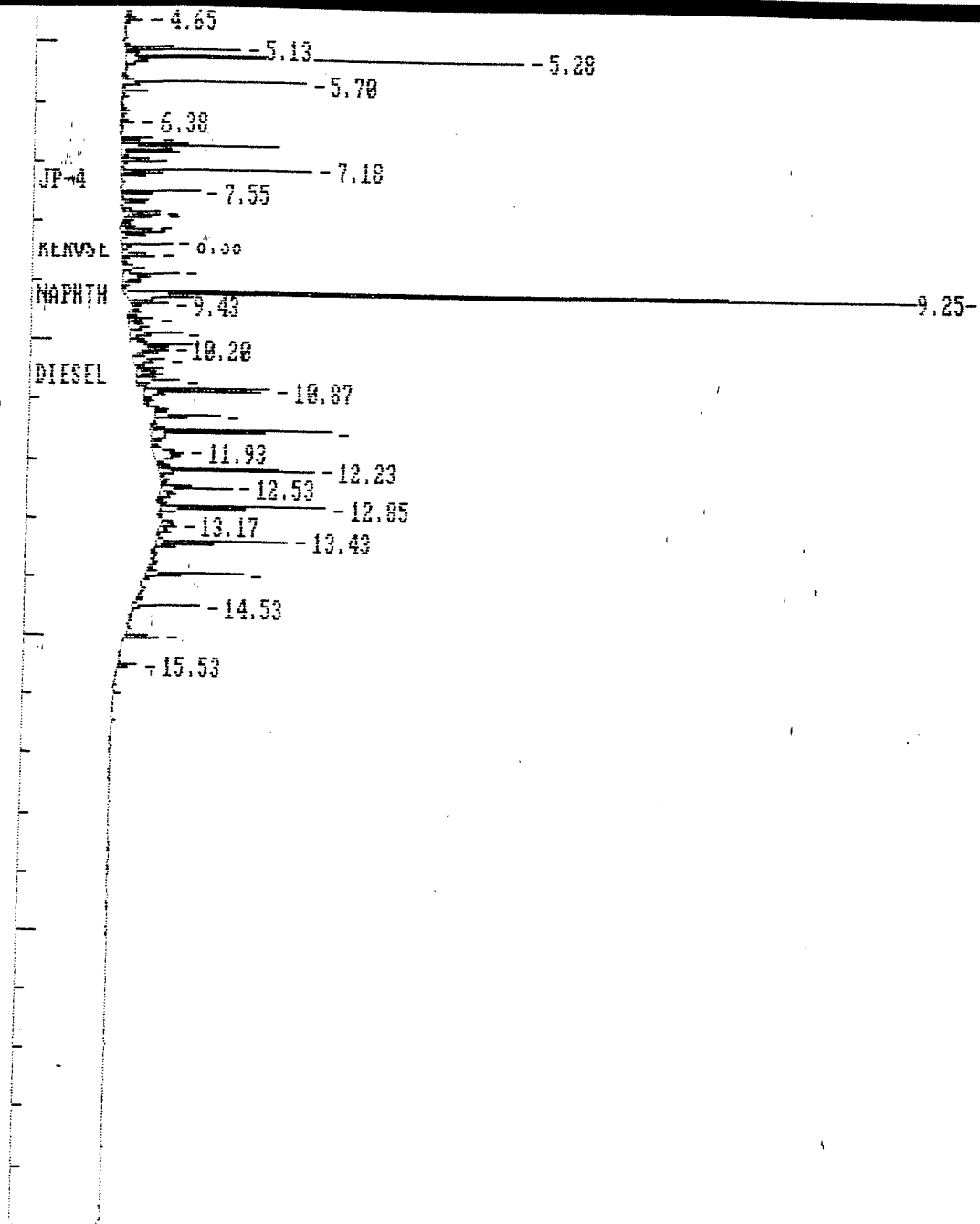
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.53	DIESEL

Data File = L:LM01-167.PTS Printed on 12-10-1993 at 09:49:24
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



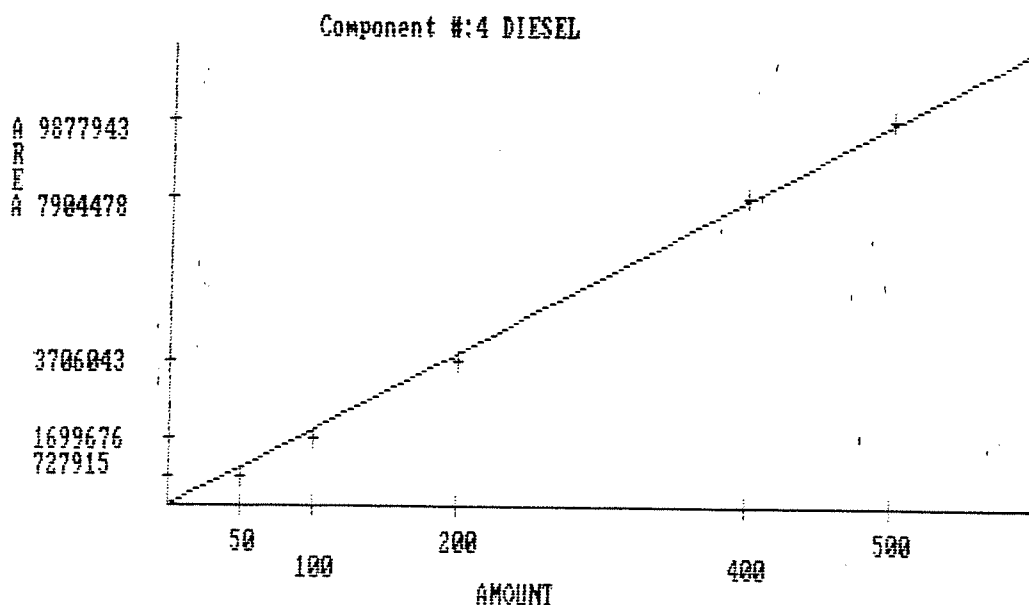
003832



Initial Calibrations:
Inst 536-25 (12/02/93)

Fuels
Initial Calibration
12-2-93

Method DIESEL
Sample MODIFIED 8015 FUELS
Operator JP
Run date 12-02-1993 11:48:59 version: 581
Printed on 12-02-1993 AT 11:49:20
Straight Line Fit forced through Origin.



Component 4 = DIESEL
EXTERNAL STANDARD CALIBRATION
AREA

LEVEL	AMOUNT	AREA
1	50.00	727915
2	100.00	1699676
3	200.00	3706043
4	400.00	7904478
5	500.00	9877943

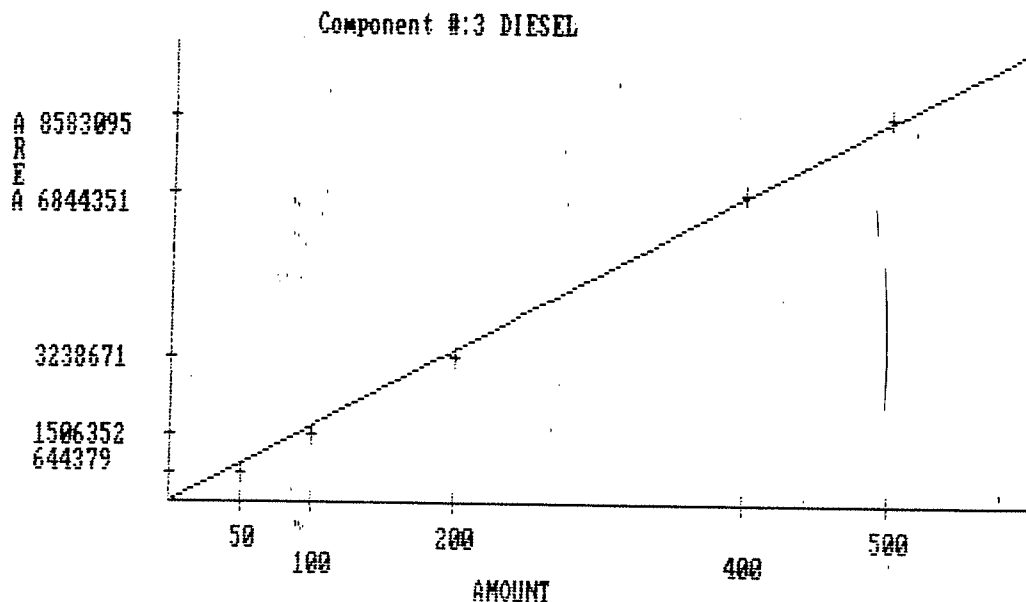
Y = SLOPE * X + INTERCEPT

Area = 1.9564E+04 * Amount + 0.0000E+00
Amount = 5.1114E-05 * Area + 0.0000E+00
R squared = 0.9970

R = 0.998

003835

Method FUELS
Sample MODIFIED 8015 FUELS
Operator JP
Run date 12-02-1993 11:42:29 version: 384
Printed on 12-02-1993 AT 11:42:51
Straight Line Fit forced through Origin.



Component 3 = DIESEL
EXTERNAL STANDARD CALIBRATION
AREA

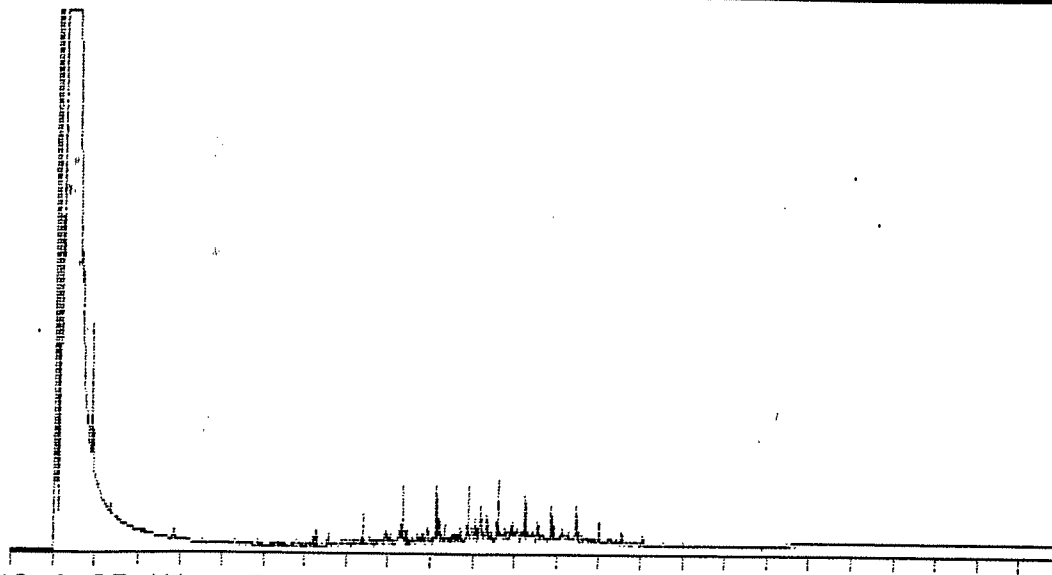
LEVEL	AMOUNT	AREA
1	50.00	644379
2	100.00	1506352
3	200.00	3238671
4	400.00	6844351
5	500.00	8583095

Y = SLOPE * X + INTERCEPT

Area = 1.6994E+04 * Amount + 0.0000E+00
Amount = 5.8843E-05 * Area + 0.0000E+00
R squared = 0.9976

R = 0.999

003836



[Interface 6] 0-25 Min Scale: 100 Mu
 DIESEL Processed: 12-02-1993 00:30:23, segment 12, cycle 12
 RAW DATA SAVED IN FILE L:SM01-12.PTS

***** AREA PERCENT REPORT *****

***** 12-02-1993 00:31:43 Version 5.1.5 *****
 * Sample Name: DIESEL 50 PPM SV9310038 Data File: L:SM01-12 *
 * Date: 12-02-1993 00:30:23 Method: DIESEL *
 * Interface: 6 Cycle#: 12 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: *
 * Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	2425135	12.950900	992148	15.166	2.4	
2	1.217	15990248	85.392400	987699	100.000	16.2	
3	3.817	3124	0.0167	1	1432	0.020	2.2
5	6.783	4779	0.0255	1	1204	0.030	4.0
6	7.283	7291	0.0389	1	2708	0.046	2.7
7	7.567	6911	0.0369	1	2042	0.043	3.4
8	8.267	3158	0.0169	1	1048	0.020	3.0
9	8.400	20018	0.1069	1	5604	0.125	3.6
10	8.933	12373	0.0661	1	2338	0.077	5.3
11	9.317	30604	0.1634	1	10647	0.191	2.9
12	9.700	11822	0.0631	1	1750	0.074	6.8
13	9.933	9357	0.0500	1	3016	0.059	3.1
14	10.200	16065	0.0858	1	3869	0.100	4.2
15	10.717	6559	0.0350	1	2430	0.041	2.7
16	10.883	33869	0.1809	1	10228	0.212	3.3
1	11.167	16828	0.0899	1	6066	0.105	2.8
1	11.333	13030	0.0696	1	4398	0.081	3.0
1	11.583	20471	0.1093	1	10988	0.128	1.9

003837

21	12.233	28722	0.1534	1	7538	0.180	3.8
22	12.550	12737	0.0680	1	3319	0.080	3.8
23	12.850	17392	0.0929	1	6198	0.109	2.8
24	13.117	4946	0.0264	1	1674	0.031	3.0
25	13.450	14166	0.0756	1	5982	0.089	2.4
2	14.233	3852	0.0206	1	997	0.024	3.9
14	14.550	4897	0.0262	1	2054	0.031	2.4
15	15.050	2616	0.0140	1	1718	0.016	1.5

Total Area: 18725620 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-02-1993 00:31:48 Version 5.1.5 *****

* Sample Name: DIESEL 50 PPM SU9310038 Data File: L:SM01-12 *

* Date: 12-02-1993 00:30:23 Method: DIESEL 11-23-1993 17:55:13 # 579 *

* Interface: 6 Cycle#: 12 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *

* Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEAK	RET	PEAK	CONCENTRATION in	NORMALIZED	AREA	HEIGHT	AREA/	REF	% DELTA	CONC/AREA
TIME	NAME	mg/kg	CONC	HEIGHT	HEIGHT BL	PEAK	RET TIME			
1	1.050	242.5135	12.9627%	2425135	992148	2.4 0V			1.0000E-04	
2	1.217	1599.0248	85.4702%	15990248	987699	16.2 0V			1.0000E-04	
3	3.817	0.3124	0.0167%	3124	1432	2.2 1			1.0000E-04	
5	6.783	0.4779	0.0255%	4779	1204	4.0 1			1.0000E-04	
6	7.283 JP-4	0.4118	0.0220%	7291	2708	2.7 1	0	- .6366	5.6477E-05	
7	7.567	0.6910	0.0369%	6911	2042	3.4 1			1.0000E-04	
8	8.267	0.3158	0.0169%	3158	1048	3.0 1			1.0000E-04	
9	8.400 KEROSENE	0.9579	0.0512%	20018	5604	3.6 1	0	- .3558	4.7850E-05	
10	8.933	1.2372	0.0661%	12373	2338	5.3 1			1.0000E-04	
11	9.317	3.0603	0.1636%	30604	10647	2.9 1			1.0000E-04	
12	9.700	1.1822	0.0632%	11822	1750	6.8 1			1.0000E-04	
13	9.933	0.9357	0.0500%	9357	3016	3.1 1			1.0000E-04	
14	10.200	1.6064	0.0859%	16065	3869	4.2 1			1.0000E-04	
15	10.717 DIESEL	0.3126	0.0167%	6559	2430	2.7 1	0	1.100	4.7667E-05	
16	10.883	3.3869	0.1810%	33869	10228	3.3 1			1.0000E-04	
17	11.167	1.6828	0.0899%	16828	6066	2.8 1			1.0000E-04	
18	11.333	1.3030	0.0696%	13030	4398	3.0 1			1.0000E-04	
19	11.583	2.0471	0.1094%	20471	10988	1.9 1			1.0000E-04	
20	11.767	0.4651	0.0249%	4651	1840	2.5 1			1.0000E-04	
21	12.233	2.8722	0.1535%	28722	7538	3.8 1			1.0000E-04	
22	12.550	1.2737	0.0681%	12737	3319	3.8 1			1.0000E-04	
23	12.850	1.7392	0.0930%	17392	6198	2.8 1			1.0000E-04	
24	13.117	0.4946	0.0264%	4946	1674	3.0 1			1.0000E-04	
25	13.450	1.4166	0.0757%	14166	5982	2.4 1			1.0000E-04	
2	14.233	0.3852	0.0206%	3852	997	3.9 1			1.0000E-04	

003838

28 15.050

0.2616

0.0140%

2616 1718

1.5 1

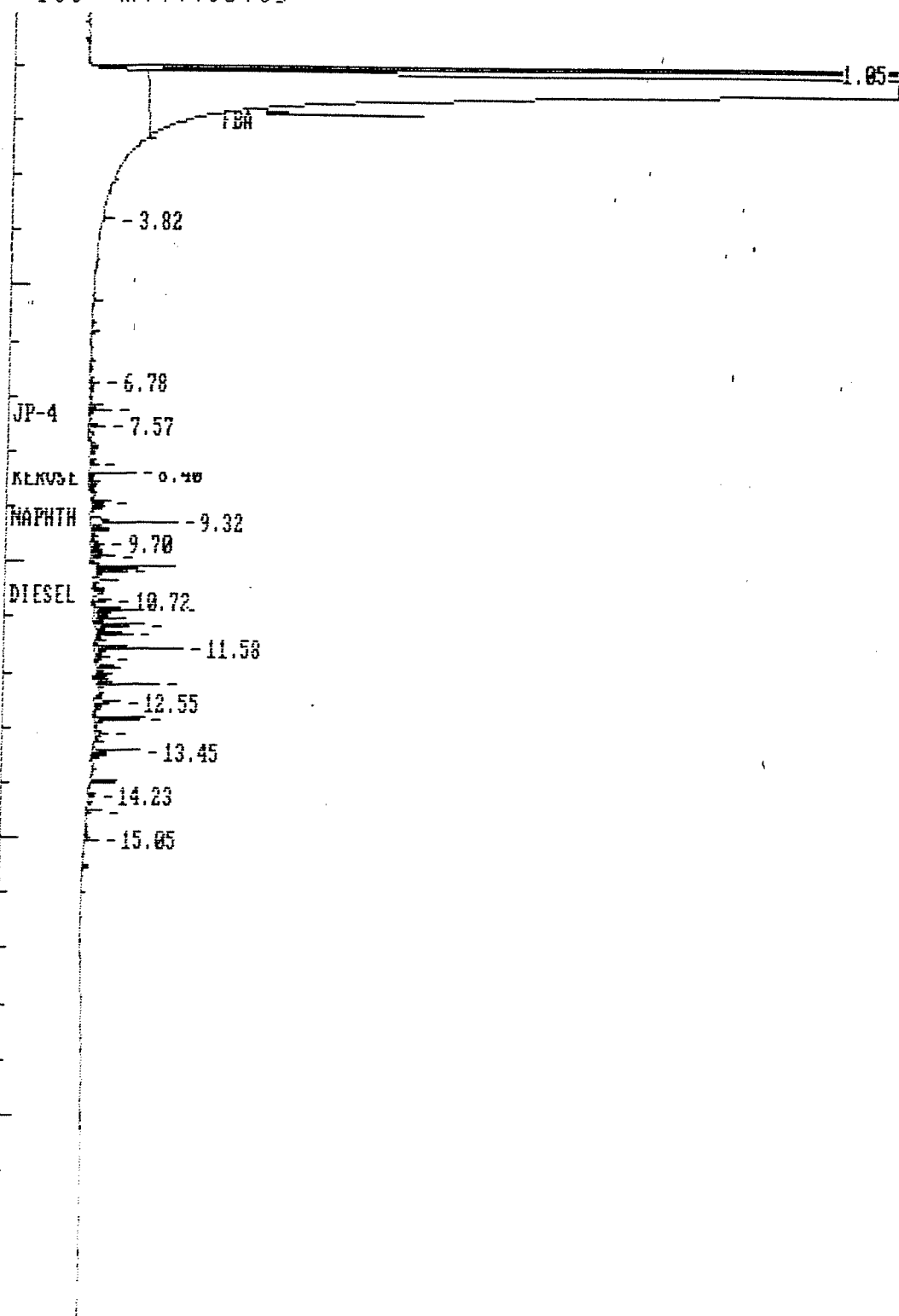
1.0000E-04

TOTAL AMOUNT = 1870.8572

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET. TIME	REFERENCE PEAK
NAPHTHALENE	9.20	NAPHTHALENE

Data File = L:SM01-12.PTS Printed on 12-02-1993 at 00:32:07
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



003839

003840

SEQUENCE RECORDED IN G:FUELS.SEQ

SEQUENCE RECORDED IN G:FUELS.SEQ

START TIME= 6.783 START HEIGHT= 6254

STOP TIME= 9.150 STOP HEIGHT= 6254

ARFQ = 83536

ART TIME= 9.350 START HEIGHT= 6254

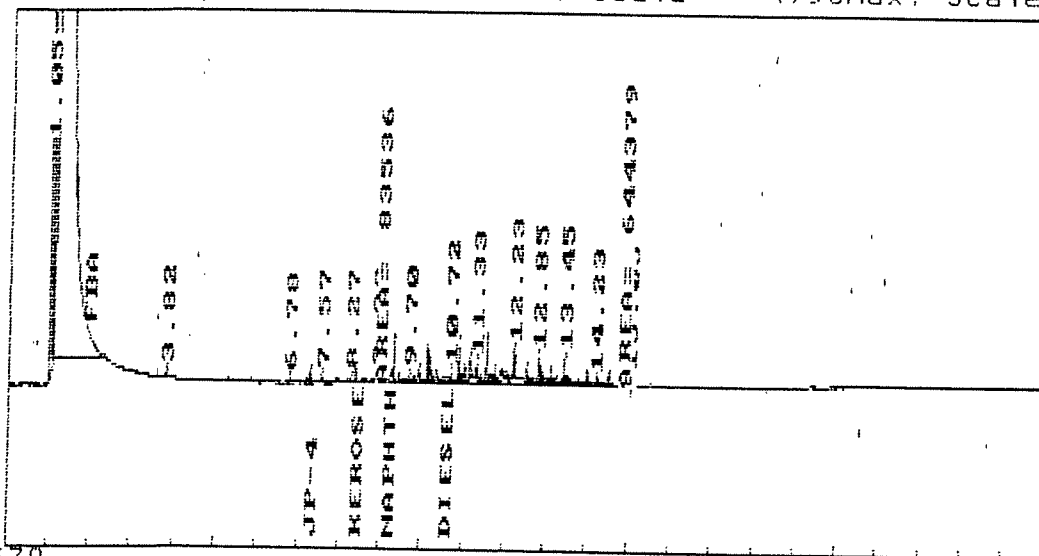
STOP TIME= 15.050 STOP HEIGHT= 6254

Plot of data file: L:SM01-12.PTS

Date: 12-02-1993 Time: 11:31:34

Sample Name: DIESEL 50 PPM SU931

Start Time= 0.02 Stop Time = 25.02 Min. Scale= 4938 Max. Scale= 104938



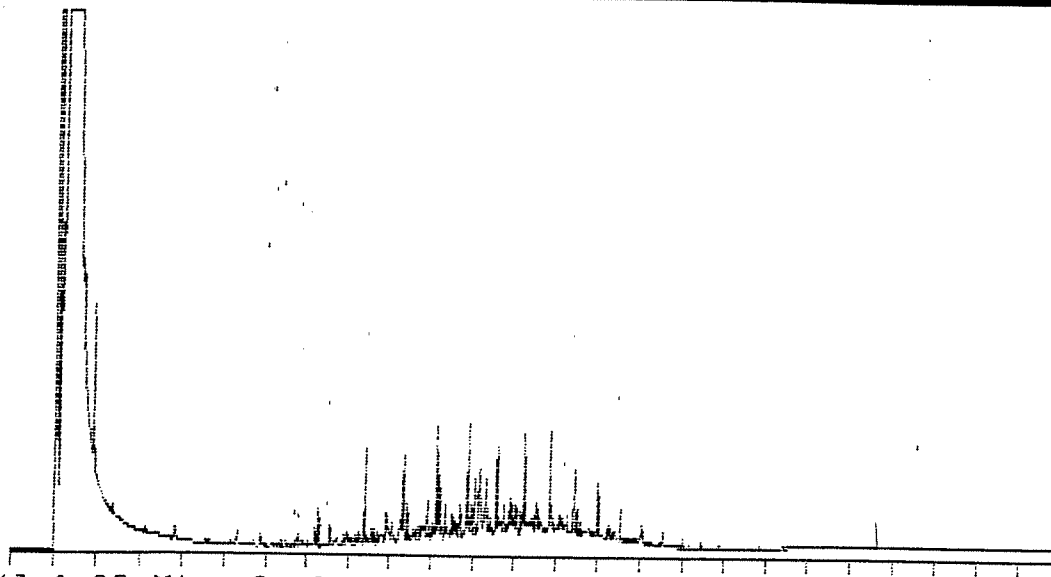
AREA = 644379

Diesel 3550 = 83536 + 644379 = 727915

Fuel TDT 644379

003841

(7)



[Interface 6] 0-25 Min Scale: 100 Mu
 DIESEL 1 Processed: 12-02-1993 01:05:36, segment 13, cycle 13
 RAW DATA SAVED IN FILE L:SM01-13.PTS

***** AREA PERCENT REPORT *****

***** 12-02-1993 01:06:56 Version 5.1.5 *****
 * Sample Name: DIESEL 100 PPM SV9310038 Data File: L:SM01-13 *
 * Date: 12-02-1993 01:05:36 Method: DIESEL *
 * Interface: 6 Cycle#: 13 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: *
 * Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	2663535	13.910400	990499		16.943	2.7
2	1.217	15720138	82.098900	983093		100.000	16.0
3	3.817	6243	0.0326	1	2444	0.040	2.6
4	5.300	4584	0.0239	1	2385	0.029	1.9
5	5.867	3934	0.0205	1	2338	0.025	1.7
6	6.783	8637	0.0451	1	2057	0.055	4.2
7	7.283	14385	0.0751	1	6822	0.092	2.1
8	7.550	7361	0.0384	1	3796	0.047	1.9
9	7.950	9762	0.0510	1	2235	0.062	4.4
10	8.183	3267	0.0171	1	1480	0.021	2.2
11	8.383	40180	0.2098	1	17571	0.256	2.3
12	8.917	31819	0.1662	1	5216	0.202	6.1
13	9.317	51164	0.2672	1	15995	0.325	3.2
14	9.433	15990	0.0835	1	6414	0.102	2.5
15	9.683	19671	0.1027	1	2664	0.125	7.4
1	10.133	92711	0.4842	1	20293	0.590	4.6
1	10.717	31419	0.1641	1	6221	0.200	5.1
3	10.883	90409	0.4722	1	20249	0.575	4.5

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20	11.583	54288	0.2835	1	15952	0.345	3.4
21	11.933	43875	0.2291	1	6456	0.279	6.8
22	12.233	54483	0.2845	1	18262	0.347	3.0
23	12.850	58396	0.3050	1	18093	0.371	3.2
24	13.433	27985	0.1461	1	11395	0.178	2.5
25	13.583	11480	0.0600	1	2156	0.073	5.3
26	14.000	13533	0.0707	1	9633	0.086	1.4
27	14.267	17506	0.0914	1	2522	0.111	6.9
28	14.533	16915	0.0883	1	6011	0.108	2.8
29	15.050	4510	0.0236	1	2832	0.029	1.6
30	15.533	3971	0.0207	1	2291	0.025	1.7
31	16.000	2068	0.0108	1	1260	0.013	1.6

Total Area: 19147816 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-02-1993 01:07:01 Version 5.1.5 *****
 * Sample Name: DIESEL 100 PPM SU9310038 Data File: L:SM01-13 *
 * Date: 12-02-1993 01:05:36 Method: DIESEL 11-23-1993 17:55:13 # 579 *
 * Interface: 6 Cycle#: 13 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *
 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

St ing Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		266.3535	13.9422%	2663535	990499	2.7 0V			1.0000E-04
2	1.217		1572.0138	82.2865%	15720138	983093	16.0 0V			1.0000E-04
3	3.817		0.6243	0.0327%	6243	2444	2.6 1			1.0000E-04
4	5.300		0.4584	0.0240%	4584	2385	1.9 1			1.0000E-04
5	5.867		0.3934	0.0206%	3934	2338	1.7 1			1.0000E-04
6	6.783		0.8637	0.0452%	8637	2057	4.2 1			1.0000E-04
7	7.283	JP-4	0.8124	0.0425%	14385	6822	2.1 1	0	-0.6366	5.6477E-05
8	7.550		0.7361	0.0385%	7361	3796	1.9 1			1.0000E-04
9	7.950		0.9761	0.0511%	9762	2235	4.4 1			1.0000E-04
10	8.183		0.3267	0.0171%	3267	1480	2.2 1			1.0000E-04
11	8.383	KEROSENE	1.9226	0.1006%	40180	17571	2.3 1	0	-0.5535	4.7850E-05
12	8.917		3.1819	0.1666%	31819	5216	6.1 1			1.0000E-04
13	9.317		5.1164	0.2678%	51164	15995	3.2 1			1.0000E-04
14	9.433		1.5990	0.0837%	15990	6414	2.5 1			1.0000E-04
15	9.683		1.9670	0.1030%	19671	2664	7.4 1			1.0000E-04
16	10.133		9.2711	0.4853%	92711	20293	4.6 1			1.0000E-04
17	10.717	DIESEL	1.4976	0.0784%	31419	6221	5.1 1	0	1.100	4.7667E-05
18	10.883		9.0409	0.4732%	90409	20249	4.5 1			1.0000E-04
19	11.317		2.3601	0.1235%	23601	8824	2.7 1			1.0000E-04
20	11.583		5.4288	0.2842%	54288	15952	3.4 1			1.0000E-04
21	11.933		4.3875	0.2297%	43875	6456	6.8 1			1.0000E-04

003843

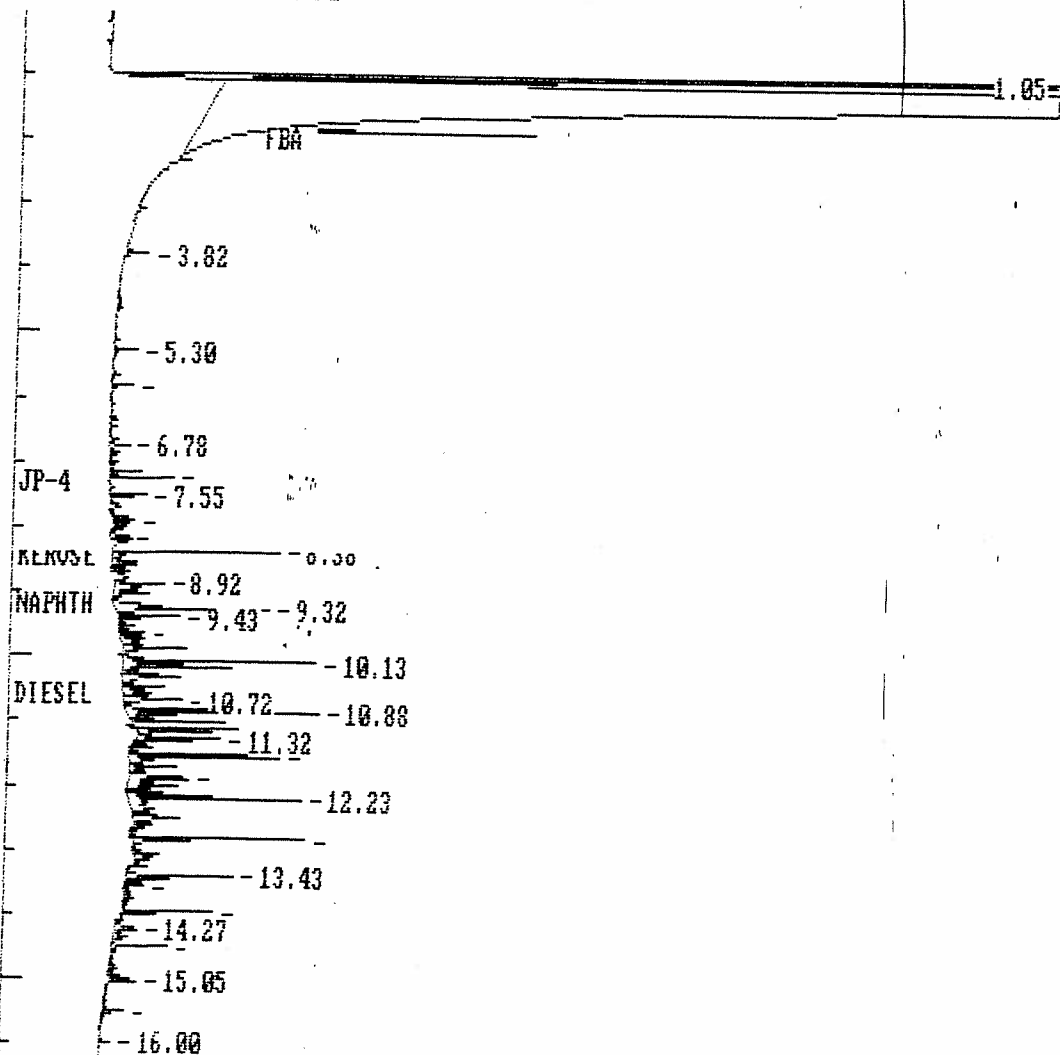
(a)

23	12.850	5.8396	0.3057%	58396	18093	3.2 1	1.0000E-04
24	13.433	2.7985	0.1465%	27985	11395	2.5 1	1.0000E-04
25	13.583	1.1479	0.0601%	11480	2156	5.3 1	1.0000E-04
26	14.000	1.3533	0.0708%	13533	9633	1.4 1	1.0000E-04
27	14.267	1.7506	0.0916%	17506	2522	6.9 1	1.0000E-04
28	15.533	1.6915	0.0885%	16915	6011	2.8 1	1.0000E-04
	15.050	0.4510	0.0236%	4510	2832	1.6 1	1.0000E-04
	15.533	0.3971	0.0208%	3971	2291	1.7 1	1.0000E-04
31	16.000	0.2067	0.0108%	2068	1260	1.6 1	1.0000E-04

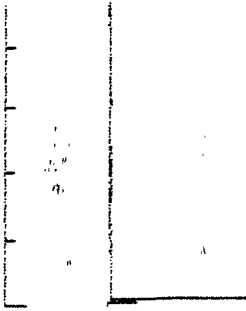
TOTAL AMOUNT = 1910.4159

PEAKS NOT FOUND IN THIS RUN
NAME ADJUSTED RET.TIME. REFERENCE PEAK
NAPHTHALENE 9.20 NAPHTHALENE

Data File = L:SM01-13.PTS Printed on 12-02-1993 at 01:07:22
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



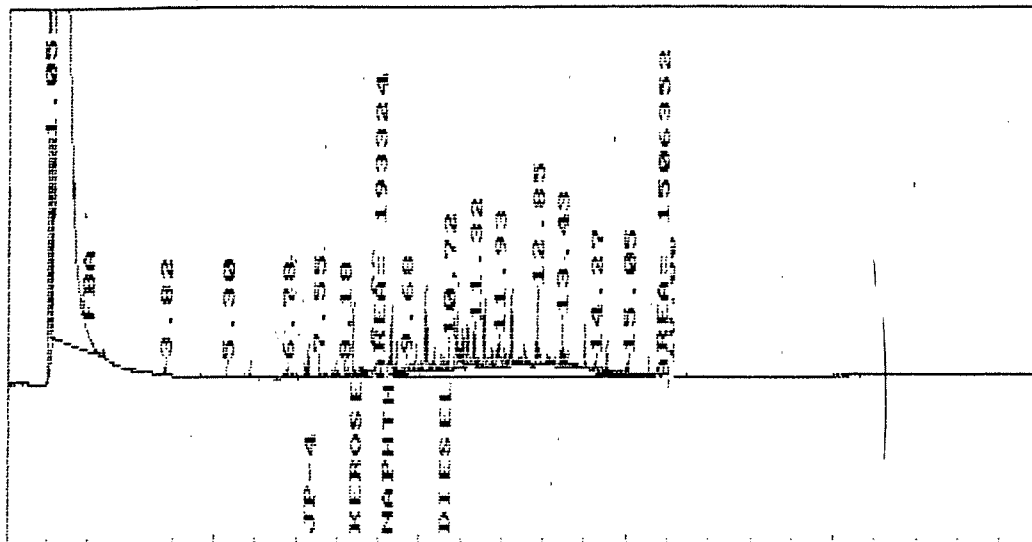
003844



003845

(11)

STOP TIME= 9.150 STOP HEIGHT= 6295
 AREA = 193324
 START TIME= 9.350 START HEIGHT= 6295
 STOP TIME= 16.000 STOP HEIGHT= 6295
 Plot of data file: L:SM01-13.PTS
 Date: 12-02-1993 Time: 11:33:04
 Sample Name: DIESEL 100 PPM SU931
 Start Time= 0.02 Stop Time = 25.02 Min. Scale= 4947 Max. Scale= 104947



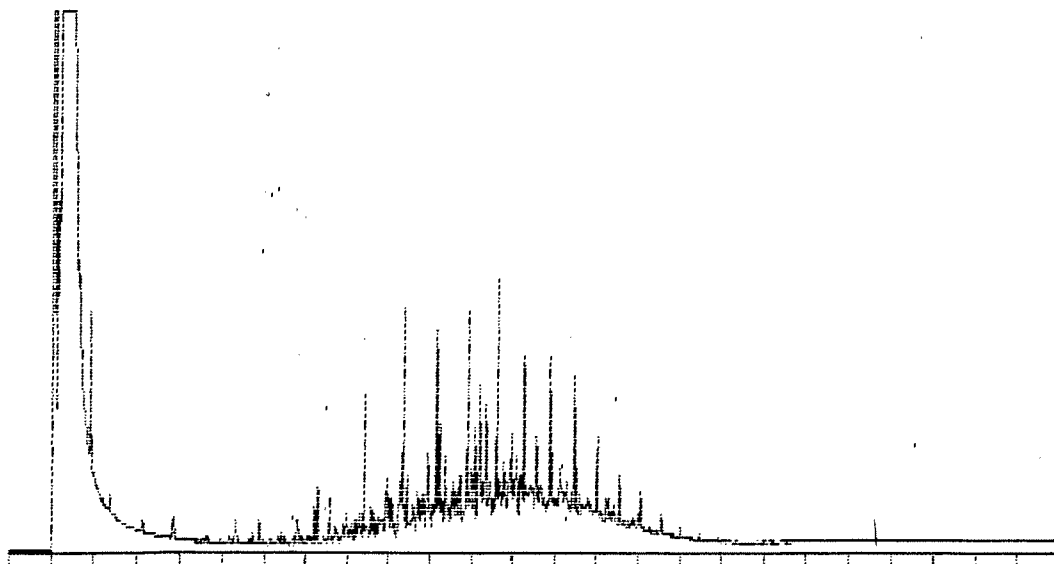
AREA = 1506352

Diesel- 3550 = 193324 + 1506352 = 1699676

Fuel- TOT = 1506352

003846

12



[Interface 6] 0-25 Min Scale: 100 Mu
 DIESEL 2 Processed: 12-02-1993 01:40:57, segment 14, cycle 14
 RAW DATA SAVED IN FILE L:SM01-14.PTS

***** AREA PERCENT REPORT *****

***** 12-02-1993 01:42:17 Version 5.1.5 *****
 * Sample Name: DIESEL 200 PPM SV9310038 Data File: L:SM01-14 *
 * Date: 12-02-1993 01:40:57 Method: DIESEL *
 * Interface: 6 Cycle#: 14 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	2951466	14.807700		985550	19.247	3.0
2	1.217	15334327	76.933400		969842	100.000	15.8
3	2.383	5993	0.0301	1	3323	0.039	1.8
4	3.133	3696	0.0185	1	2002	0.024	1.8
5	3.817	11039	0.0554	1	4139	0.072	2.7
7	5.300	6768	0.0340	1	4250	0.044	1.6
8	5.867	6876	0.0345	1	4379	0.045	1.6
9	6.400	5757	0.0289	1	2240	0.038	2.6
10	6.783	24002	0.1204	1	4734	0.157	5.1
11	7.200	9738	0.0489	1	6571	0.064	1.5
12	7.283	18610	0.0934	1	10139	0.121	1.8
13	7.567	27297	0.1369	1	8450	0.178	3.2
14	7.967	31478	0.1579	1	4577	0.205	6.9
15	8.183	8021	0.0402	1	3432	0.052	2.3
16	8.267	13102	0.0657	1	4407	0.085	3.0
17	8.400	77833	0.3905	1	26025	0.508	3.0
18	8.767	22340	0.1121	1	3264	0.146	6.8
19	8.933	60441	0.3032	1	9871	0.394	6.1

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21	9.450	33233	0.1667	1	9638	0.217	3.4
22	9.700	48137	0.2415	1	6773	0.314	7.1
23	10.133	91966	0.4614	1	33288	0.600	2.8
24	10.217	64230	0.3222	1	16096	0.419	4.0
25	10.717	64622	0.3242	1	8351	0.421	7.7
26	10.883	60913	0.3056	1	35893	0.397	1.7
27	11.067	30712	0.1541	1	15344	0.200	2.0
28	11.167	150399	0.7546	1	23805	0.981	6.3
29	11.583	79392	0.3983	1	42100	0.518	1.9
30	11.767	17952	0.0901	1	8014	0.117	2.2
31	11.950	80809	0.4054	1	13349	0.527	6.1
32	12.233	118982	0.5969	1	28566	0.776	4.2
33	12.550	62709	0.3146	1	13286	0.409	4.7
34	12.867	68494	0.3436	1	27614	0.447	2.5
35	13.117	18813	0.0944	1	6159	0.123	3.1
36	13.450	64089	0.3215	1	25012	0.418	2.6
37	13.800	22772	0.1142	1	2982	0.149	7.6
38	14.017	31571	0.1584	1	14429	0.206	2.2
39	14.283	34819	0.1747	1	4565	0.227	7.6
40	14.550	18867	0.0947	1	9212	0.123	2.0
41	15.050	32278	0.1619	1	7100	0.210	4.5
42	15.367	3618	0.0182	1	680	0.024	5.3
43	15.550	6726	0.0337	1	3812	0.044	1.8
44	16.017	3664	0.0184	1	2150	0.024	1.7
45	16.467	2340	0.0117	1	1339	0.015	1.7

Total Area: 19931942 Area Reject: 2000 One sample per 1.000 sec.

```

**      ** ** **      EXTERNAL STANDARD TABLE      ** ** ** **
** ***** 12-02-1993 01:42:26 Version 5.1.5 *****
Sample Name: DIESEL 200 PPM SV9310038 Data File: L:SM01-14 *
* Date: 12-02-1993 01:40:57 Method: DIESEL 11-23-1993 17:55:13 # 579 *
* Interface: 6 Cycle#: 14 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *
*****
* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: Detector 1: *
* Misc. Information: 536-25 INITIAL CALIBRATION *
*****
Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		295.1466	14.8693%	2951466	985550	3.0 0V			1.0000E-04
2	1.217		1533.4326	77.2532%	15334327	969842	15.8 0V			1.0000E-04
3	2.383		0.5993	0.0302%	5993	3323	1.8 1			1.0000E-04
4	3.133		0.3696	0.0186%	3696	2002	1.8 1			1.0000E-04
5	3.817		1.1039	0.0556%	11039	4139	2.7 1			1.0000E-04
7	.300		0.6768	0.0341%	6768	4250	1.6 1			1.0000E-04
8	5.867		0.6876	0.0346%	6876	4379	1.6 1			1.0000E-04
9	6.400		0.5756	0.0290%	5757	2240	2.6 1			1.0000E-04

003848

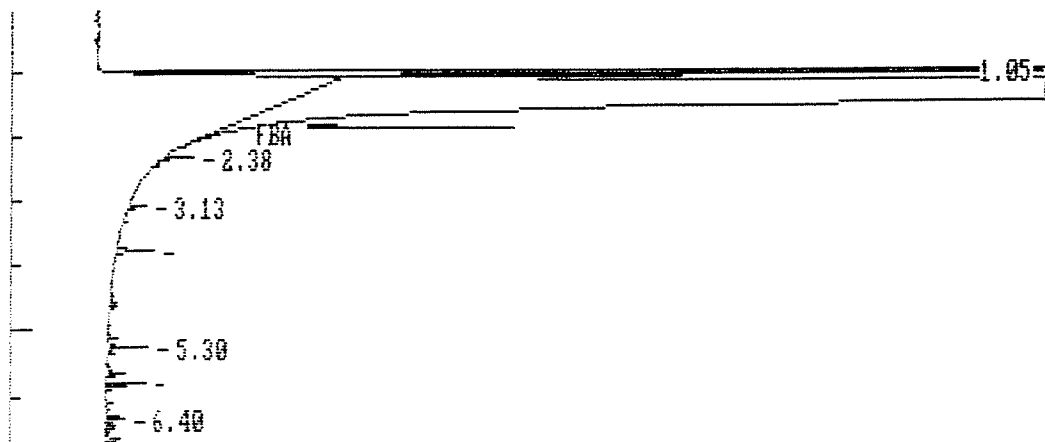
14

11	7.200	0.9738	0.0491%	9738	6571	1.5	1	1.0000E-04
12	7.283 JP-4	1.0510	0.0530%	18610	10139	1.8	1	5.6477E-05
13	7.567	2.7297	0.1375%	27297	8450	3.2	1	1.0000E-04
14	7.967	3.1478	0.1586%	31478	4577	6.9	1	1.0000E-04
15	8.183	0.8021	0.0404%	8021	3432	2.3	1	1.0000E-04
16	8.267	1.3102	0.0660%	13102	4407	3.0	1	1.0000E-04
17	8.400 KEROSENE	3.7243	0.1876%	77833	26025	3.0	1	4.7850E-05
18	8.767	2.2340	0.1125%	22340	3264	6.8	1	1.0000E-04
19	8.933	6.0441	0.3045%	60441	9871	6.1	1	1.0000E-04
20	9.317	10.1055	0.5091%	101055	40839	2.5	1	1.0000E-04
21	9.450	3.3233	0.1674%	33233	9638	3.4	1	1.0000E-04
22	9.700	4.8137	0.2425%	48137	6773	7.1	1	1.0000E-04
23	10.133	9.1965	0.4633%	91966	33288	2.8	1	1.0000E-04
24	10.217	6.4230	0.3236%	64230	16096	4.0	1	1.0000E-04
25	10.717 DIESEL	3.0803	0.1552%	64622	8351	7.7	1	4.7667E-05
26	10.883	6.0913	0.3069%	60913	35893	1.7	1	1.0000E-04
27	11.067	3.0712	0.1547%	30712	15344	2.0	1	1.0000E-04
28	11.167	15.0399	0.7577%	150399	23805	6.3	1	1.0000E-04
29	11.583	7.9391	0.4000%	79392	42100	1.9	1	1.0000E-04
30	11.767	1.7952	0.0904%	17952	8014	2.2	1	1.0000E-04
31	11.950	8.0809	0.4071%	80809	13349	6.1	1	1.0000E-04
32	12.233	11.8981	0.5994%	118982	28566	4.2	1	1.0000E-04
33	12.550	6.2709	0.3159%	62709	13286	4.7	1	1.0000E-04
34	12.867	6.8494	0.3451%	68494	27614	2.5	1	1.0000E-04
35	13.117	1.8812	0.0948%	18813	6159	3.1	1	1.0000E-04
36	13.450	6.4089	0.3229%	64089	25012	2.6	1	1.0000E-04
37	13.800	2.2771	0.1147%	22772	2982	7.6	1	1.0000E-04
38	14.017	3.1571	0.1591%	31571	14429	2.2	1	1.0000E-04
39	14.283	3.4819	0.1754%	34819	4565	7.6	1	1.0000E-04
40	14.550	1.8867	0.0951%	18867	9212	2.0	1	1.0000E-04
41	15.050	3.2278	0.1626%	32278	7100	4.5	1	1.0000E-04
42	15.367	0.3618	0.0182%	3618	680	5.3	1	1.0000E-04
43	15.550	0.6726	0.0339%	6726	3812	1.8	1	1.0000E-04
44	16.017	0.3664	0.0185%	3664	2150	1.7	1	1.0000E-04
45	16.467	0.2340	0.0118%	2340	1339	1.7	1	1.0000E-04

TOTAL AMOUNT = 1984.9431

PEAKS NOT FOUND IN THIS RUN
NAME ADJUSTED RET.TIME. REFERENCE PEAK
NAPHTHALENE 9.20 NAPHTHALENE

Data File = L:SM01-14.PTS Printed on 12-02-1993 at 01:42:53
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



003849

15

JP-4

-7.97

KEROSE

-9.77

-0.40

NAPHTH

-9.45

-9.32

DIESEL

-10.22

-10.13

-10.72

-10.88

-11.02

-11.77

-11.58

-12.55

-12.23

-13.12

-12.87

-13.80

-13.45

-14.28

-14.02

-15.05

-16.02

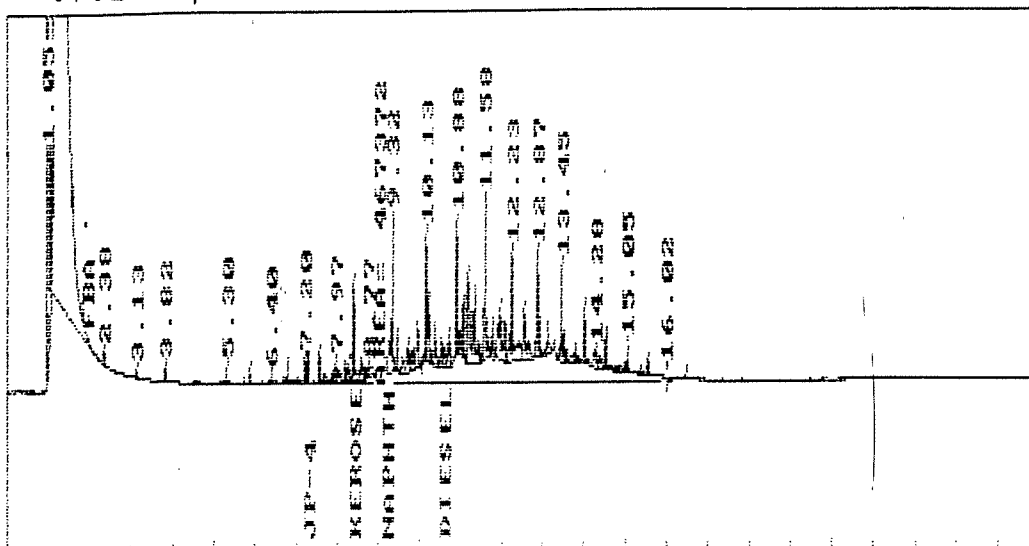
STOP TIME= 9.150 STOP HEIGHT= 6324
 AREA = 467372
 START TIME= 9.350 START HEIGHT= 6324
 STOP TIME= 16.017 STOP HEIGHT= 6324

Plot of data file: L:SM01-14.PTS

Date: 12-02-1993 Time: 11:34:36

File Name: DIESEL 200 PPM SU931

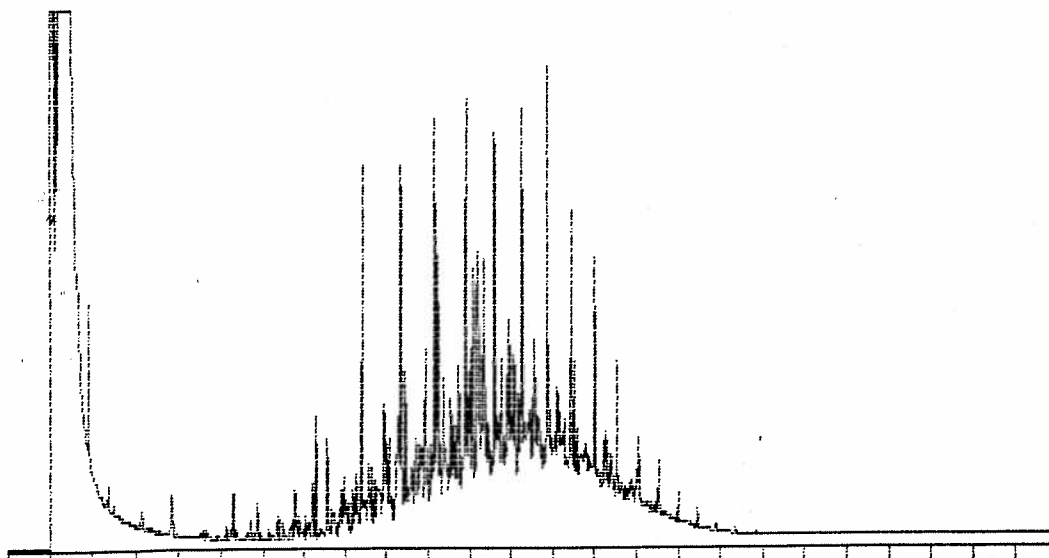
Start Time= 0.02 Stop Time = 25.02 Min. Scale= 4976 Max. Scale= 104976



AREA = 3238671

Diesel. 3950 = 467372 + 3238671 = 3706043

Fuel. TOT : 3238671



[Interface 6] 0-25 Min Scale: 100 Mu
 DIESEL 4 Processed: 12-02-1993 02:16:12, segment 15, cycle 15
 RAW DATA SAVED IN FILE L:SM01-15.PTS

***** AREA PERCENT REPORT *****

***** 12-02-1993 02:17:32 Version 5.1.5 *****
 * Sample Name: DIESEL 400 PPM SV9310038 Data File: L:SM01-15 *
 * Date: 12-02-1993 02:16:12 Method: DIESEL *
 * Interface: 6 Cycle#: 15 Operator JF Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	3607424	53.837800	980457	100.000	3.7	
2	1.917	24121	0.3600	1	27880	0.669	0.9
3	2.367	7878	0.1176	1	4117	0.218	1.9
4	3.117	7556	0.1128	1	3095	0.209	2.4
5	3.800	19191	0.2864	1	7210	0.532	2.7
6	4.583	5422	0.0809	1	1591	0.150	3.4
7	4.667	3359	0.0501	1	1600	0.093	2.1
8	5.133	4029	0.0601	1	2021	0.112	2.0
9	5.283	26628	0.3974	1	8193	0.738	3.3
10	5.850	13303	0.1985	1	6398	0.369	2.1
11	6.150	4576	0.0683	1	2014	0.127	2.3
12	6.383	10816	0.1614	1	4061	0.300	2.7
13	6.700	15812	0.2360	1	3218	0.438	4.9
14	6.767	49749	0.7425	1	8814	1.379	5.6
15	7.283	36854	0.5500	1	21886	1.022	1.7
16	7.550	53524	0.7988	1	17428	1.484	3.1
	7.950	59598	0.8894	1	9449	1.652	6.3
	8.383	213721	3.1896	1	66515	5.924	3.2

20	9.300	200288	2.9891	1	65508	5.552	3.2
21	9.433	65762	0.9814	1	24004	1.823	2.7
22	9.683	87907	1.3119	1	11989	2.437	7.3
23	9.917	72494	1.0819	1	27515	2.010	2.6
24	10.200	77553	1.1574	1	39690	2.150	2.0
25	10.350	70844	1.0573	1	21252	1.964	3.3
26	10.717	123525	1.8435	1	22606	3.424	5.5
27	10.883	245043	3.6571	1	68629	6.793	3.6
28	11.167	125848	1.8782	1	38679	3.489	3.3
29	11.567	251237	3.7495	1	59204	6.964	4.2
30	11.933	170837	2.5496	1	27166	4.736	6.3
31	12.233	222271	3.3172	1	66294	6.161	3.4
32	12.850	241058	3.5976	1	71138	6.682	3.4
33	13.433	112774	1.6830	1	47439	3.126	2.4
34	13.583	49380	0.7369	1	7926	1.369	6.2
35	14.000	64472	0.9622	1	39210	1.787	1.6
36	14.267	73349	1.0947	1	10718	2.033	6.8
37	14.533	118179	1.7637	1	24843	3.276	4.8
38	15.533	25116	0.3748	1	9901	0.696	2.5
39	16.000	7607	0.1135	1	5392	0.211	1.4
40	16.450	5006	0.0747	1	3376	0.139	1.5
41	16.883	3102	0.0463	1	1355	0.086	2.3

Total Area: 6700547 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-02-1993 02:17:40 Version 5.1.5 *****

* Sample Name: DIESEL 400 PPM SU9310038 Data File: L:SM01-15 *

* Date: 12-02-1993 02:16:12 Method: DIESEL 11-23-1993 17:55:13 # 579 *

* Interface: 6 Cycle#: 15 Operator JP Channel#: 0 Vial#: N.A. *

* Sorting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *

* Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

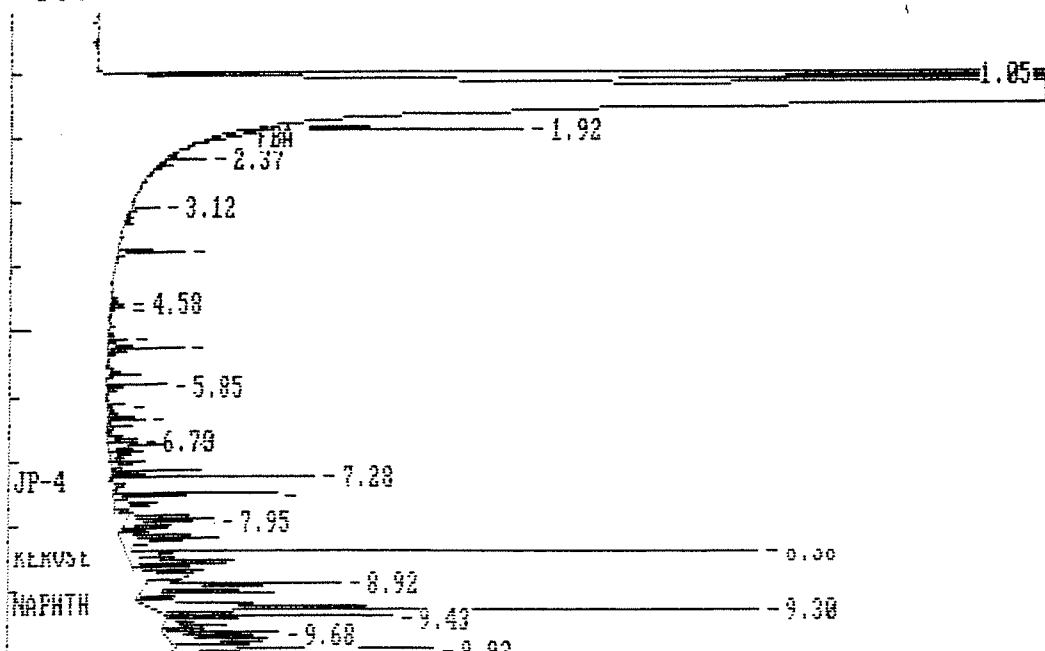
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		360.7424	55.4271%	3607424	980457	3.7 0V			1.0000E-04
2	1.917		2.4121	0.3706%	24121	27880	0.9 1			1.0000E-04
3	2.367		0.7878	0.1210%	7878	4117	1.9 1			1.0000E-04
4	3.117		0.7556	0.1161%	7556	3095	2.4 1			1.0000E-04
5	3.800		1.9191	0.2949%	19191	7210	2.7 1			1.0000E-04
6	4.583		0.5422	0.0833%	5422	1591	3.4 1			1.0000E-04
7	4.667		0.3359	0.0516%	3359	1600	2.1 1			1.0000E-04
8	5.133		0.4029	0.0619%	4029	2021	2.0 1			1.0000E-04
9	5.283		2.6628	0.4091%	26628	8193	3.3 1			1.0000E-04
10	5.850		1.3303	0.2044%	13303	6398	2.1 1			1.0000E-04
11	6.150		0.4576	0.0703%	4576	2014	2.3 1			1.0000E-04

13	6.700	1.5811	0.2429%	15812	3218	4.9	1	1.0000E-04
14	6.767	4.9749	0.7644%	49749	8814	5.6	1	1.0000E-04
15	7.283 JP-4	2.0814	0.3198%	36854	21886	1.7	1	5.6477E-05
16	7.550	5.3524	0.8224%	53524	17428	3.1	1	1.0000E-04
17	7.950	5.9598	0.9157%	59598	9449	6.3	1	1.0000E-04
18	9.383 KEROSENE	10.2266	1.5713%	213721	66515	3.2	1	4.7850E-05
	.917	12.3340	1.8951%	123340	20696	6.0	1	1.0000E-04
20	9.300	20.0287	3.0774%	200288	63308	3.2	1	1.0000E-04
21	9.433	6.5762	1.0104%	65762	24004	2.7	1	1.0000E-04
22	9.683	8.7907	1.3507%	87907	11989	7.3	1	1.0000E-04
23	9.917	7.2494	1.1139%	72494	27515	2.6	1	1.0000E-04
24	10.200	7.7553	1.1916%	77553	39690	2.0	1	1.0000E-04
25	10.350	7.0843	1.0885%	70844	21252	3.3	1	1.0000E-04
26	10.717 DIESEL	5.8880	0.9047%	123525	22606	5.5	1	4.7667E-05
27	10.883	24.5043	3.7650%	245043	68629	3.6	1	1.0000E-04
28	11.167	12.5848	1.9336%	125848	38679	3.3	1	1.0000E-04
29	11.567	25.1237	3.8602%	251237	59204	4.2	1	1.0000E-04
30	11.933	17.0837	2.6249%	170837	27166	6.3	1	1.0000E-04
31	12.233	22.2271	3.4151%	222271	66294	3.4	1	1.0000E-04
32	12.850	24.1057	3.7038%	241058	71138	3.4	1	1.0000E-04
33	13.433	11.2773	1.7327%	112774	47439	2.4	1	1.0000E-04
34	13.583	4.9379	0.7587%	49380	7926	6.2	1	1.0000E-04
35	14.000	6.4472	0.9906%	64472	39210	1.6	1	1.0000E-04
36	14.267	7.3349	1.1270%	73349	10718	6.8	1	1.0000E-04
37	14.533	11.8179	1.8158%	118179	24843	4.8	1	1.0000E-04
38	15.533	2.5115	0.3859%	25116	9901	2.5	1	1.0000E-04
39	16.000	0.7607	0.1169%	7607	5392	1.4	1	1.0000E-04
40	16.450	0.5005	0.0769%	5006	3376	1.5	1	1.0000E-04
41	16.883	0.3102	0.0477%	3102	1355	2.3	1	1.0000E-04

TOTAL AMOUNT = 650.8406

PEAKS NOT FOUND IN THIS RUN
NAME ADJUSTED RET.TIME. REFERENCE PEAK
NAPHTHALENE 9.20 NAPHTHALENE

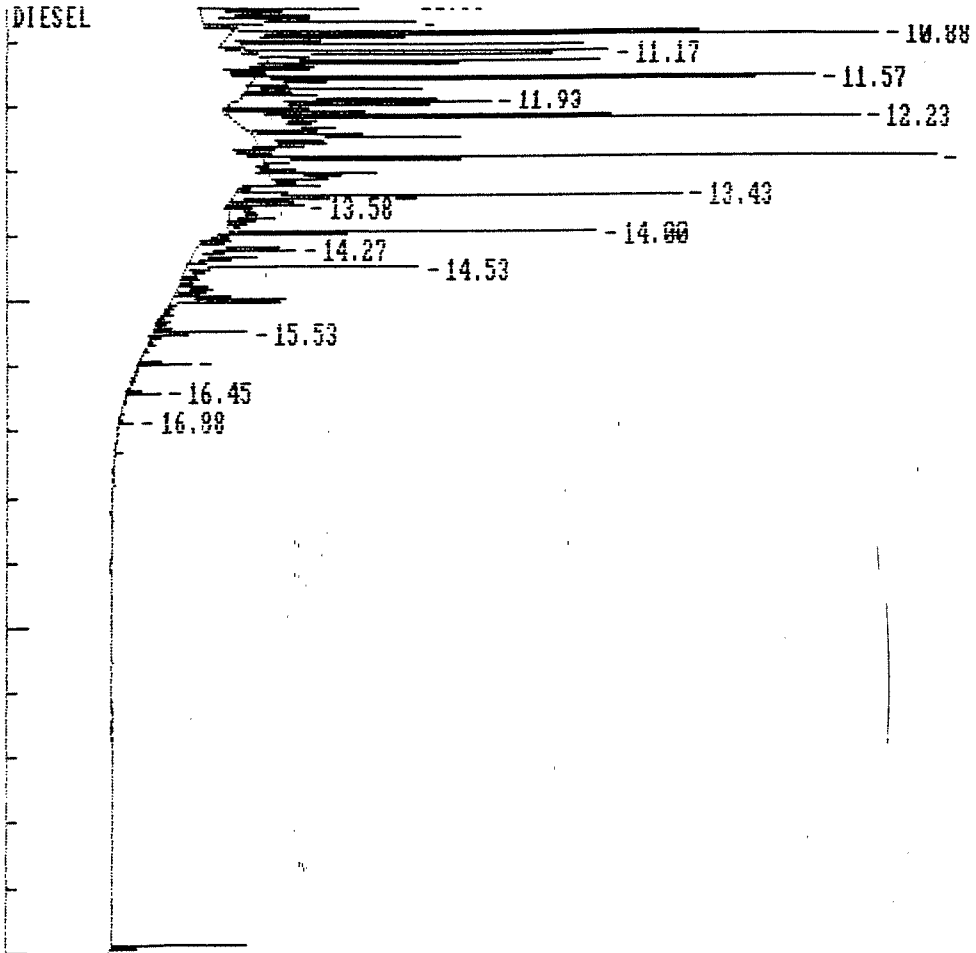
Data File = L:SM01-15.PTS Printed on 12-02-1993 at 02:18:06
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



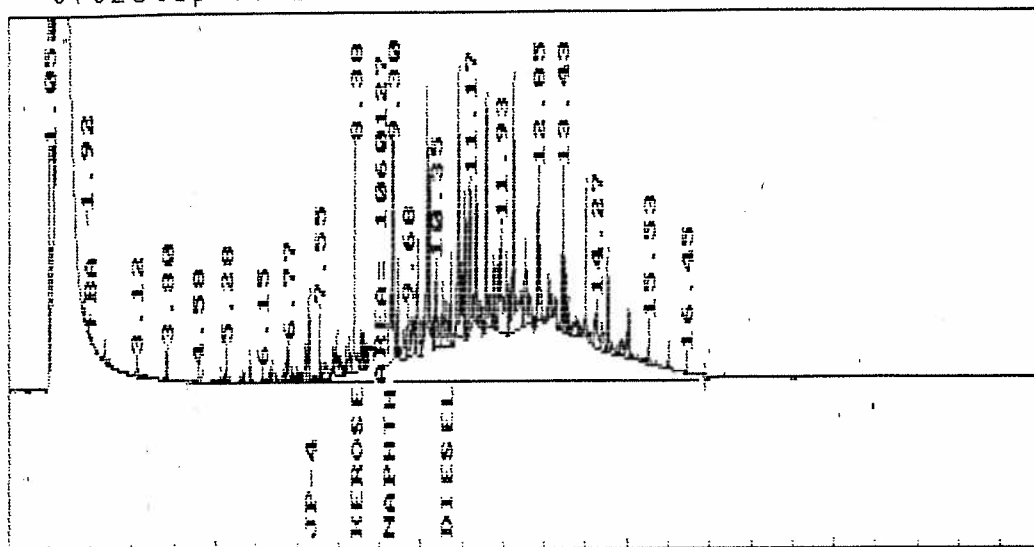
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20

DIESEL



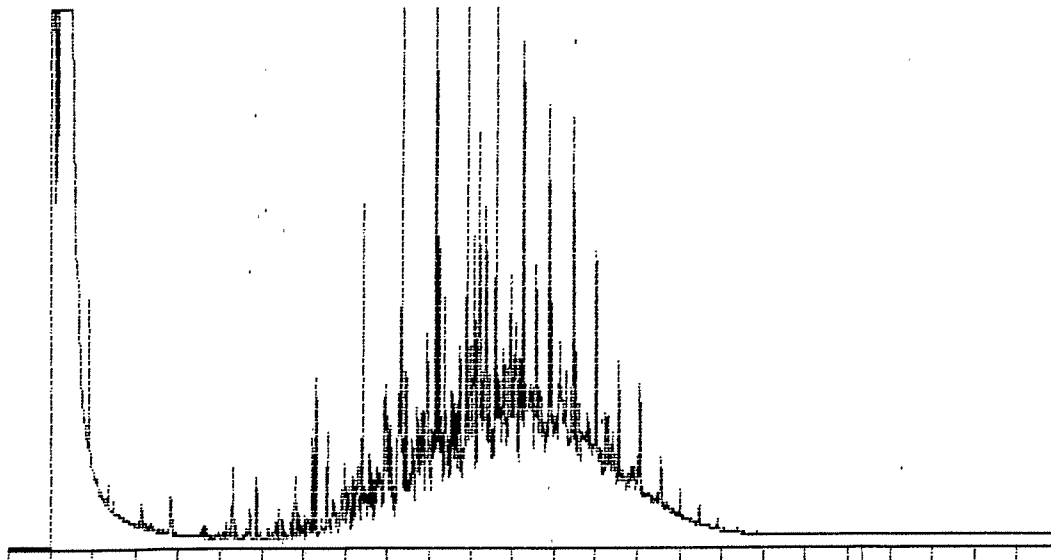
STOP TIME= 9.150 STOP HEIGHT= 6232
 AREA = 1060127
 START TIME= 9.350 START HEIGHT= 6232
 STOP TIME= 16.883 STOP HEIGHT= 6232
 Plot of data file: L:SM01-15.PTS
 Date: 12-02-1993 Time: 11:36:18
 File Name: DIESEL 400 PPM SU931
 Start Time= 0.02 Stop Time = 25.02 Min. Scale= 4884 Max. Scale= 104884



AREA = 6844351

Diesel 3550 : 1060127 + 6844351 = 7904478

Fuel-TOT : 6844351



[Interface 6] 0-25 Min Scale: 100 Mu
 DIESEL 5 Processed: 12-02-1993 02:51:29, segment 16, cycle 16
 RAW DATA SAVED IN FILE L:SM01-16.FTS

***** AREA PERCENT REPORT *****

***** 12-02-1993 02:52:49 Version 5.1.5 *****
 * Sample Name: DIESEL 500 PPM SU9310038 Data File: L:SM01-16 *
 * Date: 12-02-1993 02:51:29 Method: DIESEL *
 * Interface: 6 Cycle#: 16 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	3994609	49.541000	0	979459	100.000	4.1
2	1.917	24754	0.3070	1	28321	0.620	0.9
3	2.367	7892	0.0979	1	3761	0.198	2.1
4	3.133	9242	0.1146	1	4179	0.231	2.2
5	3.350	3288	0.0408	1	1315	0.082	2.5
6	3.800	20651	0.2561	1	6525	0.517	3.2
7	4.667	10305	0.1278	1	2274	0.258	4.5
8	5.150	6712	0.0832	1	2992	0.168	2.2
9	5.300	25078	0.3110	1	12881	0.628	1.9
10	5.383	4739	0.0588	1	2015	0.119	2.4
11	5.717	6474	0.0803	1	4789	0.162	1.4
12	5.867	16636	0.2063	1	11556	0.416	1.4
13	6.400	13861	0.1719	1	5131	0.347	2.7
15	6.783	58642	0.7273	1	11313	1.468	5.2
16	7.200	23647	0.2933	1	17665	0.592	1.3
17	7.283	44829	0.5560	1	29163	1.122	1.5
	7.567	67574	0.8381	1	18473	1.692	3.7
	7.950	77289	0.9585	1	11219	1.935	6.9

21	8.383	243192	3.0161	1	57057	6.088	4.3
22	8.933	151446	1.8782	1	22966	3.791	6.6
23	9.317	295576	3.6657	1	104301	7.399	2.8
24	9.583	35049	0.4347	1	10619	0.877	3.3
25	9.700	118145	1.4652	1	16386	2.958	7.2
26	9.933	91533	1.1352	1	28838	2.291	3.2
27	10.133	450944	5.5926	1	93541	11.289	4.8
28	10.883	310567	3.8516	1	95709	7.775	3.2
29	11.167	368353	4.5683	1	61586	9.221	6.0
30	11.583	199260	2.4712	1	106892	4.988	1.9
31	11.767	46117	0.5719	1	17434	1.154	2.6
32	12.233	289172	3.5863	1	69571	7.239	4.2
33	12.417	38522	0.4777	1	8514	0.964	4.5
34	12.550	157431	1.9524	1	33787	3.941	4.7
35	12.867	175121	2.1718	1	61564	4.384	2.8
36	13.117	107160	1.3290	1	17300	2.683	6.2
37	13.450	164907	2.0452	1	61540	4.128	2.7
38	13.800	60968	0.7561	1	8004	1.526	7.6
39	14.000	84136	1.0435	1	37288	2.106	2.3
40	14.533	132764	1.6465	1	21903	3.324	6.1
41	15.050	82087	1.0180	1	20024	2.055	4.1
42	15.367	3555	0.0441	1	1666	0.089	2.1
43	16.017	11070	0.1373	1	5297	0.277	2.1
44	16.467	6284	0.0779	1	3346	0.157	1.9
45	16.900	4042	0.0501	1	2286	0.101	1.8

Total Area: 8063238 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

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** ***** 12-02-1993 02:52:58 Version 5.1.5 *****
Sample Name: DIESEL 500 PPM SU9310038 Data File: L:SM01-16 *
Date: 12-02-1993 02:51:29 Method: DIESEL 11-23-1993 17:55:13 # 579 *
Interface: 6 Cycle#: 16 Operator JP Channel#: 0 Vial#: N.A. *
Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *
*****
Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
Solvent Description: *
Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
Detector 0: Detector 1: *
Misc. Information: 536-25 INITIAL CALIBRATION *
*****
Starting Delay: 0.00 Ending retention time: 25.00
Area reject: 2000 One sample per 1.000 sec.
Amount injected: 1.00 Dilution factor: 1.00
Sample Weight: 1.00000

```

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		399.4609	51.5143%	3994609	979459	4.1	0V		1.0000E-04
2	1.917		2.4754	0.3192%	24754	28321	0.9	1		1.0000E-04
3	2.367		0.7892	0.1018%	7892	3761	2.1	1		1.0000E-04
4	3.133		0.9242	0.1192%	9242	4179	2.2	1		1.0000E-04
5	3.350		0.3288	0.0424%	3288	1315	2.5	1		1.0000E-04
6	3.800		2.0651	0.2663%	20651	6525	3.2	1		1.0000E-04
	4.667		1.0305	0.1329%	10305	2274	4.5	1		1.0000E-04
	5.150		0.6712	0.0866%	6712	2992	2.2	1		1.0000E-04

10	5.383	0.4739	0.0611%	4739	2015	2.4	1	1.0000E-04
11	5.717	0.6474	0.0835%	6474	4789	1.4	1	1.0000E-04
12	5.867	1.6636	0.2145%	16636	11556	1.4	1	1.0000E-04
13	6.400	1.3860	0.1787%	13861	5131	2.7	1	1.0000E-04
15	6.783	5.8642	0.7562%	58642	11313	5.2	1	1.0000E-04
16	7.200	2.3647	0.3050%	23647	17665	1.3	1	1.0000E-04
18	7.283 JP-4	2.5318	0.3265%	44829	29163	1.5	1	0 - .6366 5.6477E-05
19	7.567	6.7574	0.8714%	67574	18473	3.7	1	1.0000E-04
19	7.950	7.7289	0.9967%	77289	11219	6.9	1	1.0000E-04
20	8.183	1.9617	0.2530%	19617	8332	2.4	1	1.0000E-04
21	8.383 KEROSENE	11.6368	1.5007%	243192	57057	4.3	1	0 - .5535 4.7850E-05
22	8.933	15.1446	1.9530%	151446	22966	6.6	1	1.0000E-04
23	9.317	29.5576	3.8117%	295576	104301	2.8	1	1.0000E-04
24	9.583	3.5049	0.4520%	35049	10619	3.3	1	1.0000E-04
25	9.700	11.8145	1.5236%	118145	16386	7.2	1	1.0000E-04
26	9.933	9.1533	1.1804%	91533	28838	3.2	1	1.0000E-04
27	10.133	45.0944	5.8154%	450944	93541	4.8	1	1.0000E-04
28	10.883 DIESEL	14.8037	1.9091%	310567	95709	3.2	1	0 2.672 4.7667E-05
29	11.167	36.8353	4.7503%	368353	61586	6.0	1	1.0000E-04
30	11.583	19.9260	2.5696%	199260	106892	1.9	1	1.0000E-04
31	11.767	4.6117	0.5947%	46117	17434	2.6	1	1.0000E-04
32	12.233	28.9172	3.7291%	289172	69571	4.2	1	1.0000E-04
33	12.417	3.8522	0.4968%	38522	8514	4.5	1	1.0000E-04
34	12.550	15.7430	2.0302%	157431	33787	4.7	1	1.0000E-04
35	12.867	17.5121	2.2584%	175121	61564	2.8	1	1.0000E-04
36	13.117	10.7160	1.3819%	107160	17300	6.2	1	1.0000E-04
37	13.450	16.4907	2.1266%	164907	61540	2.7	1	1.0000E-04
38	13.800	6.0968	0.7862%	60968	8004	7.6	1	1.0000E-04
39	14.000	8.4136	1.0850%	84136	37288	2.3	1	1.0000E-04
40	14.533	13.2764	1.7121%	132764	21903	6.1	1	1.0000E-04
41	15.050	8.2087	1.0586%	82087	20024	4.1	1	1.0000E-04
42	16.367	0.3555	0.0458%	3555	1666	2.1	1	1.0000E-04
43	16.017	1.1069	0.1428%	11070	5297	2.1	1	1.0000E-04
44	16.467	0.6284	0.0810%	6284	3346	1.9	1	1.0000E-04
45	16.900	0.4042	0.0521%	4042	2286	1.8	1	1.0000E-04

TOTAL AMOUNT = 775.4373

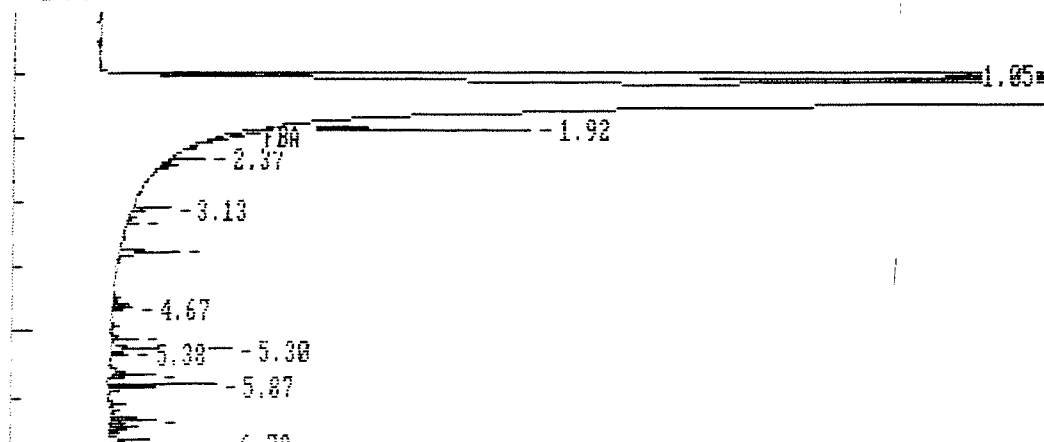
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
NAPHTHALENE	9.20	NAPHTHALENE

Data File = L:SM01-16.PTS Printed on 12-02-1993 at 02:53:25

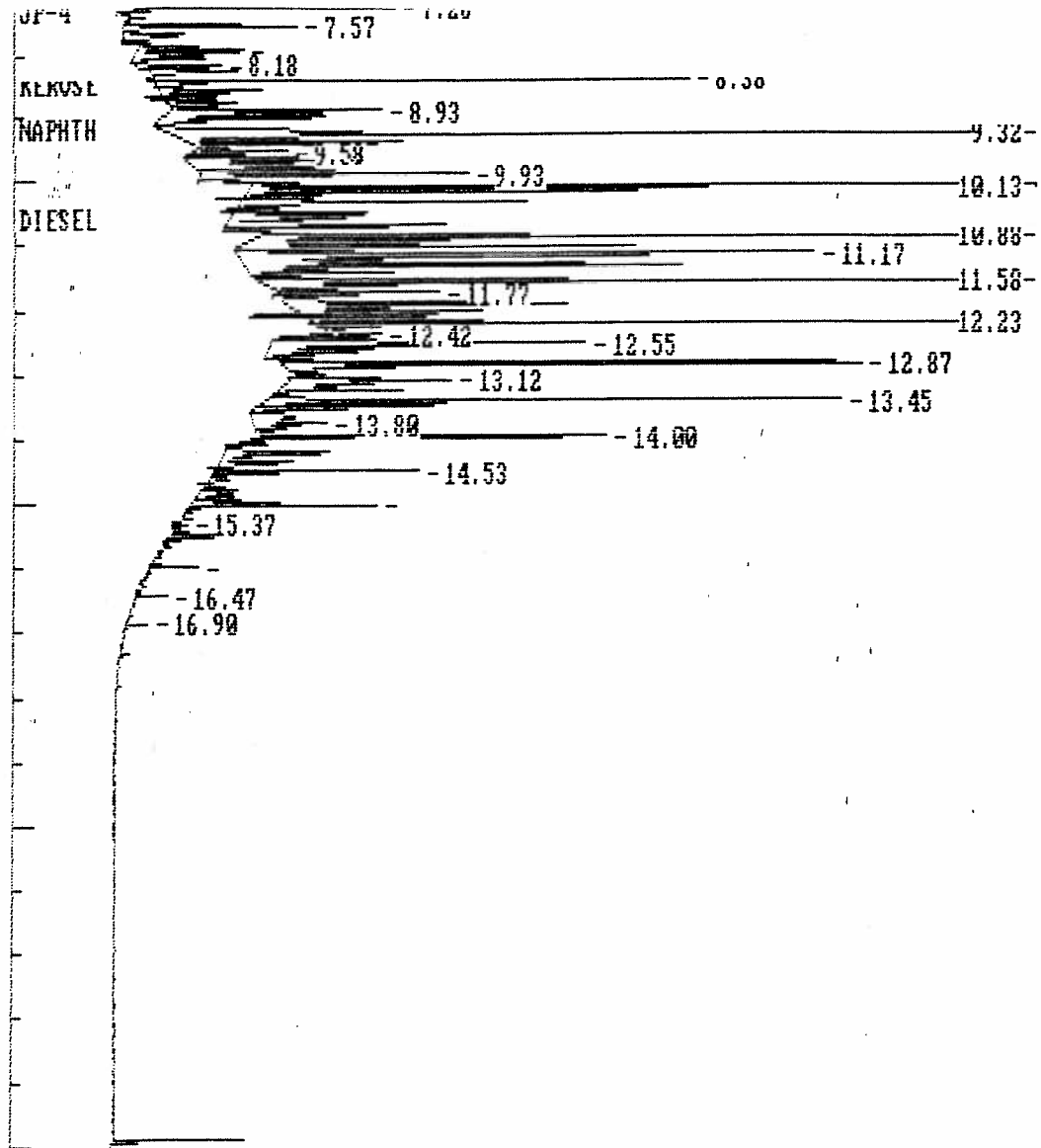
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

Full Range: 100 millivolts

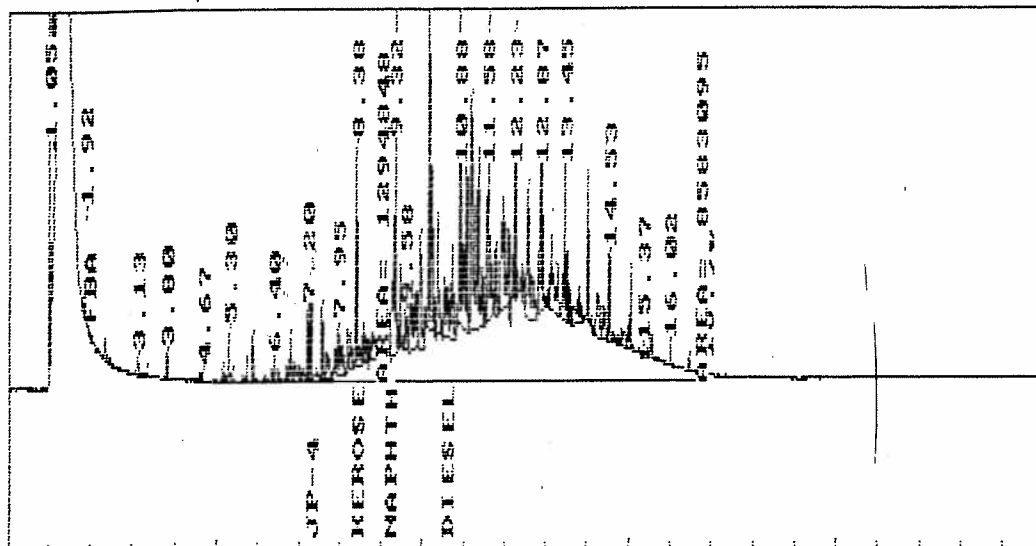


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25

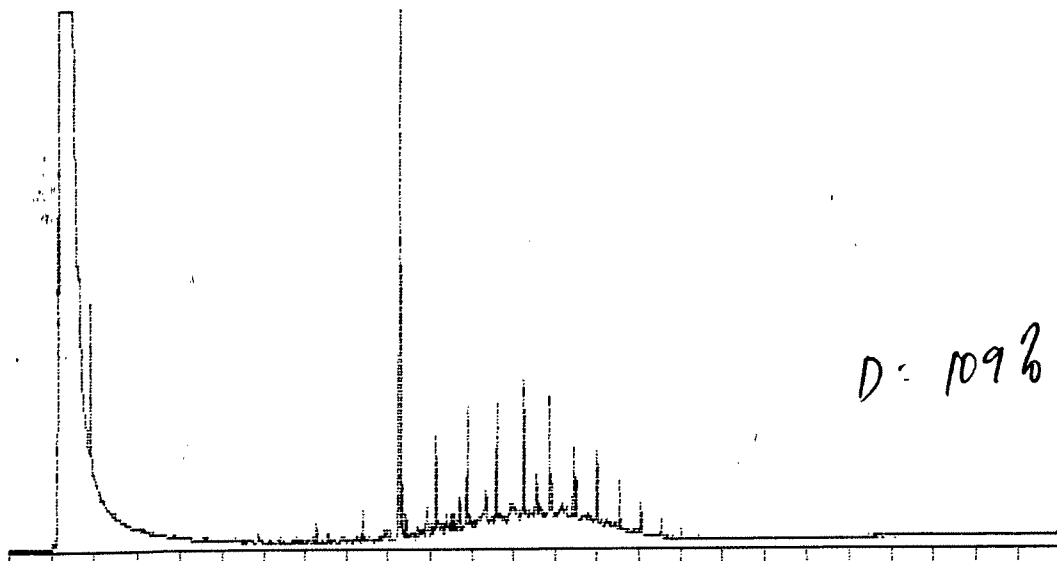


STOP TIME= 9.150 STOP HEIGHT= 6276
 AREA = 1294848
 START TIME= 9.350 START HEIGHT= 6276
 STOP TIME= 16.900 STOP HEIGHT= 6276
 AREA = 8583095
 Plot of data file: L:SM01-16.PTS
 Date: 12-02-1993 Time: 11:37:51
 Sample Name: DIESEL 500 PPM SU931
 Start Time= 0.02 Stop Time = 25.02 Min. Scale= 4928 Max. Scale= 104928



Diesel-3550 = 1294848 + 8583095 = 9877943

Fuel TDT = 8583095



[Interface 6] 0-25 Min Scale: 100 Mv
 CV DIESEL/ Processed: 12-02-1993 09:19:31, segment 27, cycle 27
 RAW DATA SAVED IN FILE L:SM01-27.PTS

***** AREA PERCENT REPORT *****

***** 12-02-1993 09:20:52 Version 5.1.5 *****

* Sample Name: CV DIESEL/NAPH 100/10PPM SU9312010 Data File: L:SM01-27 *

* Date: 12-02-1993 09:19:31 Method: DIESEL *

* Interface: 6 Cycle#: 27 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *

Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.217	15903069	95.369000	0	993815	100.000	16.0
2	5.867	3186	0.0191	1	1579	0.020	2.0
3	6.783	4687	0.0281	1	1158	0.029	4.0
4	7.283	5811	0.0348	1	3280	0.037	1.8
5	7.550	4156	0.0249	1	1785	0.026	2.3
6	8.383	15335	0.0920	1	5786	0.096	2.7
7	8.983	12141	0.0728	1	1994	0.076	6.1
8	9.250	261054	1.5655	1	160128	1.642	1.6
9	9.433	6024	0.0361	1	4415	0.038	1.4
10	9.583	3072	0.0184	1	1053	0.019	2.9
11	9.917	27514	0.1650	1	5067	0.173	5.4
12	10.133	27249	0.1634	1	17407	0.171	1.6
13	10.383	9007	0.0540	1	3001	0.057	3.0
14	10.717	25544	0.1532	1	6182	0.161	4.1
15	10.883	37819	0.2268	1	21849	0.238	1.7
	11.333	32302	0.1937	1	5863	0.203	5.5
	11.500	2075	0.0124	1	1224	0.013	1.7

19	12.000	28307	0.1698	1	2862	0.178	9.9
20	12.233	41585	0.2494	1	24771	0.261	1.7
21	12.850	74309	0.4456	1	21902	0.467	3.4
22	13.167	14163	0.0849	1	1905	0.089	7.4
23	13.433	35018	0.2100	1	12565	0.220	2.8
24	13.800	4034	0.0242	1	1140	0.025	3.5
25	14.000	20970	0.1258	1	12774	0.132	1.6
26	14.533	13380	0.0802	1	8755	0.084	1.5
27	15.050	7617	0.0457	1	5394	0.048	1.4
28	15.533	4197	0.0252	1	2970	0.026	1.4
29	16.000	2422	0.0145	1	1485	0.015	1.6

Total Area: 16675312 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-02-1993 09:20:57 Version 5.1.5 *****

* Sample Name: CV DIESEL/NAPH 100/10PPM SV9312010

Data File: L:SM01-27

* Date: 12-02-1993 09:19:31 Method: DIESEL 11-23-1993 17:55:13 # 579

* Interface: 6 Cycle#: 27 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

* Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0:

Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00

Ending retention time: 25.00

Area reject: 2000

One sample per 1.000 sec.

Amount injected: 1.00

Dilution factor: 1.00

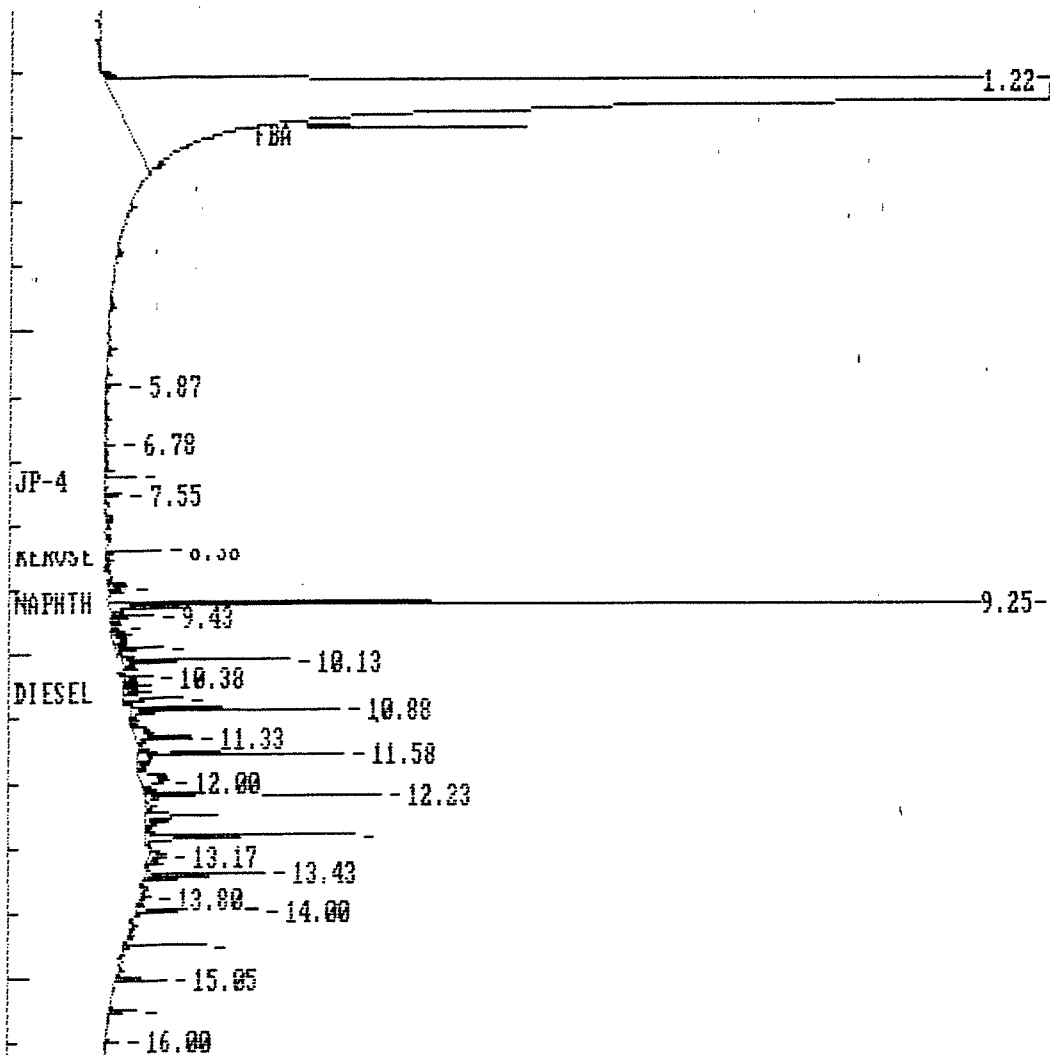
Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.217		1590.3069	96.4372%	15903069	993815	16.0 0V			1.0000E-04
2	5.867		0.3186	0.0193%	3186	1579	2.0 1			1.0000E-04
3	6.783		0.4687	0.0284%	4687	1158	4.0 1			1.0000E-04
4	7.283	JP-4	0.3282	0.0199%	5811	3280	1.8 1	0	-.6366	5.6477E-05
5	7.550		0.4156	0.0252%	4156	1785	2.3 1			1.0000E-04
6	8.383	KEROSENE	0.7338	0.0445%	15335	5786	2.7 1	0	-.5535	4.7850E-05
7	8.983		1.2141	0.0736%	12141	1994	6.1 1			1.0000E-04
8	9.250	NAPHTHALENE	10.0221	0.6077%	261054	160128	1.6 1	0	.5434	3.8391E-05
9	9.433		0.6024	0.0365%	6024	4415	1.4 1			1.0000E-04
10	9.583		0.3072	0.0186%	3072	1053	2.9 1			1.0000E-04
11	9.917		2.7514	0.1668%	27514	5067	5.4 1			1.0000E-04
12	10.133		2.7249	0.1652%	27249	17407	1.6 1			1.0000E-04
13	10.383		0.9007	0.0546%	9007	3001	3.0 1			1.0000E-04
14	10.717	DIESEL	1.2176	0.0738%	25544	6182	4.1 1	0	1.100	4.7667E-05
15	10.883		3.7819	0.2293%	37819	21849	1.7 1			1.0000E-04
16	11.333		3.2302	0.1959%	32302	5863	5.5 1			1.0000E-04
17	11.500		0.2075	0.0126%	2075	1224	1.7 1			1.0000E-04
18	11.583		4.9267	0.2988%	49268	21760	2.3 1			1.0000E-04
19	12.000		2.8306	0.1717%	28307	2862	9.9 1			1.0000E-04
20	12.233		4.1585	0.2522%	41585	24771	1.7 1			1.0000E-04
21	12.850		7.4309	0.4506%	74309	21902	3.4 1			1.0000E-04

23	13.433	3.5018	0.2124%	35018	12565	2.8 1	1.0000E-04
24	13.800	0.4034	0.0245%	4034	1140	3.5 1	1.0000E-04
25	14.000	2.0970	0.1272%	20970	12774	1.6 1	1.0000E-04
26	14.533	1.3380	0.0811%	13380	8755	1.5 1	1.0000E-04
27	15.050	0.7617	0.0462%	7617	5394	1.4 1	1.0000E-04
28	15.533	0.4196	0.0254%	4197	2970	1.4 1	1.0000E-04
	.000	0.2422	0.0147%	2422	1485	1.6 1	1.0000E-04

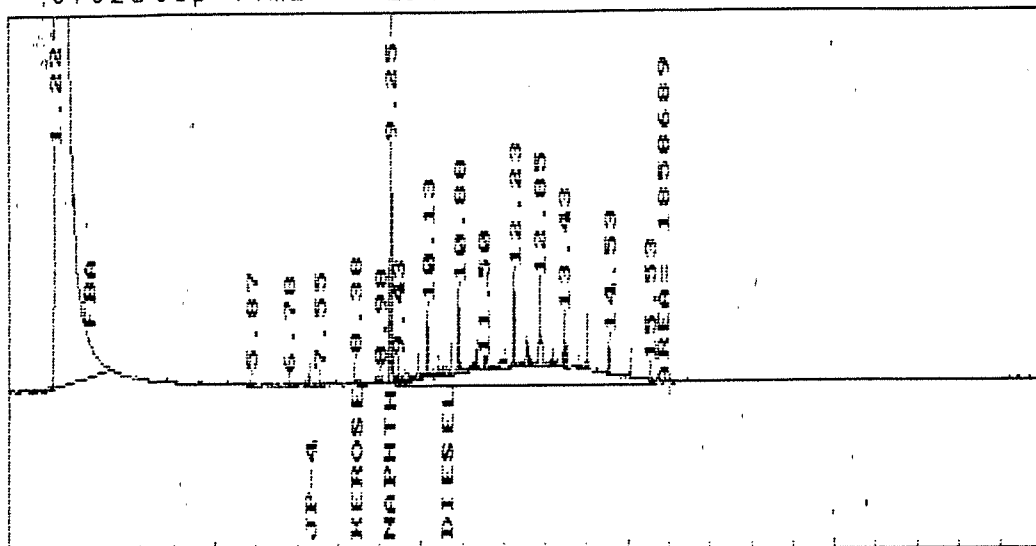
TOTAL AMOUNT = 1649.0588

Data File = L:SM01-27.PTS Printed on 12-02-1993 at 09:21:17
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



[L

STOP TIME= 16.000 STOP HEIGHT= 5377
 Plot of data file: L:SM01-27.PTS
 Date: 12-02-1993 Time: 11:39:15
 Sample Name: CV DIESEL/NAPH 100/10
 Start Time= .0.02 Stop Time = 25.02 Min. Scale= 4838 Max. Scale= 104838



AREA = 1858689

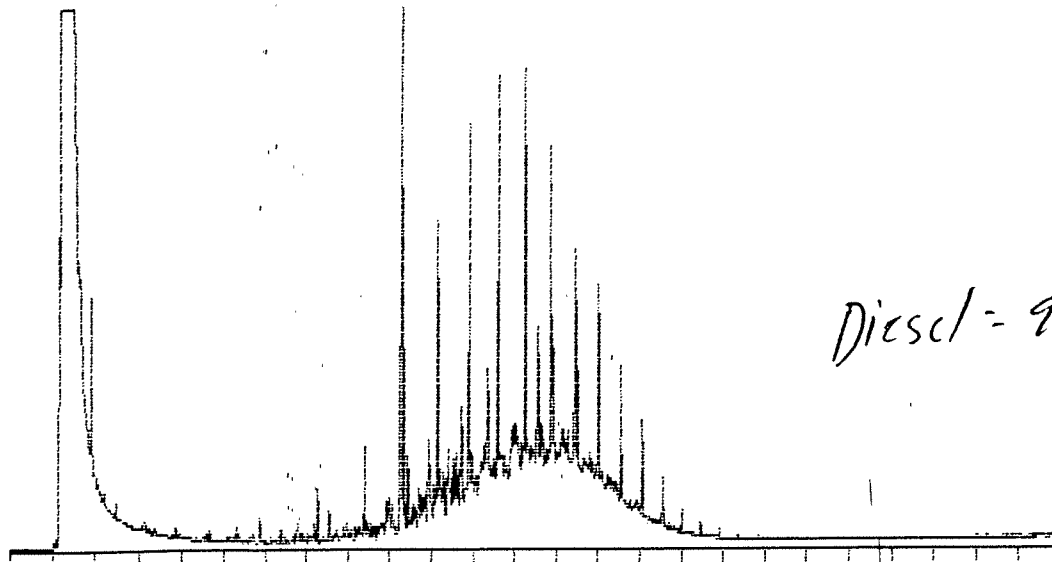
$$\text{Fuel-TOT} = 1858689 \times 5.8843 \times 10^{-5}$$

$$= 109 / 100 = 109 \%$$

003866

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SEQUENCE RECORDED IN G:FUELS.SEQ
SEQUENCE RECORDED IN G:FUELS.SEQ



[Interface 6] 0-25 Min Scale: 100 Mv
CV DIESEL/ Processed: 12-02-1993 09:54:44, segment 28, cycle 28
RAW DATA SAVED IN FILE L:SM01-28.PTS

***** AREA PERCENT REPORT *****

***** 12-02-1993 09:56:04 Version 5.1.5 *****

* Sample Name: CV DIESEL/NAPH 300/10PPM SV9312011 Data File: L:SM01-28 *

* Date: 12-02-1993 09:54:44 Method: DIESEL *

* Interface: 6 Cycle#: 28 Operator JF Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

***** Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *****

* Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

***** Starting Delay: 0.00 Run Time: 25.00 *****

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/ Height
2	1.917	34558	1.5913	1	30160	10.157	1.1
3	2.483	4270	0.1966	1	2606	1.255	1.6
4	3.117	5266	0.2425	1	1844	1.548	2.9
5	3.350	2661	0.1225	1	1151	0.782	2.3
6	3.833	3816	0.1757	1	1956	1.121	2.0
7	4.583	2299	0.1059	1	1101	0.676	2.1
8	4.667	2727	0.1256	1	1497	0.802	1.8
9	5.150	3033	0.1397	1	789	0.891	3.8
10	5.300	6175	0.2843	1	2196	1.815	2.8
11	5.717	2224	0.1024	1	1245	0.654	1.8
12	5.867	7153	0.3294	1	4691	2.102	1.5
13	6.317	2449	0.1128	1	1199	0.720	2.0
14	6.400	7350	0.3384	1	2160	2.160	3.4
	6.783	18540	0.8537	1	3443	5.449	5.4
	7.283	17565	0.8088	1	9906	5.163	1.8

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18	7.950	20708	0.9535	1	2776	6.086	7.5
19	8.383	127603	5.8757	1	16944	37.505	7.5
20	9.250	340229	15.6665	1	158381	100.000	2.1
21	9.583	15990	0.7363	1	3604	4.700	4.4
22	9.917	85702	3.9463	1	14565	25.189	5.9
23	10.133	81392	3.7479	1	51898	23.923	1.6
24	10.283	10096	0.4649	1	6510	2.967	1.6
25	10.717	133265	6.1364	1	18051	39.169	7.4
26	10.883	114646	5.2791	1	67039	33.697	1.7
27	11.067	8292	0.3818	1	3330	2.437	2.5
28	11.333	106318	4.8956	1	20737	31.249	5.1
29	11.583	151259	6.9650	1	74189	44.458	2.0
30	12.233	215389	9.9180	1	72904	63.307	3.0
31	12.400	13297	0.6123	1	3043	3.908	4.4
32	12.850	221056	10.1790	1	57907	64.973	3.8
33	13.117	59130	2.7227	1	6341	17.379	9.3
34	13.450	111088	5.1152	1	39708	32.651	2.8
35	13.650	10130	0.4665	1	2228	2.977	4.5
36	13.800	11679	0.5378	1	3417	3.433	3.4
37	14.000	75371	3.4706	1	36303	22.153	2.1
38	14.233	8129	0.3743	1	2426	2.389	3.4
39	14.533	44850	2.0652	1	24703	13.182	1.8
40	14.750	4140	0.1906	1	1528	1.217	2.7
41	15.050	27087	1.2473	1	17225	7.961	1.6
42	15.533	13445	0.6191	1	8576	3.952	1.6
43	16.000	7796	0.3590	1	4210	2.291	1.9
44	16.450	4324	0.1991	1	2385	1.271	1.8
45	16.900	2948	0.1357	1	1501	0.866	2.0

Total Area: 2171695 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-02-1993 09:56:13 Version 5.1.5 *****

* Sample Name: CV DIESEL/NAPH 300/10PPM SV9312011

Data File: L:SM01-28

* Date: 12-02-1993 09:54:44 Method: DIESEL 11-23-1993 17:55:13 # 579

* Interface: 6 Cycle#: 28 Operator JP Channel#: 0 Vial#: N.A.

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25

* Solvent Description:

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25

* Detector 0: Detector 1:

* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

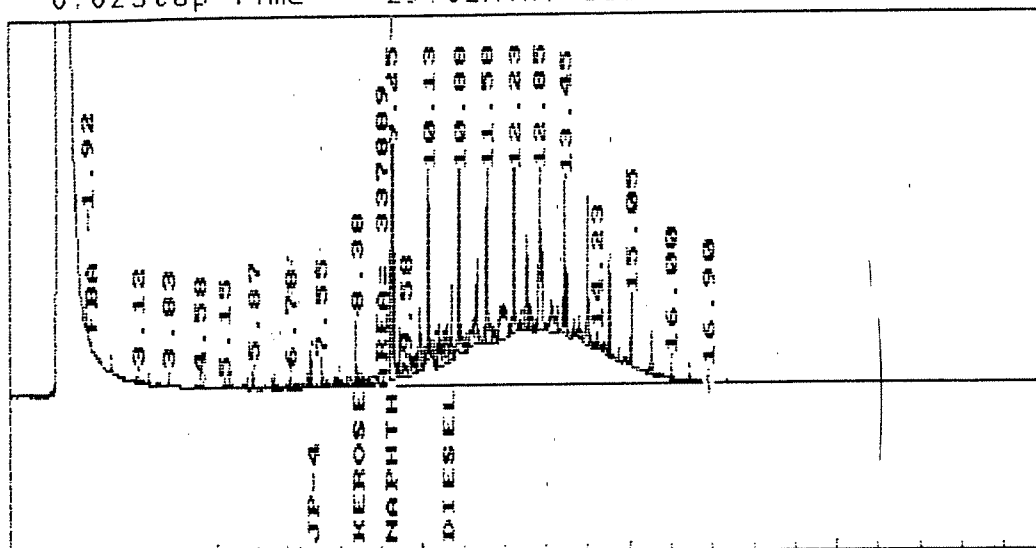
Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
2	1.917		3.4558	1.9007%	34558	30160	1.1 1			1.0000E-04
	2.483		0.4270	0.2349%	4270	2606	1.6 1			1.0000E-04
	3.117		0.5266	0.2896%	5266	1844	2.9 1			1.0000E-04
	3.350		0.2661	0.1464%	2661	1151	2.3 1			1.0000E-04

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003868

START TIME= 4.583 START HEIGHT= 6314
 STOP TIME= 9.150 STOP HEIGHT= 6314
 AREA = 337889
 START TIME= 9.350 START HEIGHT= 6314
 STOP TIME= 16.900 STOP HEIGHT= 6314
 File of data file: L:SM01-28.PTS
 Date: 12-02-1993 Time: 11:56:21
 Sample Name: CV DIESEL/NAPH 300/10
 Start Time= 0.02 Stop Time = 25.02 Min. Scale= 49661ax. Scale= 104966



AREA = 5168412

TAT

$$\text{Diesel} \cdot 3450 = 337889 + 5168412$$

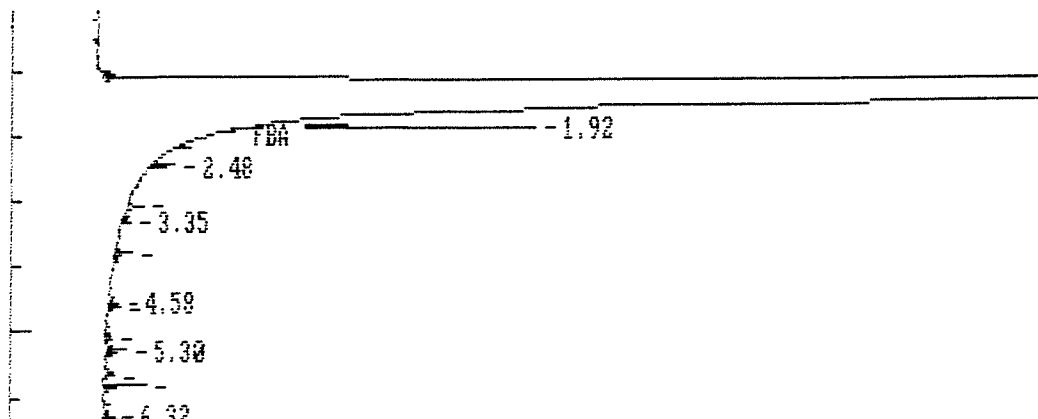
$$= 5506301 \times 5.1114 \times 10^{-5}$$

$$= 281 / 300 = 94\%$$

7	4.583	0.2299	0.1264%	2299	1101	2.1	1	1.0000E-04
8	4.667	0.2727	0.1500%	2727	1497	1.8	1	1.0000E-04
9	5.150	0.3033	0.1668%	3033	789	3.8	1	1.0000E-04
10	5.300	0.6175	0.3396%	6175	2196	2.8	1	1.0000E-04
11	5.717	0.2224	0.1223%	2224	1245	1.8	1	1.0000E-04
12	5.867	0.7152	0.3934%	7153	4691	1.5	1	1.0000E-04
	5.317	0.2449	0.1347%	2449	1199	2.0	1	1.0000E-04
	6.400	0.7350	0.4043%	7350	2160	3.4	1	1.0000E-04
15	6.783	1.8539	1.0197%	18540	3443	5.4	1	1.0000E-04
16	7.283 JP-4	0.9920	0.5456%	17565	9906	1.8	1	0 - .6366 5.6477E-05
17	7.550	2.6256	1.4441%	26256	5506	4.8	1	1.0000E-04
18	7.950	2.0708	1.1390%	20708	2776	7.5	1	1.0000E-04
19	8.383 KEROSENE	6.1058	3.3583%	127603	16944	7.5	1	0 - .5535 4.7850E-05
20	9.250 NAPHTHALENE	13.0617	7.1841%	340229	158381	2.1	1	0 .5434 3.8391E-05
21	9.583	1.5990	0.8795%	15990	3604	4.4	1	1.0000E-04
22	9.917	8.5701	4.7137%	85702	14565	5.9	1	1.0000E-04
23	10.133	8.1392	4.4766%	81392	51898	1.6	1	1.0000E-04
24	10.283	1.0096	0.5553%	10096	6510	1.6	1	1.0000E-04
25	10.717 DIESEL	6.3523	3.4938%	133265	18051	7.4	1	0 1.100 4.7667E-05
26	10.883	11.4646	6.3056%	114646	67039	1.7	1	1.0000E-04
27	11.067	0.8292	0.4561%	8292	3330	2.5	1	1.0000E-04
28	11.333	10.6318	5.8476%	106318	20737	5.1	1	1.0000E-04
29	11.583	15.1258	8.3194%	151259	74189	2.0	1	1.0000E-04
30	12.233	21.5389	11.8466%	215389	72904	3.0	1	1.0000E-04
31	12.400	1.3297	0.7313%	13297	3043	4.4	1	1.0000E-04
32	12.850	22.1056	12.1583%	221056	57907	3.8	1	1.0000E-04
33	13.117	5.9130	3.2522%	59130	6341	9.3	1	1.0000E-04
34	13.450	11.1087	6.1099%	111088	39708	2.8	1	1.0000E-04
35	13.650	1.0130	0.5572%	10130	2228	4.5	1	1.0000E-04
36	13.800	1.1679	0.6423%	11679	3417	3.4	1	1.0000E-04
37	14.000	7.5371	4.1455%	75371	36303	2.1	1	1.0000E-04
38	4.233	0.8129	0.4471%	8129	2426	3.4	1	1.0000E-04
39	14.533	4.4850	2.4668%	44850	24703	1.8	1	1.0000E-04
40	14.750	0.4140	0.2277%	4140	1528	2.7	1	1.0000E-04
41	15.050	2.7087	1.4898%	27087	17225	1.6	1	1.0000E-04
42	15.533	1.3445	0.7395%	13445	8576	1.6	1	1.0000E-04
43	16.000	0.7796	0.4288%	7796	4210	1.9	1	1.0000E-04
44	16.450	0.4324	0.2378%	4324	2385	1.8	1	1.0000E-04
45	16.900	0.2948	0.1621%	2948	1501	2.0	1	1.0000E-04

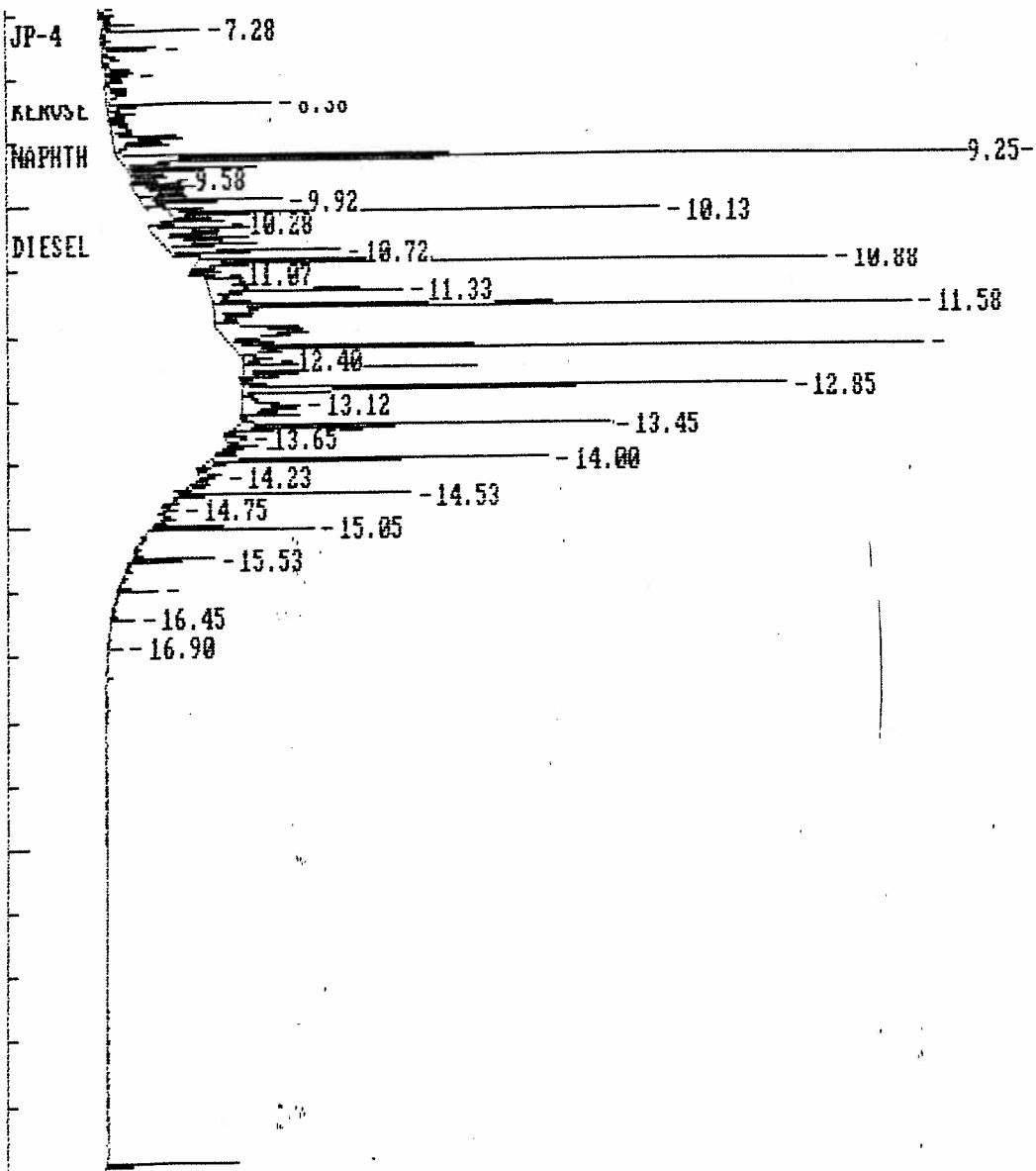
TOTAL AMOUNT = 181.8152

Data File = L:SM01-28.PTS Printed on 12-02-1993 at 09:56:39
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



003870

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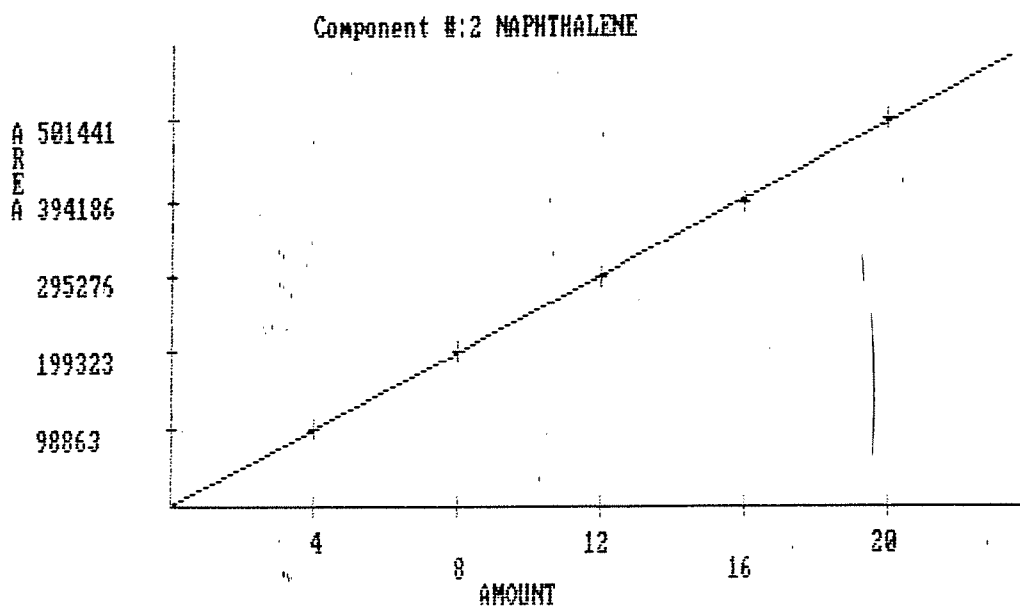


003872

Method FUELS
Sample MODIFIED 8015 FUELS
Operator JP
Run date 12-02-1993 10:11:59 version: 382
Printed on 12-02-1993 AT 10:12:21
Straight Line Fit forced through Origin.

Fuels.
Initial Calibration

12-2-93



Component 2 = NAPHTHALENE
EXTERNAL STANDARD CALIBRATION

LEVEL	AMOUNT	AREA
1	4.0000	98863
2	8.0000	199323
3	12.0000	295276
4	16.0000	394186
5	20.0000	501441

Y = SLOPE * X + INTERCEPT

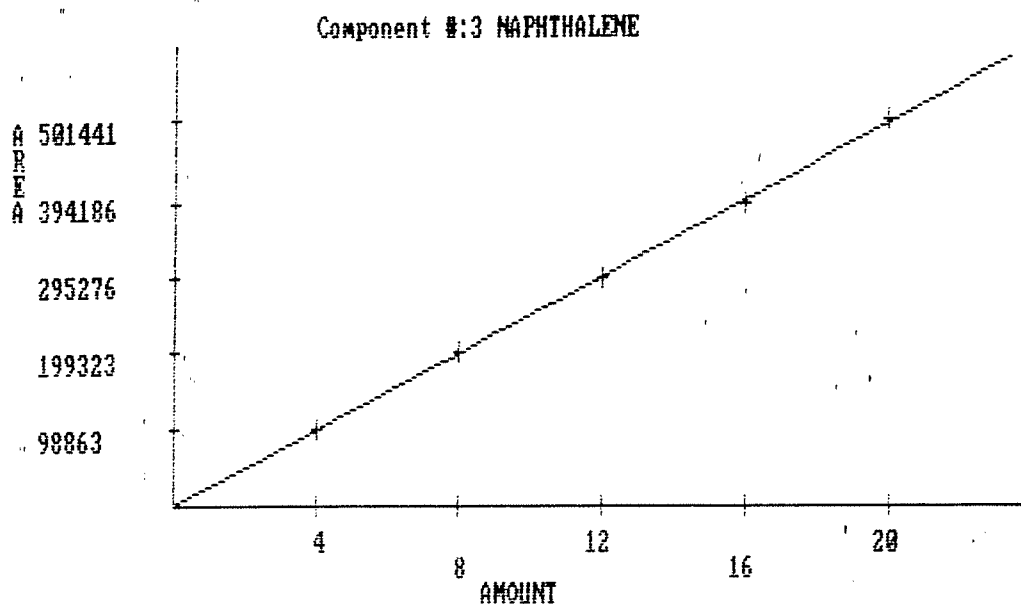
Area = 2.4851E+04 * Amount + 0.0000E+00
Amount = 4.0239E-05 * Area + 0.0000E+00
R squared = 0.9996

R = 0.999

003873

①

Method DIESEL
Sample MODIFIED 8015 FUELS
Operator JP
Run date 12-02-1993 10:13:38 version: 580
Printed on 12-02-1993 AT 10:14:01
Straight Line Fit forced through Origin.



Component 3 = NAPHTHALENE
EXTERNAL STANDARD CALIBRATION

LEVEL	AMOUNT	AREA
1	4.0000	98863
2	8.0000	199323
3	12.0000	295276
4	16.0000	394186
5	20.0000	501441

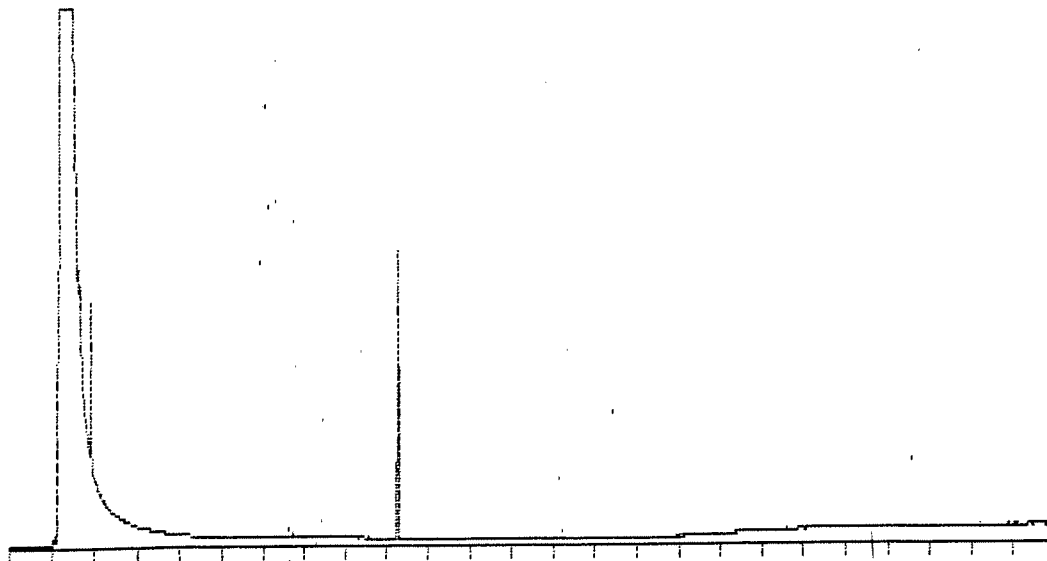
Y = SLOPE * X + INTERCEPT

Area = 2.4851E+04 * Amount + 0.0000E+00
Amount = 4.0239E-05 * Area + 0.0000E+00
R squared = 0.9996

R = 0.999

003874

(2)



[Interface 6] 0-25 Min Scale: 100 Mv
NAPHTHALENE Processed: 12-01-1993 18:38:44, segment 2, cycle 2
RAW DATA SAVED IN FILE L:SM01-2.PTS

***** AREA PERCENT REPORT *****

***** 12-01-1993 18:40:03 Version 5.1.5 *****
* Sample Name: NAPHTHALENE 4 PPM SU9312006 Data File: L:SM01-2 *
* Date: 12-01-1993 18:38:44 Method: DIESEL *
* Interface: 6 Cycle#: 2 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: Detector 1: *
* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.217	16187001	99.393000	0	994109	100.000	16.3
2	9.250	98863	0.6070	1	53081	0.611	1.9

Total Area: 16285864 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 12-01-1993 18:40:04 Version 5.1.5 *****
* Sample Name: NAPHTHALENE 4 PPM SU9312006 Data File: L:SM01-2 *
* Date: 12-01-1993 18:38:44 Method: DIESEL 11-23-1993 17:55:13 # 579 *
* Interface: 6 Cycle#: 2 Operator JP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
* Solvent Description: *
* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
* Detector 0: Detector 1: *

003875

 Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

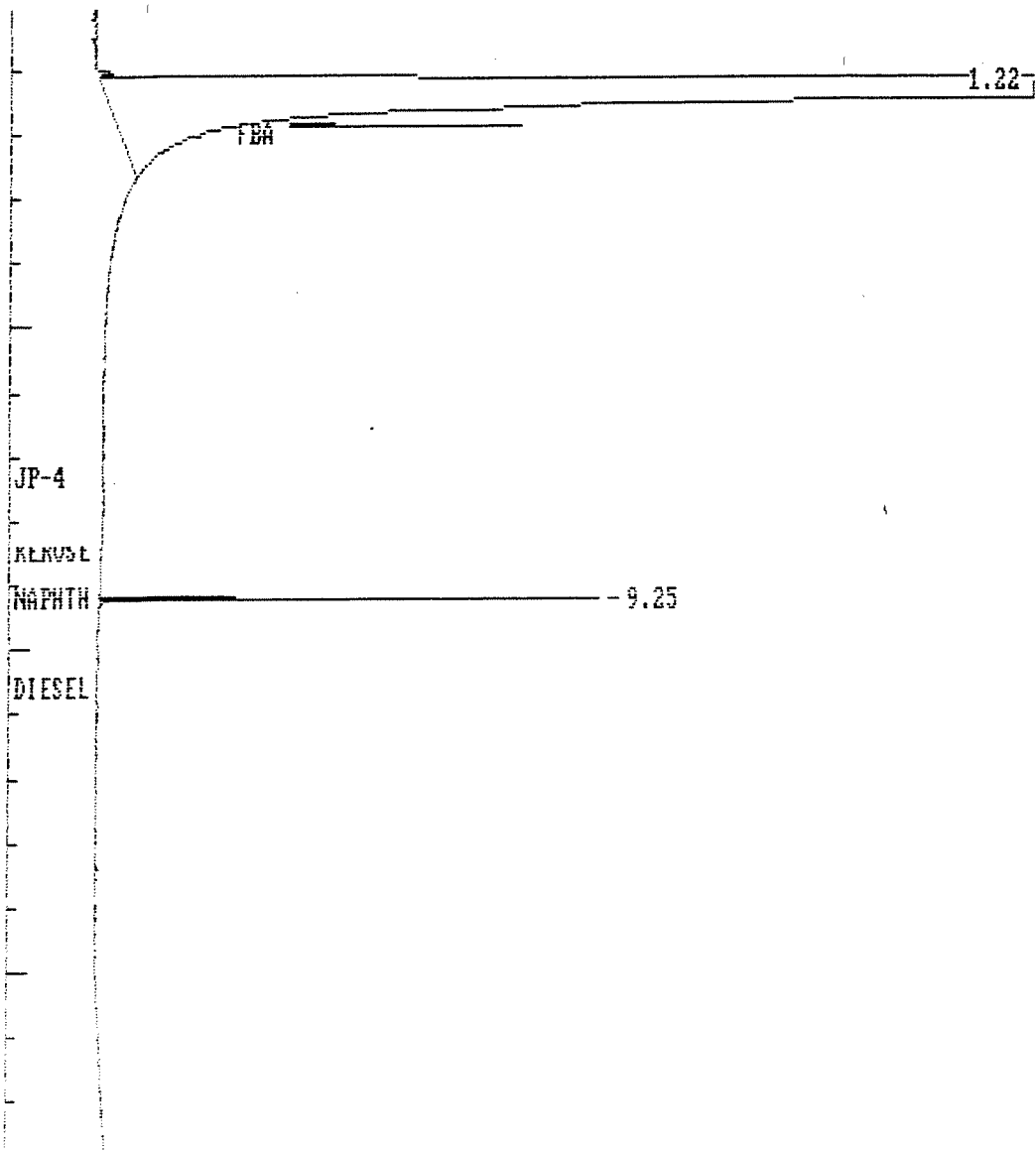
RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1 1.217		1618.7001	99.7661%	16187001	994109	16.3 0V			1.0000E-04
2 9.250	NAPHTHALENE	3.7955	0.2339%	98863	53081	1.9 1	0	.5434	3.8391E-05

TOTAL AMOUNT = 1622.4955

PEAKS NOT FOUND IN THIS RUN

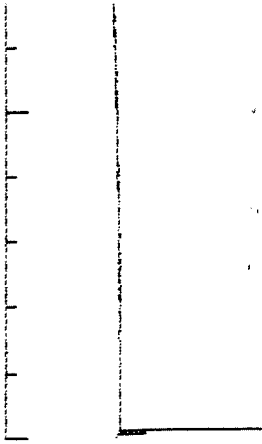
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:SM01-2.PTS Printed on 12-01-1993 at 18:40:11
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



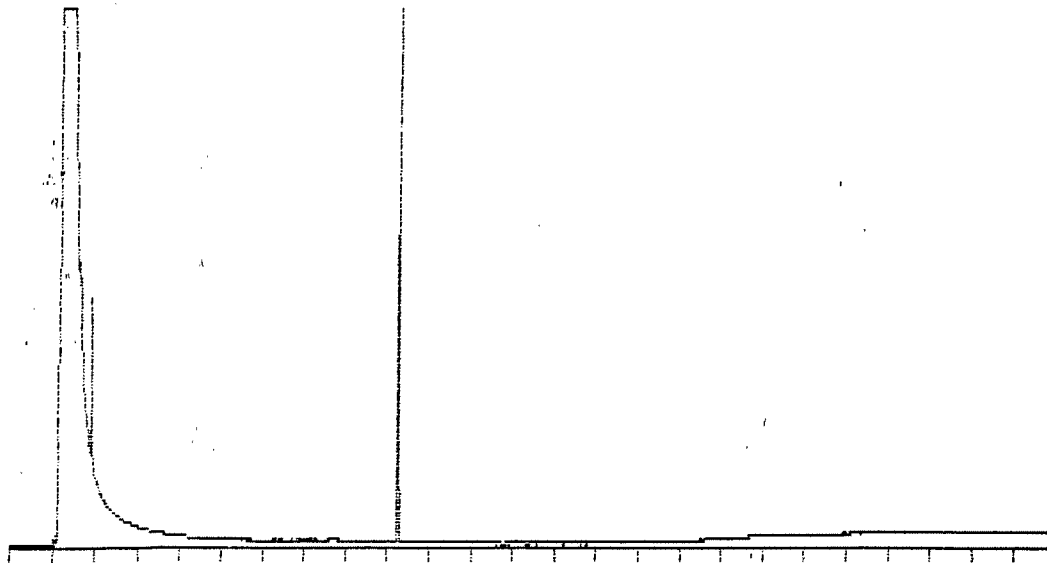
003876

(4)



003877

(5)



[Interface 6] 0-25 Min Scale: 100 Mu
 NAPHTHALENE Processed: 12-01-1993 19:13:39, segment 3, cycle 3
 RAW DATA SAVED IN FILE L:SM01-3.PTS

***** AREA PERCENT REPORT *****

***** 12-01-1993 19:14:59 Version 5.1.5 *****
 * Sample Name: NAPHTHALENE 8 PPM SU9312006 Data File: L:SM01-3 *
 * Date: 12-01-1993 19:13:39 Method: DIESEL *
 * Interface: 6 Cycle#: 3 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.100	2050	0.8706	1	1423	1.028	1.4
2	1.917	34084	14.4757	1	29943	17.100	1.1
3	9.250	199323	84.6537	1	142897	100.000	1.4

Total Area: 235457 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 12-01-1993 19:14:59 Version 5.1.5 *****
 * Sample Name: NAPHTHALENE 8 PPM SU9312006 Data File: L:SM01-3 *
 * Date: 12-01-1993 19:13:39 Method: DIESEL 11-23-1993 17:55:13 # 579 *
 * Interface: 6 Cycle#: 3 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

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6

* Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.100		0.2050	1.8197%	2050	1423	1.4 1			1.0000E-04
2	1.917		3.4084	30.2549%	34084	29943	1.1 1			1.0000E-04
3	9.250	NAPHTHALENE	7.6522	67.9254%	199323	142897	1.4 1	0	.5434	3.8391E-05

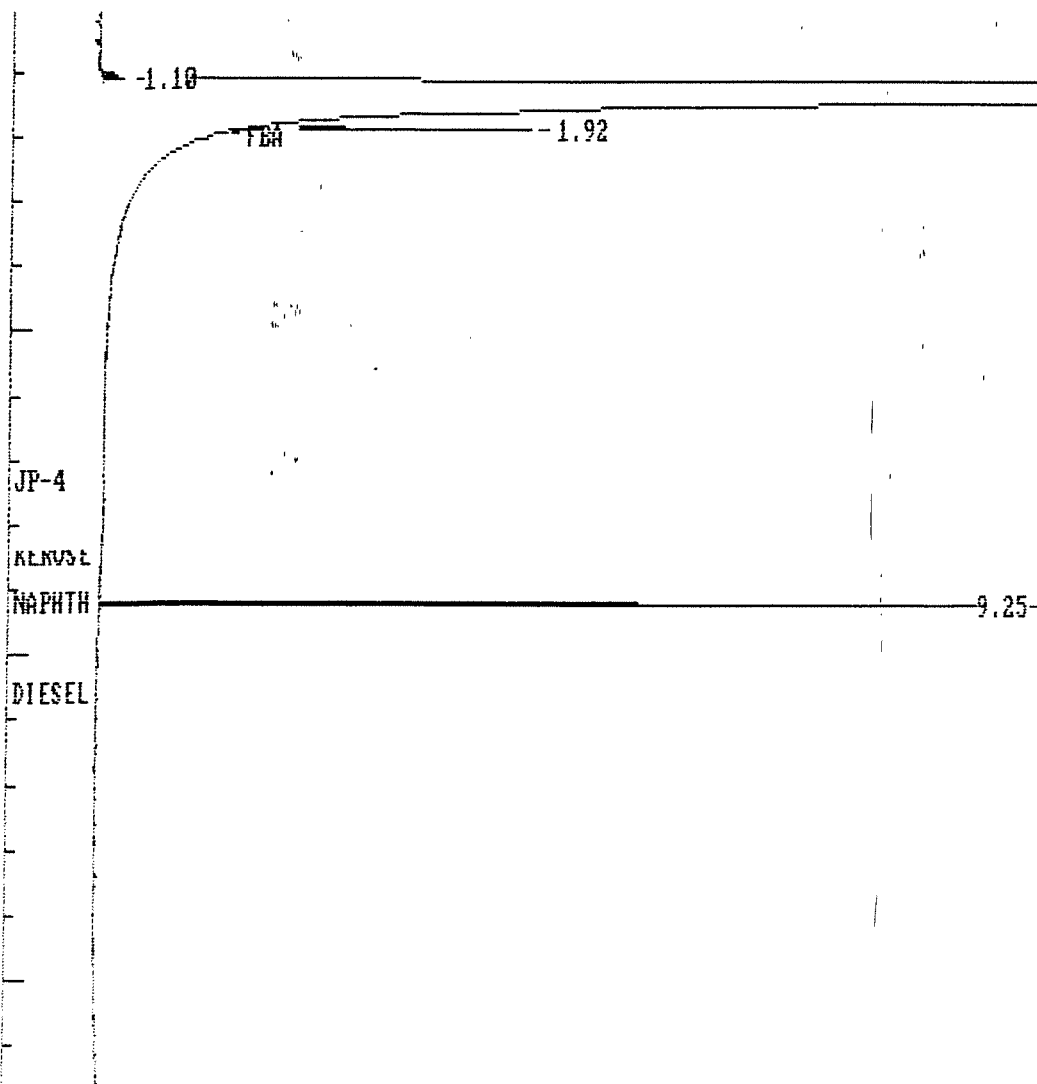
TOTAL AMOUNT = 11.2656

PEAKS NOT FOUND IN THIS RUN

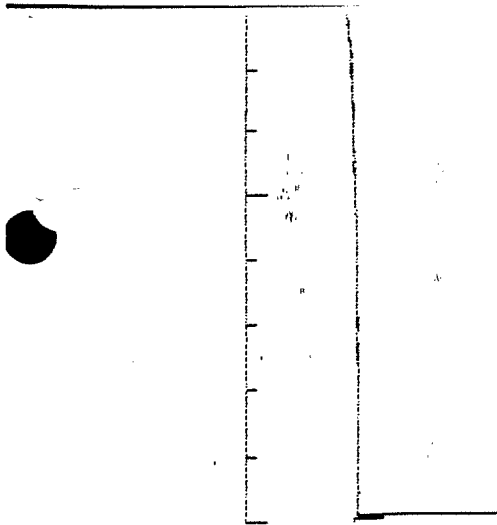
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:SM01-3.PTS Printed on 12-01-1993 at 19:15:07

Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts

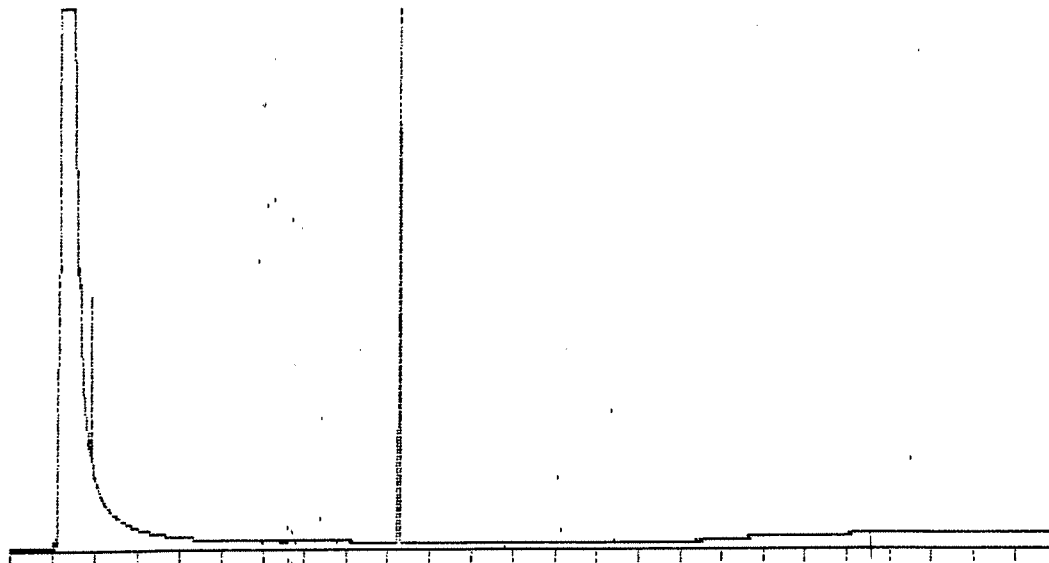


003879



003880

8



[Interface 6] 0-25 Min Scale: 100 Mv
 NAPHTHALENE Processed: 12-01-1993 19:48:41, segment 4, cycle 4
 RAW DATA SAVED IN FILE L:SM01-4.PTS

***** AREA PERCENT REPORT *****

***** 12-01-1993 19:50:01 Version 5.1.5 *****
 * Sample Name: NAPHTHALENE 12 PPM SU9312006 Data File: L:SM01-4 *
 * Date: 12-01-1993 19:48:41 Method: DIESEL *
 * Interface: 6 Cycle#: 4 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.100	2109	0.6362	1	1484	0.714	1.4
2	1.917	34111	10.2900	1	30570	11.552	1.1
3	9.267	295276	89.0738	1	200336	100.000	1.5

Total Area: 331496 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 12-01-1993 19:50:01 Version 5.1.5 *****
 * Sample Name: NAPHTHALENE 12 PPM SU9312006 Data File: L:SM01-4 *
 * Date: 12-01-1993 19:48:41 Method: DIESEL 11-23-1993 17:55:13 # 579 *
 * Interface: 6 Cycle#: 4 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

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* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

RET NUM	TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.100		0.2109	1.4100%	2109	1484	1.4 1			1.0000E-04
2	1.917		3.4111	22.8046%	34111	30570	1.1 1			1.0000E-04
3	9.267	NAPHTHALENE	11.3360	75.7855%	295276	200336	1.5 1	0	.7246	3.8391E-05

TOTAL AMOUNT = 14.9580

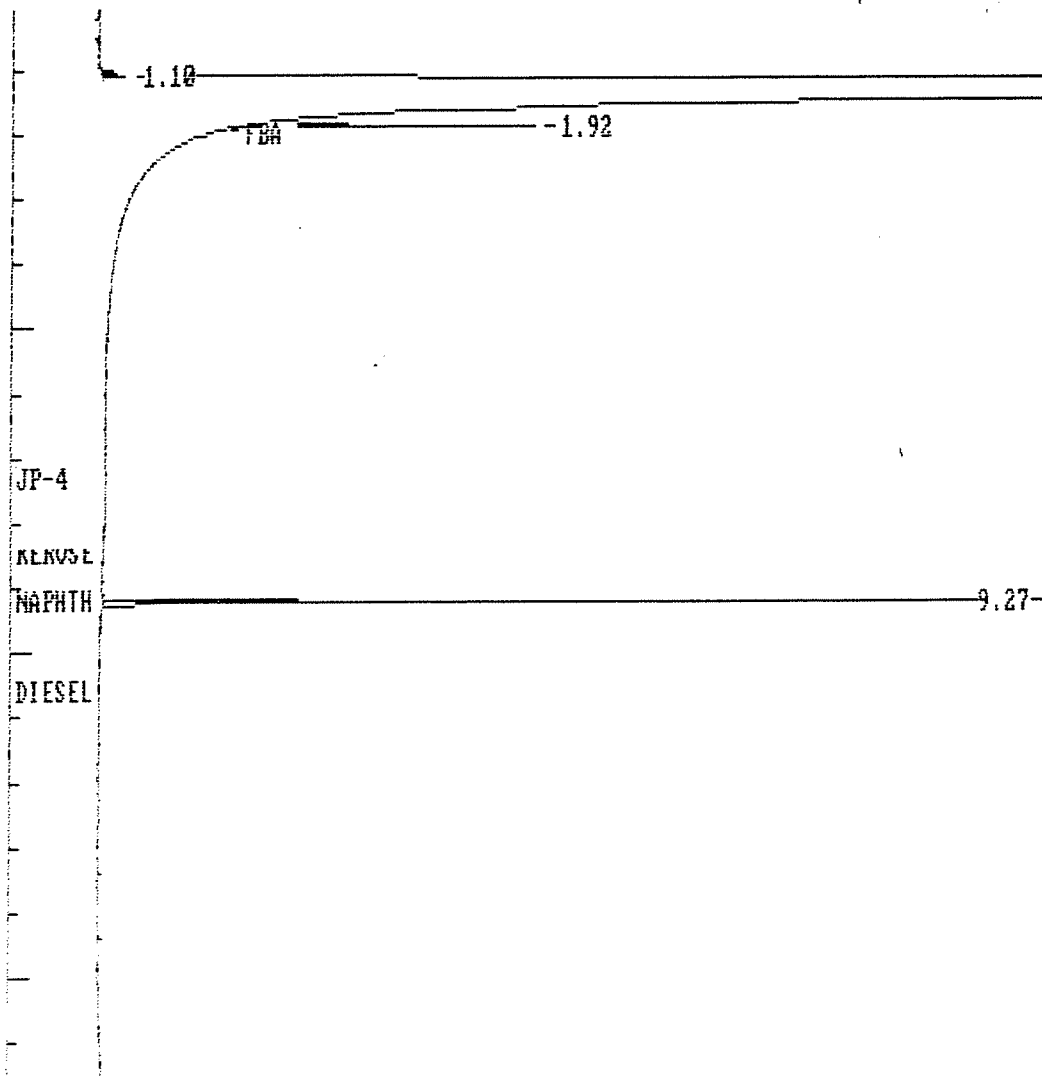
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:SM01-4.PTS Printed on 12-01-1993 at 19:50:09

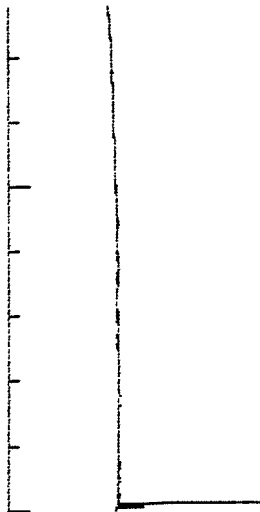
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

Full Range: 100 millivolts



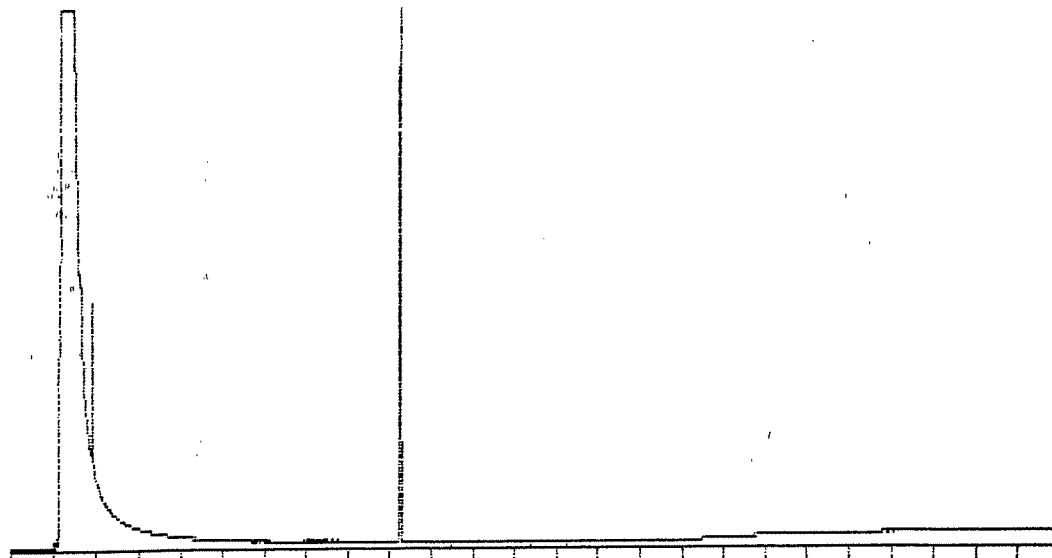
003882

10



003883

//



[Interface 6] 0-25 Min Scale: 100 Mu
 NAPHTHALEN Processed: 12-01-1993 20:23:43, segment 5, cycle 5
 RAW DATA SAVED IN FILE L:SM01-5.PTS

***** AREA PERCENT REPORT *****

***** 12-01-1993 20:25:03 Version 5.1.5 *****
 * Sample Name: NAPHTHALENE 16 PPM SU9312006 Data File: L:SM01-5 *
 * Date: 12-01-1993 20:23:43 Method: DIESEL *
 * Interface: 6 Cycle#: 5 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.100	2228	0.5180	1	1471	0.565	1.5
2	1.917	33694	7.8338	1	29807	8.548	1.1
3	9.250	394186	91.6481	1	283254	100.000	1.4

Total Area: 430108 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 12-01-1993 20:25:03 Version 5.1.5 *****
 * Sample Name: NAPHTHALENE 16 PPM SU9312006 Data File: L:SM01-5 *
 * Date: 12-01-1993 20:23:43 Method: DIESEL 11-23-1993 17:55:13 # 579 *
 * Interface: 6 Cycle#: 5 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

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* Misc. Information: 536-25 INITIAL CALIBRATION

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

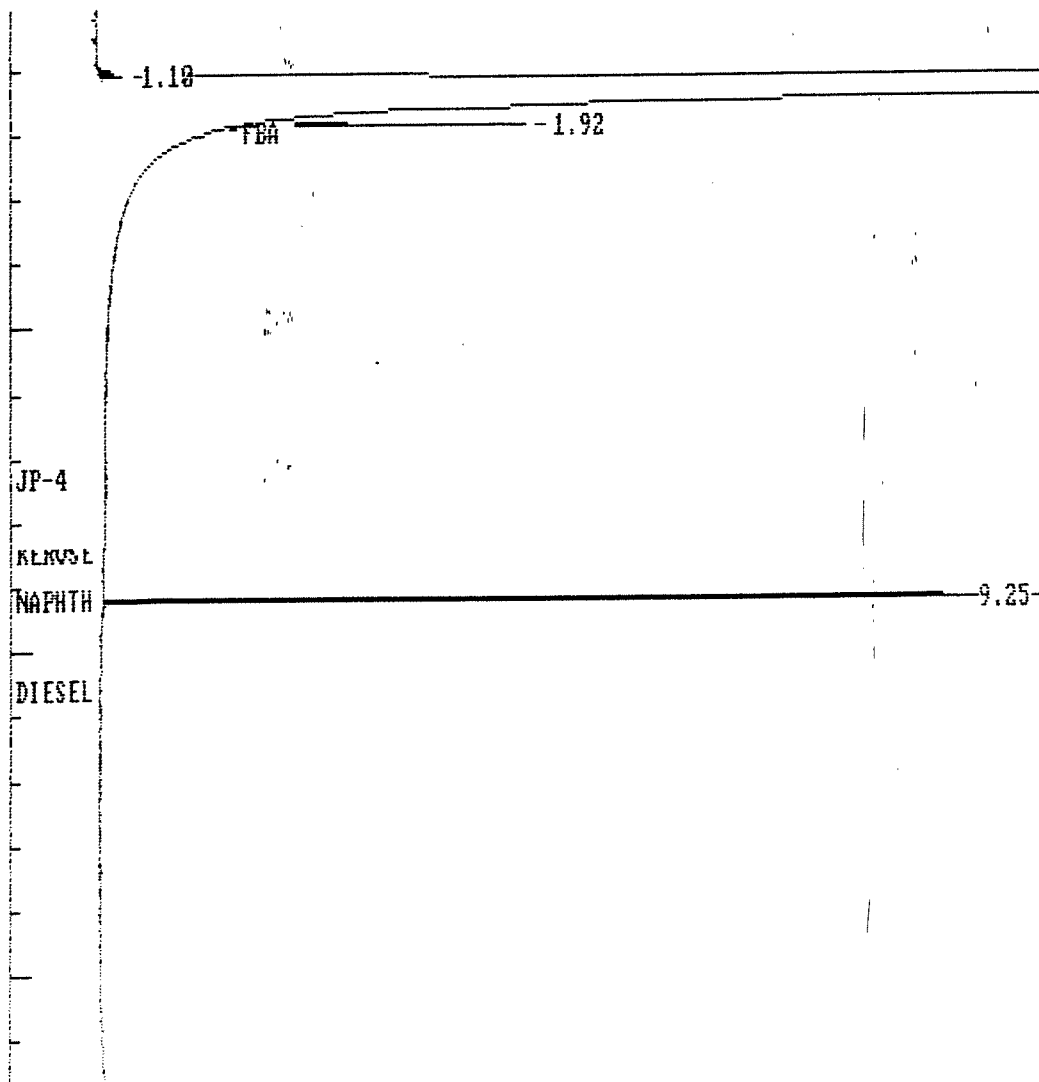
RET NUM	PEAK TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.100		0.2228	1.1898%	2228	1471	1.5 1			1.0000E-04
2	1.917		3.3694	17.9937%	33694	29807	1.1 1			1.0000E-04
3	9.250	NAPHTHALENE	15.1332	80.8165%	394186	283254	1.4 1	0	.5434	3.8391E-05

TOTAL AMOUNT = 18.7254

PEAKS NOT FOUND IN THIS RUN

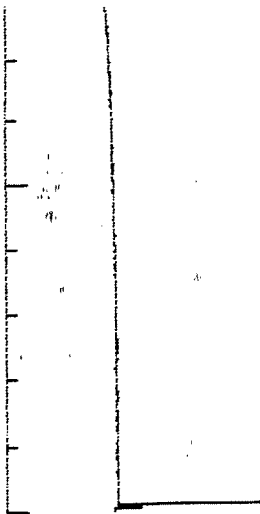
NAME	ADJUSTED RET. TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:SM01-51.PTS Printed on 12-01-1993 at 20:25:11
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



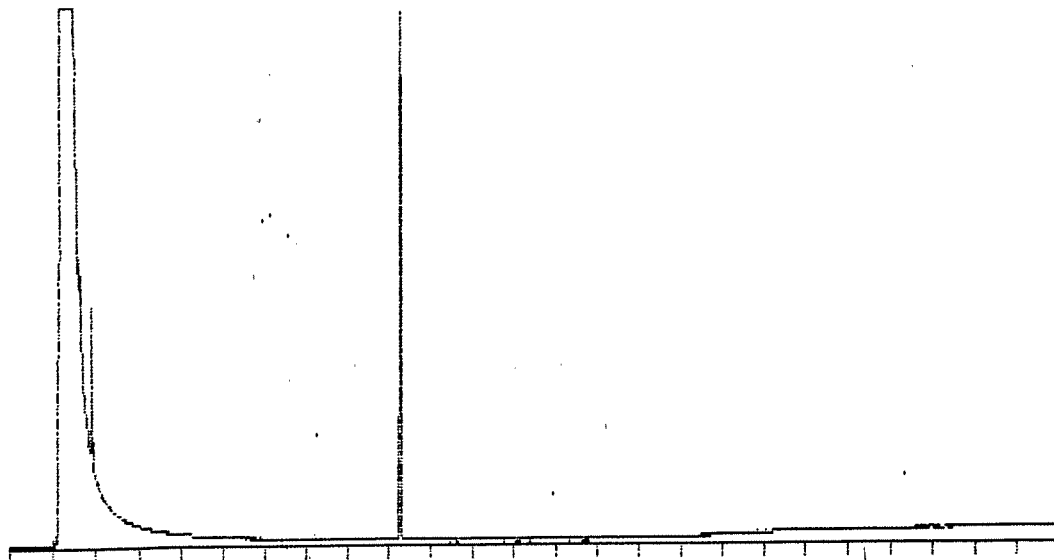
003885

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[Interface 6] 0-25 Min Scale: 100 Mu
 NAPHTHALEN Processed: 12-01-1993 20:58:51, segment 6, cycle 6
 RAW DATA SAVED IN FILE L:SM01-6.PTS

***** AREA PERCENT REPORT *****

***** 12-01-1993 21:00:10 Version 5.1.5 *****
 * Sample Name: NAPHTHALENE 20 PPM SV9312006 Data File: L:SM01-6 *
 * Date: 12-01-1993 20:58:51 Method: DIESEL *
 * Interface: 6 Cycle#: 6 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *
 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *
 * Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.100	2048	0.3804	1	1430	0.408	1.4
2	1.917	34876	6.4781	1	28379	6.955	1.2
3	9.267	501441	93.1415	1	365834	100.000	1.4

Total Area: 538365 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 12-01-1993 21:00:11 Version 5.1.5 *****
 * Sample Name: NAPHTHALENE 20 PPM SV9312006 Data File: L:SM01-6 *
 * Date: 12-01-1993 20:58:51 Method: DIESEL 11-23-1993 17:55:13 # 579 *
 * Interface: 6 Cycle#: 6 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *
 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

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* Misc. Information: 556-25 INITIAL CALIBRATION

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

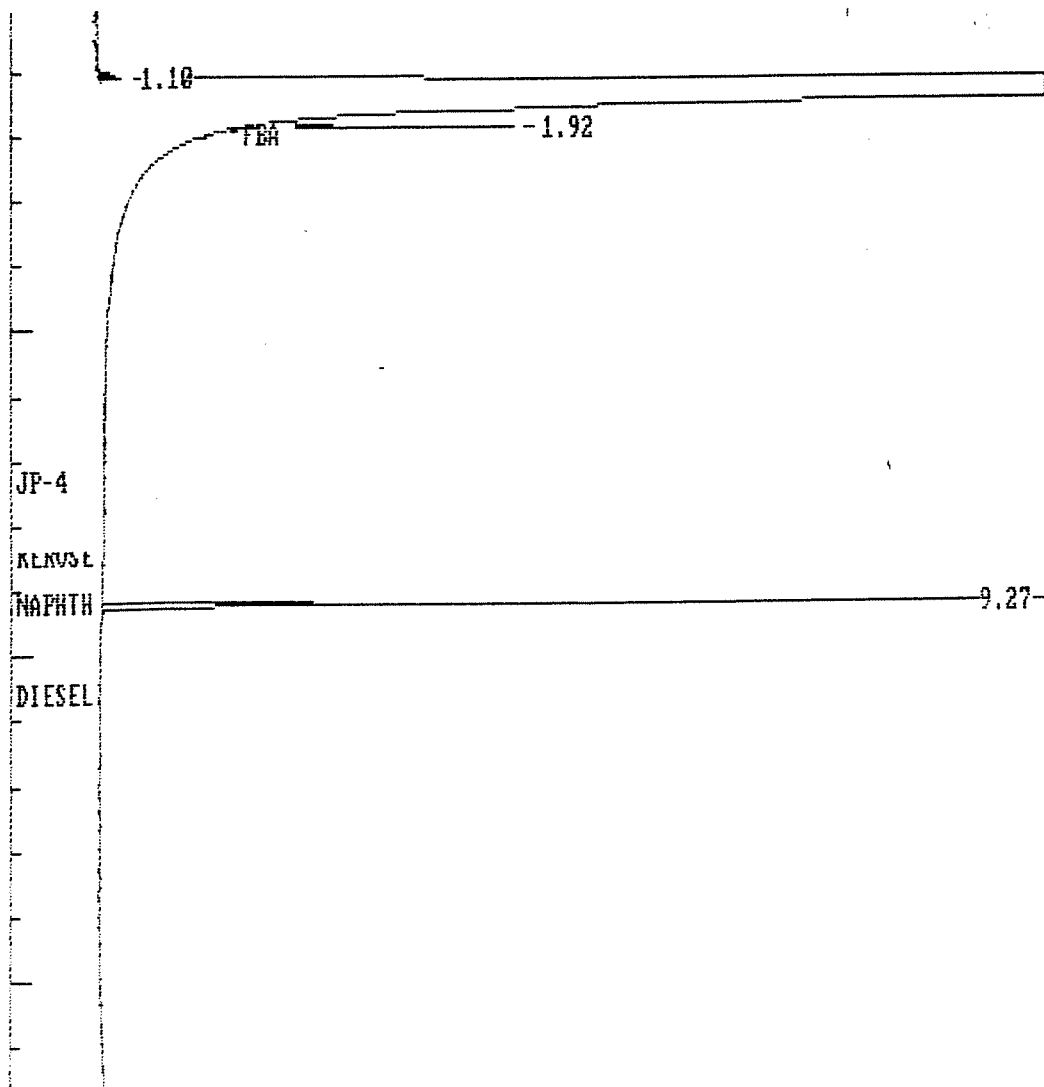
RET NUM	TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.100		0.2048	0.8926%	2048	1430	1.4 1			1.0000E-04
2	1.917		3.4876	15.2010%	34876	28379	1.2 1			1.0000E-04
3	9.267	NAPHTHALENE	19.2509	83.9064%	501441	365834	1.4 1	0	.7246	3.8391E-05

TOTAL AMOUNT = 22.9433

PEAKS NOT FOUND IN THIS RUN

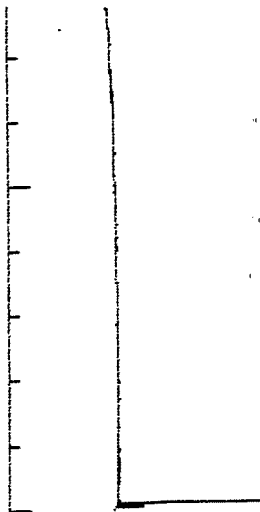
NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:SM01-6.PTS Printed on 12-01-1993 at 21:00:19
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



003888

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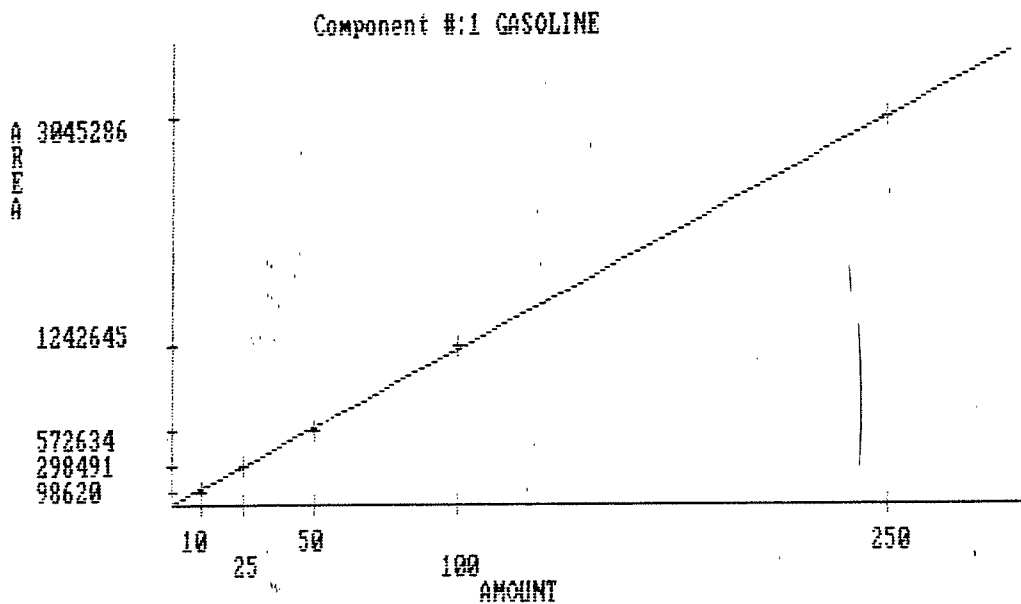
003889

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003890

Method FUELS
Sample MODIFIED 8015 FUELS
Operator JP
Run date 12-02-1993 10:28:53 version: 383
Printed on 12-02-1993 AT 10:29:11
Straight Line Fit forced through Origin.

Fuels
Initial Calibration
12-2-93



Component 1 = GASOLINE
EXTERNAL STANDARD CALIBRATION
AREA

LEVEL	AMOUNT	AREA
1	10.00	98620
2	25.00	298491
3	50.00	572634
4	100.00	1242645
5	250.00	3045286

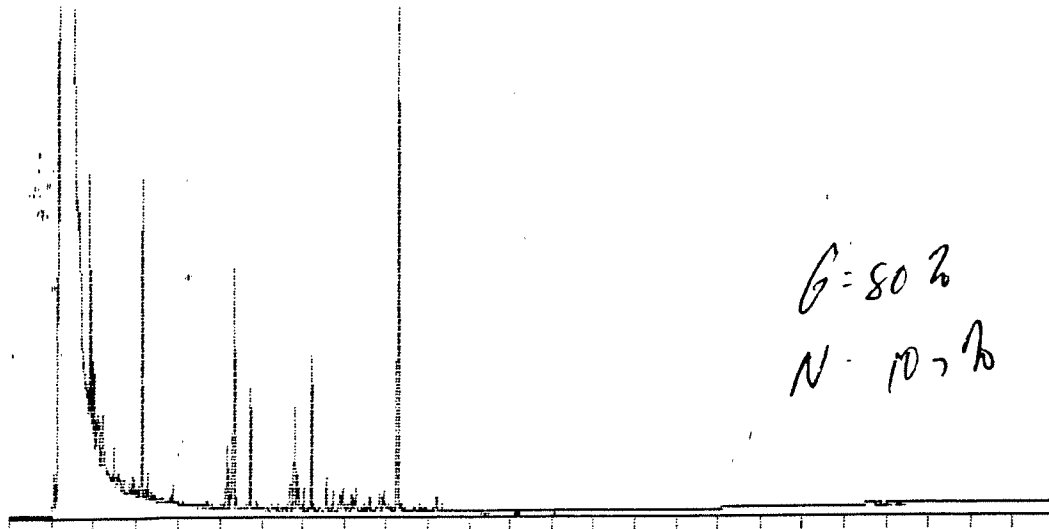
Y = SLOPE * X + INTERCEPT

Area = 1.2184E+04 * Amount + 0.0000E+00
Amount = 8.2072E-05 * Area + 0.0000E+00
R squared = 0.9996

R = 0.999

003891

(1)



[Interface 6] 0-25 Min Scale: 100 Mu
 CV GASOLIN Processed: 12-02-1993 10:30:09, segment 29, cycle 29
 RAW DATA SAVED IN FILE L:SM01-29.PTS

AREA PERCENT REPORT

***** 12-02-1993 10:31:29 Version 5.1.5 *****
 * Sample Name: CV GASOLINE/NAPH 50/10PPM SU9312014

Data File: L:SM01-29
 * Date: 12-02-1993 10:30:09 Method: DIESEL
 * Interface: 6 Cycle#: 29 Operator JF Channel#: 0 Vial#: N.A.
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25
 * Solvent Description:

Conditions: 45.20/MIN FINAL 300 HOLD 8.25
 Detector 0: Detector 1:
 * Misc. Information: 536-25 INITIAL CALIBRATION

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.067	11694	1.2740	1	6311	4.630	1.9
2	1.917	109916	11.9757	1	45285	43.525	2.4
3	2.117	24309	2.6485	1	7767	9.626	3.1
4	2.217	18897	2.0589	1	9104	7.483	2.1
5	2.500	11540	1.2573	1	6656	4.570	1.7
6	2.617	10864	1.1837	1	2287	4.302	4.7
7	2.850	3728	0.4062	1	1806	1.476	2.1
8	2.933	8448	0.9204	1	3233	3.345	2.6
9	3.150	128659	14.0178	1	58078	50.947	2.2
10	3.367	4855	0.5290	1	1175	1.923	4.1
11	3.850	9098	0.9912	1	3460	3.602	2.6
12	5.150	22295	2.4291	1	11461	8.829	1.9
13	5.300	98669	10.7503	1	43811	39.072	2.3
14	5.717	33505	3.6504	1	22259	13.267	1.5
15	6.667	6616	0.7208	1	4273	2.620	1.5
16	6.783	49696	5.4145	1	18451	19.679	2.7
	7.200	48124	5.2433	1	27967	19.057	1.7
	7.567	10760	1.1723	1	6054	4.261	1.8

482245
 472245 X
 5/12-02-93
 8.7072410⁻⁵
 = 40/50: 80%

003892

(2)

20	7.883	6412	0.6986	1	2693	2.539	2.4
21	8.183	6106	0.6653	1	2585	2.418	2.4
22	8.267	7493	0.8164	1	3605	2.967	2.1
23	8.617	8276	0.9017	1	2365	3.277	3.5
24	8.933	12717	1.3855	1	3526	5.036	3.6
25	9.250	252533	27.5143	1	126023	100.000	2.0
26	10.200	4646	0.5062	1	2471	1.840	1.9
27	10.350	2048	0.2231	1	1313	0.811	1.6

Total Area: 917825 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****
 ***** 12-02-1993 10:31:34 Version 5.1.5 *****
 * Sample Name: CV GASOLINE/NAPH 50/10PPM SV9312014

Data File: L:SM01-29

* Date: 12-02-1993 10:30:09 Method: DIESEL 12-02-1993 10:13:38 # 580 *
 * Interface: 6 Cycle#: 29 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.067		1.1694	1.5269%	11694	6311	1.9 1			1.0000E-04
2	1.917		10.9915	14.3523%	109916	45285	2.4 1			1.0000E-04
3	2.117		2.4309	3.1742%	24309	7767	3.1 1			1.0000E-04
4	2.217		1.8897	2.4675%	18897	9104	2.1 1			1.0000E-04
5	2.500		1.1540	1.5068%	11540	6656	1.7 1			1.0000E-04
6	2.617		1.0864	1.4186%	10864	2287	4.7 1			1.0000E-04
7	2.850		0.3728	0.4868%	3728	1806	2.1 1			1.0000E-04
8	2.933		0.8448	1.1031%	8448	3233	2.6 1			1.0000E-04
9	3.150		12.8659	16.7997%	128659	58078	2.2 1			1.0000E-04
10	3.367		0.4855	0.6339%	4855	1175	4.1 1			1.0000E-04
11	3.850		0.9097	1.1879%	9098	3460	2.6 1			1.0000E-04
12	5.150		2.2295	2.9112%	22295	11461	1.9 1			1.0000E-04
13	5.300		9.8669	12.8838%	98669	43811	2.3 1			1.0000E-04
14	5.717		3.3504	4.3749%	33505	22259	1.5 1			1.0000E-04
15	6.667		0.6616	0.8639%	6616	4273	1.5 1			1.0000E-04
16	6.783		4.9696	6.4891%	49696	18451	2.7 1			1.0000E-04
17	7.200		4.8124	6.2838%	48124	27967	1.7 1			1.0000E-04
18	7.567		1.0760	1.4049%	10760	6054	1.8 1			1.0000E-04
19	7.717		0.5924	0.7735%	5924	3524	1.7 1			1.0000E-04
20	7.883		0.6412	0.8373%	6412	2693	2.4 1			1.0000E-04
21	8.183		0.6106	0.7973%	6106	2585	2.4 1			1.0000E-04
22	8.267		0.7493	0.9784%	7493	3605	2.1 1			1.0000E-04
23	8.617		0.8276	1.0806%	8276	2365	3.5 1			1.0000E-04
24	8.933		1.2716	1.6605%	12717	3526	3.6 1			1.0000E-04

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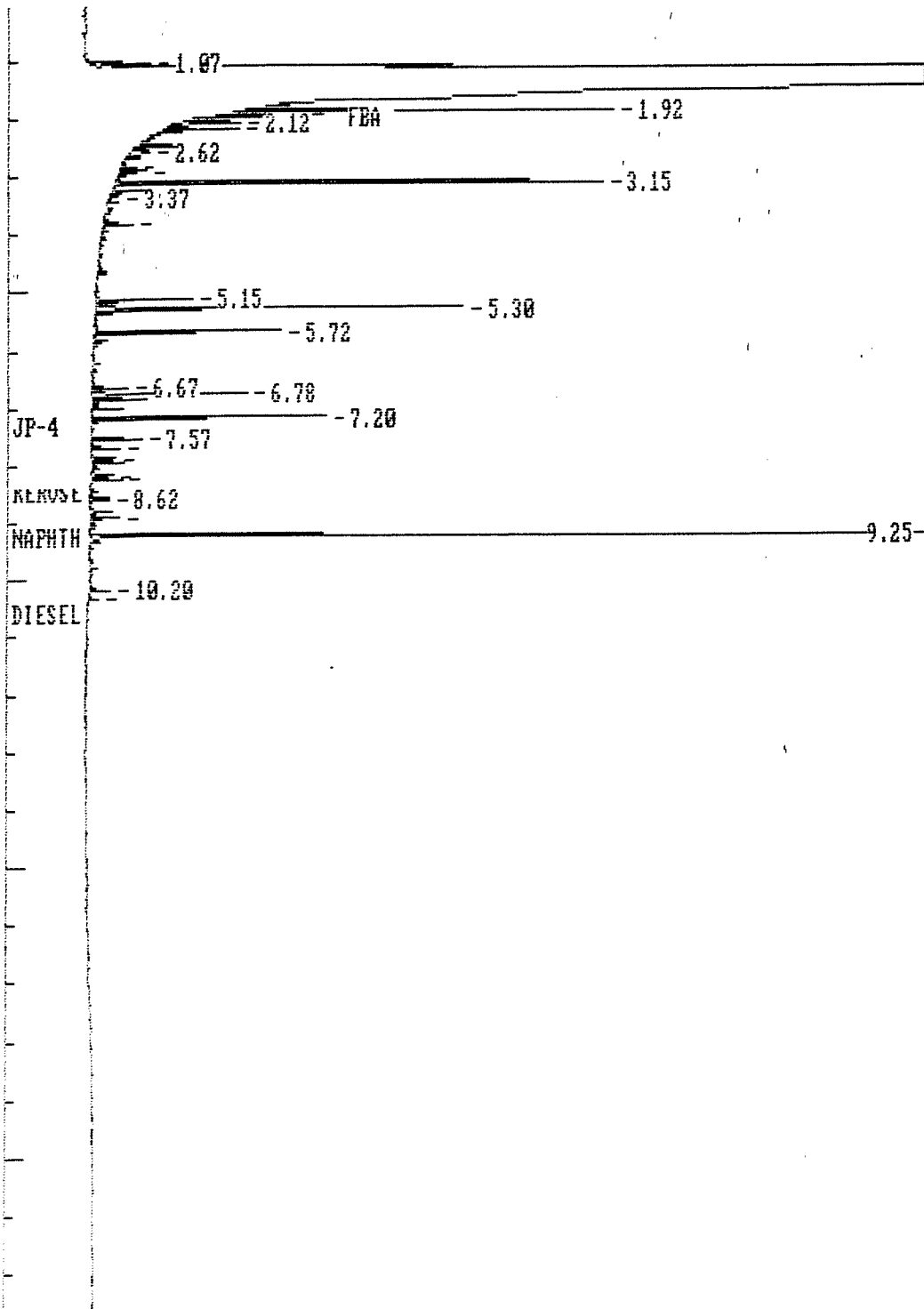
26	10.200	0.4646	0.6067%	4646	24/1	1.9 1		1.0000E-04
27	10.350 DIESEL	0.0976	0.1275%	2048	1313	1.6 1	0	4.7667E-05

TOTAL AMOUNT = 76.5837

PEAKS NOT FOUND IN THIS RUN

	ADJUSTED RET. TIME.	REFERENCE PEAK
4	7.33	DIESEL
KEROSENE	8.43	DIESEL

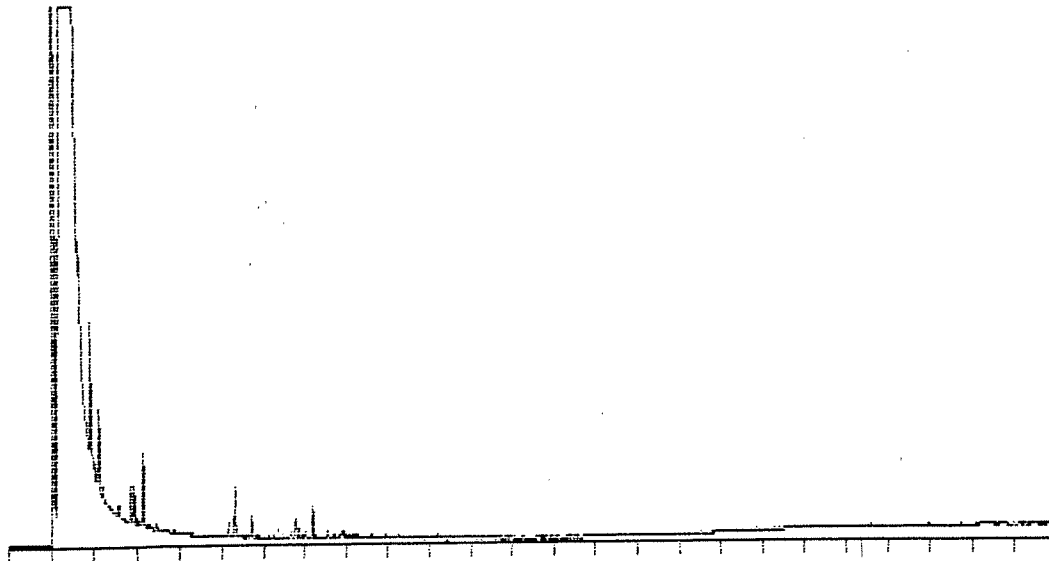
Data File = L:SM01-29.PTS Printed on 12-02-1993 at 10:31:54
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



003894

003895

⑤



[Interface 6] 0-25 Min Scale: 100 Mu
 GASOLINE Processed: 12-01-1993 21:34:01, segment 7, cycle 7
 RAW DATA SAVED IN FILE L:SM01-7.PTS

***** AREA PERCENT REPORT *****

***** 12-01-1993 21:35:20 Version 5.1.5 *****
 * Sample Name: GASOLINE 10 PPM SU9312007 Data File: L:SM01-7 *
 * Date: 12-01-1993 21:34:01 Method: DIESEL *
 * Interface: 6 Cycle#: 7 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	1631937	9.0773	1	921526	10.058	1.8
2	1.217	16225467	90.2512	0	988267	100.000	16.4
3	2.117	22102	0.1229	1	14101	0.136	1.6
4	2.617	6186	0.0344	1	1960	0.038	3.2
5	2.850	10057	0.0559	1	6727	0.062	1.5
6	2.933	11898	0.0662	1	6866	0.073	1.7
7	3.017	2525	0.0140	1	1548	0.016	1.6
8	3.133	23205	0.1291	1	13673	0.143	1.7
9	5.150	4116	0.0229	1	2675	0.025	1.5
10	5.300	14858	0.0826	1	8771	0.092	1.7
11	5.717	6118	0.0340	1	4048	0.038	1.5
12	6.783	9046	0.0503	1	3443	0.056	2.6
13	7.017	2124	0.0118	1	1208	0.013	1.8
14	7.200	8487	0.0472	1	5835	0.052	1.5

A: 98620

Total Area: 12978124 Area Reject: 2000 One sample per 1.000 sec.

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EXTERNAL STANDARD TABLE

***** 12-01-1993 21:35:22 Version 5.1.5 *****
 * Sample Name: GASOLINE 10 PPM SU9312007 Data File: L:SM01-7 *
 * Date: 12-01-1993 21:34:01 Method: DIESEL 11-23-1993 17:55:13 # 579 *
 * Interface: 6 Cycle#: 7 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Ending retention time: 25.00
 Area reject: 2000 One sample per 1.000 sec.
 Amount injected: 1.00 Dilution factor: 1.00
 Sample Weight: 1.00000

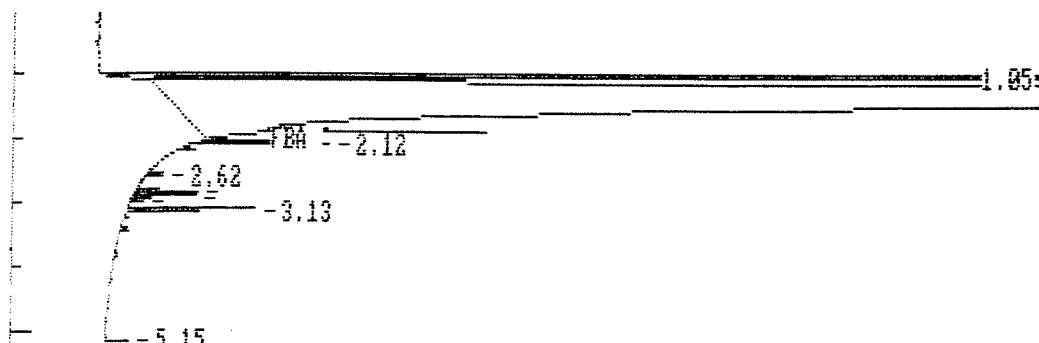
PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		163.1937	9.0773%	1631937	921526	1.8 1			1.0000E-04
2	1.217		1622.5466	90.2512%	16225467	988267	16.4 0V			1.0000E-04
3	2.117		2.2102	0.1229%	22102	14101	1.6 1			1.0000E-04
4	2.617		0.6186	0.0344%	6186	1960	3.2 1			1.0000E-04
5	2.850		1.0057	0.0559%	10057	6727	1.5 1			1.0000E-04
6	2.933		1.1897	0.0662%	11898	6866	1.7 1			1.0000E-04
7	3.017		0.2524	0.0140%	2525	1548	1.6 1			1.0000E-04
8	3.133		2.3205	0.1291%	23205	13673	1.7 1			1.0000E-04
9	5.150		0.4116	0.0229%	4116	2675	1.5 1			1.0000E-04
10	5.300		1.4858	0.0826%	14858	8771	1.7 1			1.0000E-04
11	6.717		0.6118	0.0340%	6118	4048	1.5 1			1.0000E-04
12	6.783		0.9046	0.0503%	9046	3443	2.6 1			1.0000E-04
13	7.017		0.2124	0.0118%	2124	1208	1.8 1			1.0000E-04
14	7.200		0.8487	0.0472%	8487	5835	1.5 1			1.0000E-04

TOTAL AMOUNT = 1797.8126

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL
NAPHTHALENE	9.20	NAPHTHALENE
DIESEL	10.60	NAPHTHALENE

Data File = L:SM01-7.PTS Printed on 12-01-1993 at 21:35:38
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts



003897

JP-4

6.78

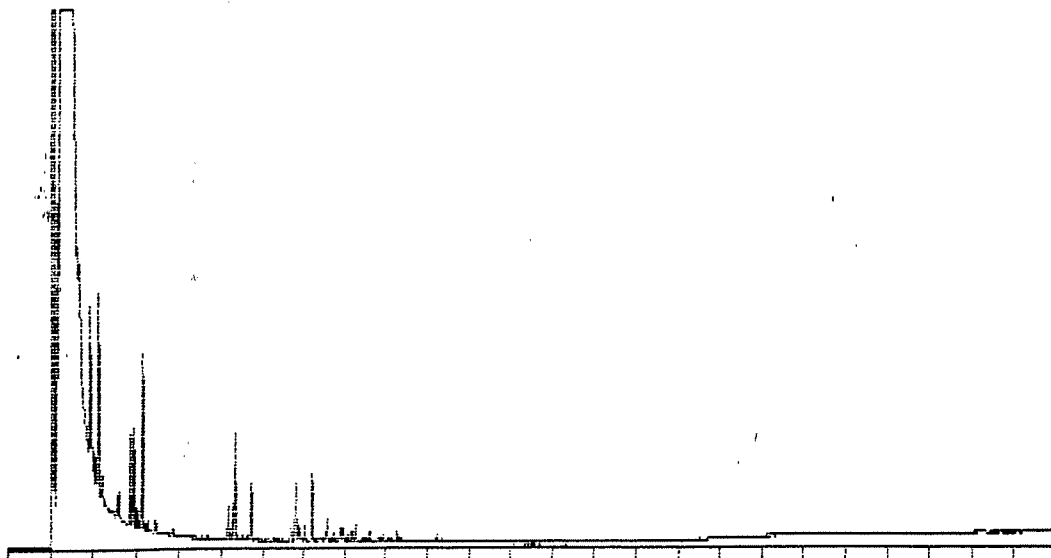
KEROSE

NAPHTH

DIESEL

003898

8



[Interface 6] 0-25 Min Scale: 100 Mv
 GASOLINE Processed: 12-01-1993 22:09:19, segment 8, cycle 8
 RAW DATA SAVED IN FILE L:SM01-8.PTS

***** AREA PERCENT REPORT *****

***** 12-01-1993 22:10:39 Version 5.1.5 *****
 * Sample Name: GASOLINE 25 PPM SU9312007 Data File: L:SM01-8 *
 * Date: 12-01-1993 22:09:20 Method: DIESEL *
 * Interface: 6 Cycle#: 8 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	2246112	12.048800	0	992133	14.011	2.3
2	1.217	16030592	85.992800	0	986761	100.000	16.2
3	2.117	<u>58336</u>	0.3129	1	36249	0.364	1.6
4	2.617	16217	0.0870	1	5143	0.101	3.2
5	2.850	25228	0.1353	1	16265	0.157	1.6
6	2.933	28968	0.1554	1	18005	0.181	1.6
7	3.017	6237	0.0335	1	3676	0.039	1.7
8	3.133	57358	0.3077	1	32512	0.358	1.8
9	3.267	3323	0.0178	1	1693	0.021	2.0
10	3.450	4571	0.0245	1	2461	0.029	1.9
11	3.833	2586	0.0139	1	1100	0.016	2.4
12	5.150	10180	0.0546	1	6044	0.064	1.7
13	5.300	37251	0.1998	1	19454	0.232	1.9
14	5.717	15133	0.0812	1	10198	0.094	1.5
15	6.667	3756	0.0201	1	2379	0.023	1.6
16	6.783	23779	0.1276	1	10473	0.148	2.3
	7.033	5077	0.0272	1	2698	0.032	1.9
	7.200	19664	0.1055	1	12033	0.123	1.6

A: 298491

003899

20	7.717	3182	0.0171	1	1873	0.020	1.7
21	7.900	14278	0.0766	1	2223	0.089	6.4
22	8.183	4330	0.0232	1	1809	0.027	2.4
23	8.267	3615	0.0194	1	2515	0.023	1.4
24	8.633	5043	0.0271	1	1880	0.031	2.7
25	8.933	2325	0.0125	1	1185	0.015	2.0
	9.267	4367	0.0234	1	1512	0.027	2.9
	10.217	3898	0.0209	1	1360	0.024	2.9

Total Area: 18641790 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-01-1993 22:10:44 Version 5.1.5 *****

* Sample Name: GASOLINE 25 PPM SV9312007 Data File: L:SM01-8 *

* Date: 12-01-1993 22:09:20 Method: DIESEL 11-23-1993 17:55:13 # 579 *

* Interface: 6 Cycle#: 8 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *

* Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEP	RET	PEAK	CONCENTRATION in	NORMALIZED	AREA	HEIGHT	AREA/	REF	% DELTA	
	TIME	NAME	mg/kg	CONC			HEIGHT BL	PEAK	RET TIME	CONC/AREA
1	1.050		224.6112	12.0505%	2246112	992133	2.3 0V			1.0000E-04
2	1.217		1603.0592	86.0052%	16030592	986761	16.2 0V			1.0000E-04
3	2.117		5.8336	0.3130%	58336	36249	1.6 1			1.0000E-04
4	2.617		1.6216	0.0870%	16217	5143	3.2 1			1.0000E-04
5	2.850		2.5228	0.1353%	25228	16265	1.6 1			1.0000E-04
6	2.933		2.8968	0.1554%	28968	18005	1.6 1			1.0000E-04
7	3.017		0.6237	0.0335%	6237	3676	1.7 1			1.0000E-04
8	3.133		5.7358	0.3077%	57358	32512	1.8 1			1.0000E-04
9	3.267		0.3323	0.0178%	3323	1693	2.0 1			1.0000E-04
10	3.450		0.4571	0.0245%	4571	2461	1.9 1			1.0000E-04
11	3.833		0.2586	0.0139%	2586	1100	2.4 1			1.0000E-04
12	5.150		1.0180	0.0546%	10180	6044	1.7 1			1.0000E-04
13	5.300		3.7251	0.1999%	37251	19454	1.9 1			1.0000E-04
14	5.717		1.5133	0.0812%	15133	10198	1.5 1			1.0000E-04
15	6.667		0.3756	0.0202%	3756	2379	1.6 1			1.0000E-04
16	6.783		2.3779	0.1276%	23779	10473	2.3 1			1.0000E-04
17	7.033		0.5077	0.0272%	5077	2698	1.9 1			1.0000E-04
18	7.200		1.9664	0.1055%	19664	12033	1.6 1			1.0000E-04
19	7.567		0.6389	0.0343%	6390	3672	1.7 1			1.0000E-04
20	7.717		0.3182	0.0171%	3182	1873	1.7 1			1.0000E-04
21	7.900		1.4278	0.0766%	14278	2223	6.4 1			1.0000E-04
22	8.183		0.4330	0.0232%	4330	1809	2.4 1			1.0000E-04
23	8.267		0.3614	0.0194%	3615	2515	1.4 1			1.0000E-04
	8.633		0.5043	0.0271%	5043	1880	2.7 1			1.0000E-04
	8.933		0.2324	0.0125%	2325	1185	2.0 1			1.0000E-04

003900

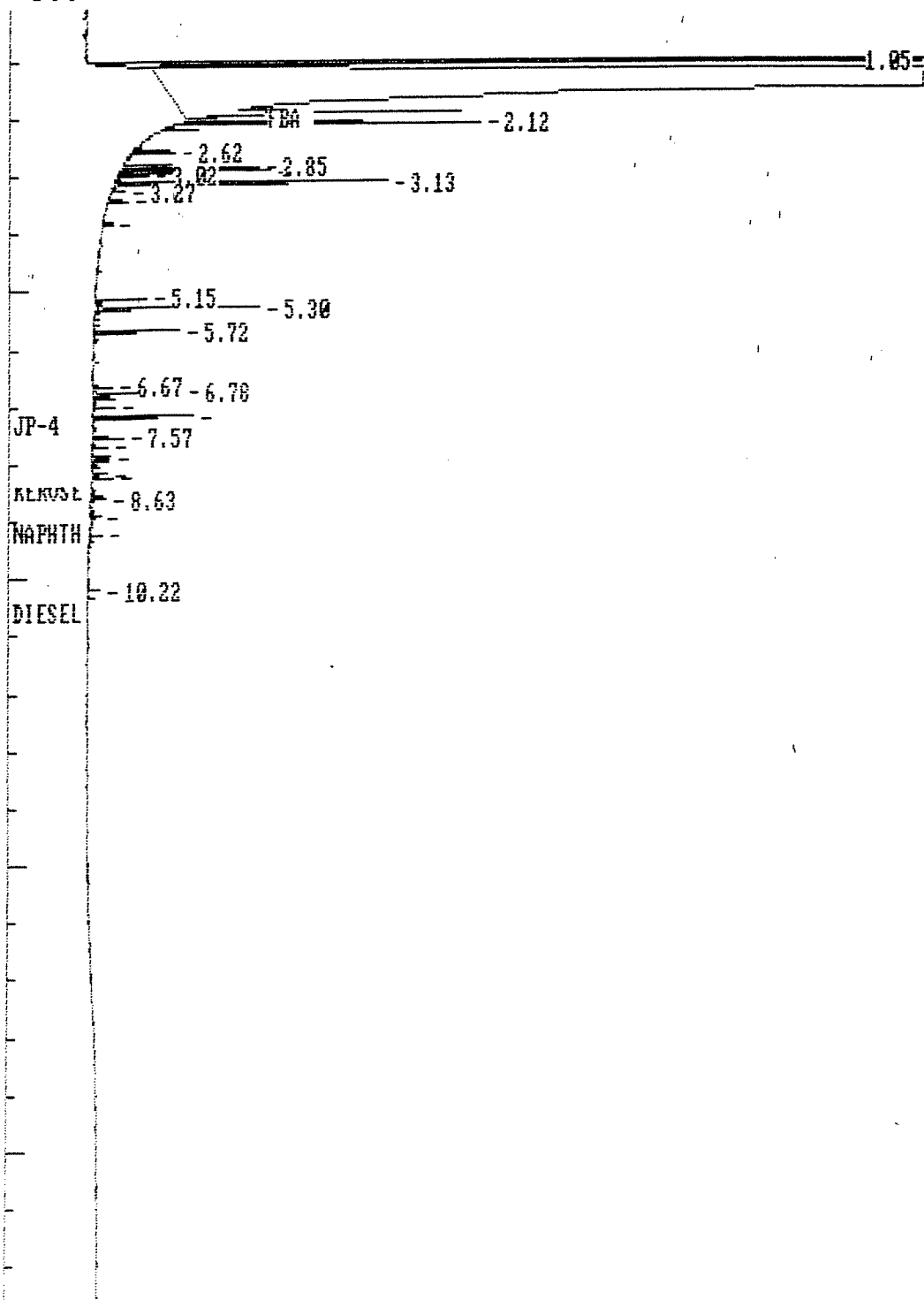
10

TOTAL AMOUNT = 1863.9105

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET. TIME	REFERENCE PEAK
	7.33	DIESEL
ROSENE	8.43	DIESEL
DIESEL	10.60	NAPHTHALENE

Data File = L:SM01-8.FTS Printed on 12-01-1993 at 22:11:03
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts

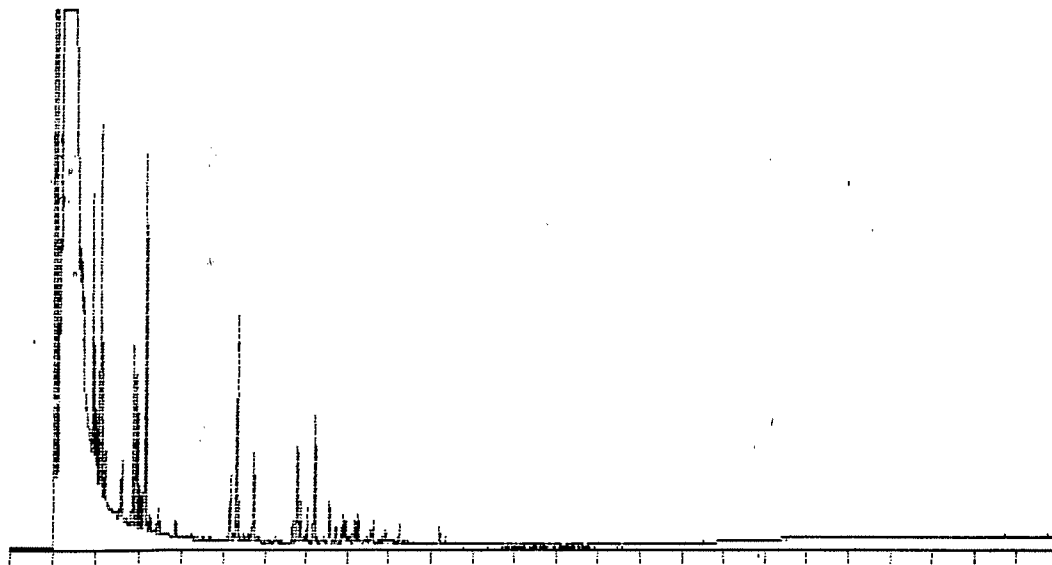


003901

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003902

(12)



[Interface 6] 0-25 Min Scale: 100 Mu
 GASOLINE Processed: 12-01-1993 22:44:35, segment 9, cycle 9
 RAW DATA SAVED IN FILE L:SM01-9.PTS

***** AREA PERCENT REPORT *****

***** 12-01-1993 22:45:55 Version 5.1.5 *****
 * Sample Name: GASOLINE 50 PPM SU9312007 Data File: L:SM01-9 *
 * Date: 12-01-1993 22:44:35 Method: DIESEL *
 * Interface: 6 Cycle#: 9 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	2436263	74.17000	0	989195	100.000	2.5
2	1.133	4149	0.1263	1	0	0.170	0.0
3	1.917	108705	3.3094	1	48848	4.462	2.2
4	2.100	112161	3.4146	1	67268	4.604	1.7
5	2.217	35524	1.0815	1	8754	1.458	4.1
6	2.850	50478	1.5367	1	33072	2.072	1.5
7	2.933	57465	1.7495	1	27880	2.359	2.1
8	3.017	12643	0.3849	1	7958	0.519	1.6
9	3.133	121742	3.7063	1	69204	4.997	1.8
10	3.433	9104	0.2772	1	4749	0.374	1.9
11	3.833	5024	0.1530	1	2650	0.206	1.9
12	5.150	20179	0.6143	1	12155	0.828	1.7
13	5.300	70988	2.1612	1	40541	2.914	1.8
14	5.483	2052	0.0625	1	1353	0.084	1.5
15	5.600	2024	0.0616	1	1284	0.083	1.6
16	5.717	29776	0.9065	1	16190	1.222	1.8
17	6.233	3275	0.0997	1	1296	0.134	2.5
18	6.767	53906	1.6411	1	17731	2.213	3.0

A = 572634

003903

20	7.200	40602	1.2361	1	23248	1.667	1.7
21	7.550	12812	0.3901	1	7224	0.526	1.8
22	7.717	6156	0.1874	1	2953	0.253	2.1
23	7.883	27909	0.8497	1	5001	1.146	5.6
24	8.250	18191	0.5538	1	4863	0.747	3.7
25	8.617	10621	0.3233	1	4375	0.436	2.4
	8.917	7945	0.2419	1	2195	0.326	3.6
	9.250	8529	0.2597	1	3542	0.350	2.4
28	10.200	4304	0.1310	1	3116	0.177	1.4
29	10.350	2434	0.0741	1	1221	0.100	2.0

Total Area: 3284701 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-01-1993 22:46:00 Version 5.1.5 *****

* Sample Name: GASOLINE .50 PPM SU9312007 Data File: L:SM01-9 *

* Date: 12-01-1993 22:44:35 Method: DIESEL 11-23-1993 17:55:13 # 579 *

* Interface: 6 Cycle#: 9 Operator JF Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *

* Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		243.6263	74.3177%	2436263	989195	2.5 0V			1.0000E-04
2	1.133		0.4149	0.1266%	4149	0	0.0 1			1.0000E-04
3	1.917		10.8705	3.3160%	108705	48848	2.2 1			1.0000E-04
4	2.100		11.2161	3.4214%	112161	67268	1.7 1			1.0000E-04
5	2.217		3.5524	1.0837%	35524	8754	4.1 1			1.0000E-04
6	2.850		5.0478	1.5398%	50478	33072	1.5 1			1.0000E-04
7	2.933		5.7464	1.7529%	57465	27880	2.1 1			1.0000E-04
8	3.017		1.2643	0.3857%	12643	7958	1.6 1			1.0000E-04
9	3.133		12.1742	3.7137%	121742	69204	1.8 1			1.0000E-04
10	3.433		0.9104	0.2777%	9104	4749	1.9 1			1.0000E-04
11	3.833		0.5024	0.1533%	5024	2650	1.9 1			1.0000E-04
12	5.150		2.0179	0.6156%	20179	12155	1.7 1			1.0000E-04
13	5.300		7.0988	2.1655%	70988	40541	1.8 1			1.0000E-04
14	5.483		0.2052	0.0626%	2052	1353	1.5 1			1.0000E-04
15	5.600		0.2024	0.0617%	2024	1284	1.6 1			1.0000E-04
16	5.717		2.9776	0.9083%	29776	16190	1.8 1			1.0000E-04
17	6.233		0.3275	0.0999%	3275	1296	2.5 1			1.0000E-04
18	6.767		5.3906	1.6444%	53906	17731	3.0 1			1.0000E-04
19	7.017		0.9742	0.2972%	9742	6371	1.5 1			1.0000E-04
20	7.200		4.0601	1.2385%	40602	23248	1.7 1			1.0000E-04
21	7.550		1.2812	0.3908%	12812	7224	1.8 1			1.0000E-04
22	7.717		0.6156	0.1878%	6156	2953	2.1 1			1.0000E-04
23	7.883		2.7909	0.8514%	27909	5001	5.6 1			1.0000E-04

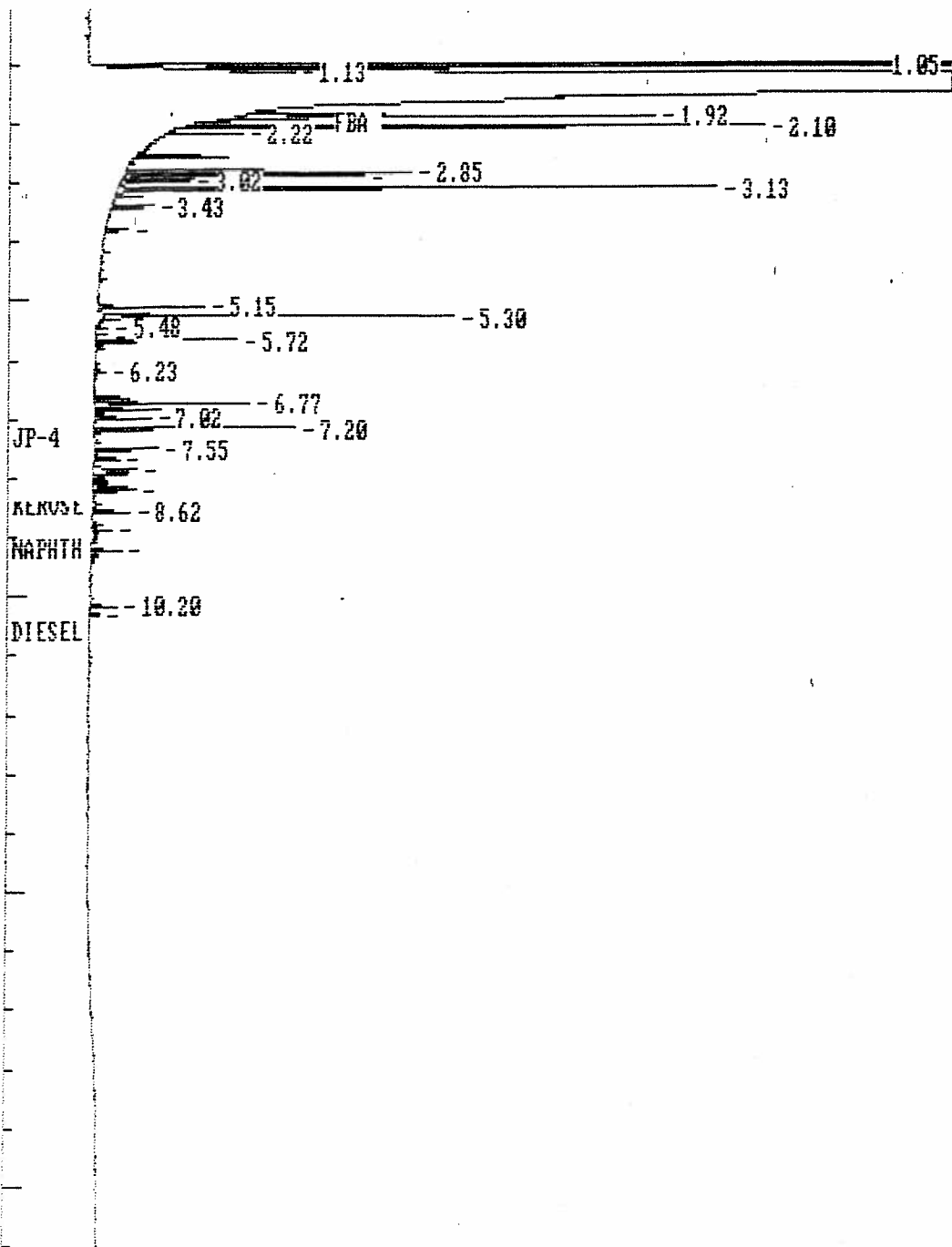
25	8.617	1.0621	0.3240%	10621	4375	2.4	1		1.0000E-04
26	8.917	0.7945	0.2424%	7945	2195	3.6	1		1.0000E-04
27	9.250 NAPHTHALENE	0.3274	0.0999%	8529	3542	2.4	1	0	3.8391E-05
28	10.200	0.4304	0.1313%	4304	3116	1.4	1		1.0000E-04
29	10.350 DIESEL	0.1160	0.0354%	2434	1221	2.0	1	0	4.7667E-05

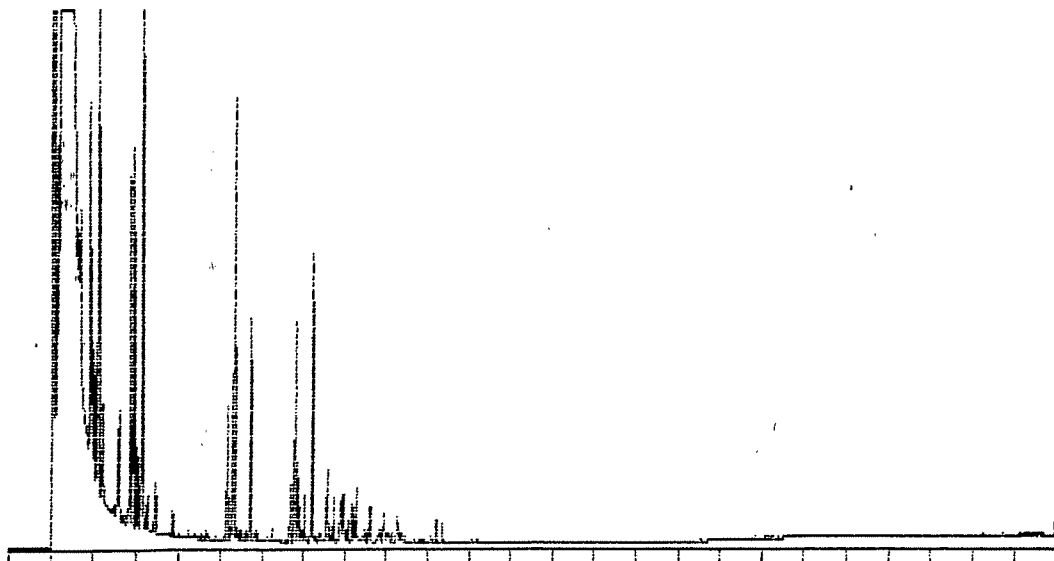
TOTAL AMOUNT = 327.8172

PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
JP-4	7.33	DIESEL
KEROSENE	8.43	DIESEL

Data File = L:SM01-9.PTS Printed on 12-01-1993 at 22:46:20
 Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
 Full Range: 100 millivolts





[Interface 6] 0-25 Min Scale: 100 Mu
 GASOLINE Processed: 12-01-1993 23:19:54, segment 10, cycle 10
 RAW DATA SAVED IN FILE L:SM01-10.PTS

***** AREA PERCENT REPORT *****

***** 12-01-1993 23:21:14 Version 5.1.5 *****
 * Sample Name: GASOLINE 100 PPM SU9312007 Data File: L:SM01-10 *
 * Date: 12-01-1993 23:19:54 Method: DIESEL *
 * Interface: 6 Cycle#: 10 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	2651398	60.89420	0	985820	100.000	2.7
2	1.917	188213	4.3227	1	65004	7.099	2.9
3	2.117	223573	5.1348	1	127344	8.432	1.8
4	2.217	21853	0.5019	1	17241	0.824	1.3
5	2.617	65168	1.4967	1	20009	2.458	3.3
7	2.850	99282	2.2802	1	63759	3.745	1.6
8	2.933	113339	2.6030	1	69188	4.275	1.6
9	3.017	24999	0.5741	1	14665	0.943	1.7
10	3.133	226562	5.2034	1	130857	8.545	1.7
11	3.267	13992	0.3214	1	6676	0.528	2.1
12	3.450	17876	0.4106	1	9248	0.674	1.9
13	3.833	10015	0.2300	1	4481	0.378	2.2
14	4.217	3564	0.0818	1	1527	0.134	2.3
15	4.383	2788	0.0640	1	650	0.105	4.3
16	4.667	4149	0.0953	1	1913	0.156	2.2
17	5.150	39962	0.9178	1	25082	1.507	1.6
	5.300	157343	3.6137	1	81970	5.934	1.9
	5.617	7137	0.1639	1	2154	0.269	3.3

A: 1242645

21	6.233	6688	0.1536	1	2372	0.252	2.8
22	6.667	14686	0.3373	1	10185	0.554	1.4
23	6.783	98242	2.2563	1	40826	3.705	2.4
24	7.033	19313	0.4436	1	8651	0.728	2.2
25	7.200	80354	1.8455	1	52936	3.031	1.5
26	7.383	4964	0.1140	1	1345	0.187	3.7
	7.567	25465	0.5848	1	13490	0.960	1.9
	7.717	12226	0.2808	1	7682	0.461	1.6
29	7.967	55767	1.2808	1	8864	2.103	6.3
30	8.183	17153	0.3939	1	6792	0.647	2.5
31	8.267	20721	0.4759	1	9326	0.782	2.2
32	8.583	20724	0.4760	1	6187	0.782	3.3
33	8.817	8818	0.2025	1	2468	0.333	3.6
34	8.933	10046	0.2307	1	4743	0.379	2.1
35	9.133	2419	0.0556	1	1811	0.091	1.3
36	9.267	9067	0.2082	1	4301	0.342	2.1
37	9.350	3708	0.0852	1	1737	0.140	2.1
39	10.217	8558	0.1965	1	4147	0.323	2.1
40	10.350	5096	0.1170	1	3491	0.192	1.5

Total Area: 4354107 Area Reject: 2000 One sample per 1.000 sec.

***** EXTERNAL STANDARD TABLE *****

***** 12-01-1993 23:21:22 Version 5.1.5 *****

* Sample Name: GASOLINE 100 PPM SV9312007 Data File: L:SM01-10 *

* Date: 12-01-1993 23:19:54 Method: DIESEL 11-23-1993 17:55:13 # 579 *

* Interface: 6 Cycle#: 10 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *

Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT BL	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		265.1398	60.9827%	2651398	985820	2.7 0V			1.0000E-04
2	1.917		18.8213	4.3289%	188213	65004	2.9 1			1.0000E-04
3	2.117		22.3573	5.1422%	223573	127344	1.8 1			1.0000E-04
4	2.217		2.1853	0.5026%	21853	17241	1.3 1			1.0000E-04
5	2.617		6.5168	1.4989%	65168	20009	3.3 1			1.0000E-04
7	2.850		9.9282	2.2835%	99282	63759	1.6 1			1.0000E-04
8	2.933		11.3339	2.6068%	113339	69188	1.6 1			1.0000E-04
9	3.017		2.4999	0.5750%	24999	14665	1.7 1			1.0000E-04
10	3.133		22.6561	5.2110%	226562	130857	1.7 1			1.0000E-04
11	3.267		1.3992	0.3218%	13992	6676	2.1 1			1.0000E-04
12	3.450		1.7876	0.4112%	17876	9248	1.9 1			1.0000E-04
13	3.833		1.0015	0.2303%	10015	4481	2.2 1			1.0000E-04
	.217		0.3564	0.0820%	3564	1527	2.3 1			1.0000E-04
	4.383		0.2788	0.0641%	2788	650	4.3 1			1.0000E-04

17	5.150	3.9962	0.9191%	39962	25082	1.0 1			1.0000E-04
18	5.300	15.7343	3.6189%	157343	81970	1.9 1			1.0000E-04
19	5.617	0.7137	0.1642%	7137	2154	3.3 1			1.0000E-04
20	5.717	5.8883	1.3543%	58883	41012	1.4 1			1.0000E-04
21	6.233	0.6688	0.1538%	6688	2372	2.8 1			1.0000E-04
22	6.667	1.4686	0.3378%	14686	10185	1.4 1			1.0000E-04
	.783	9.8242	2.2596%	98242	40826	2.4 1			1.0000E-04
	7.033	1.9313	0.4442%	19313	8651	2.2 1			1.0000E-04
25	7.200	8.0353	1.8481%	80354	52936	1.5 1			1.0000E-04
26	7.383 JP-4	0.2803	0.0645%	4964	1345	3.7 1	0	.7276	5.6477E-05
27	7.567	2.5464	0.5857%	25465	13490	1.9 1			1.0000E-04
28	7.717	1.2226	0.2812%	12226	7682	1.6 1			1.0000E-04
29	7.967	5.5767	1.2827%	55767	8864	6.3 1			1.0000E-04
30	8.183	1.7153	0.3945%	17153	6792	2.5 1			1.0000E-04
31	8.267	2.0721	0.4766%	20721	9326	2.2 1			1.0000E-04
32	8.583	2.0724	0.4767%	20724	6187	3.3 1			1.0000E-04
33	8.817	0.8817	0.2028%	8818	2468	3.6 1			1.0000E-04
34	8.933	1.0045	0.2310%	10046	4743	2.1 1			1.0000E-04
35	9.133 NAPHTHALENE	0.0929	0.0214%	2419	1811	1.3 1	0	-.7246	3.8391E-05
36	9.267	0.9067	0.2085%	9067	4301	2.1 1			1.0000E-04
37	9.350	0.3708	0.0853%	3708	1737	2.1 1			1.0000E-04
39	10.217	0.8558	0.1968%	8558	4147	2.1 1			1.0000E-04
40	10.350 DIESEL	0.2429	0.0559%	5096	3491	1.5 1	0	-2.358	4.7667E-05

TOTAL AMOUNT = 434.7789

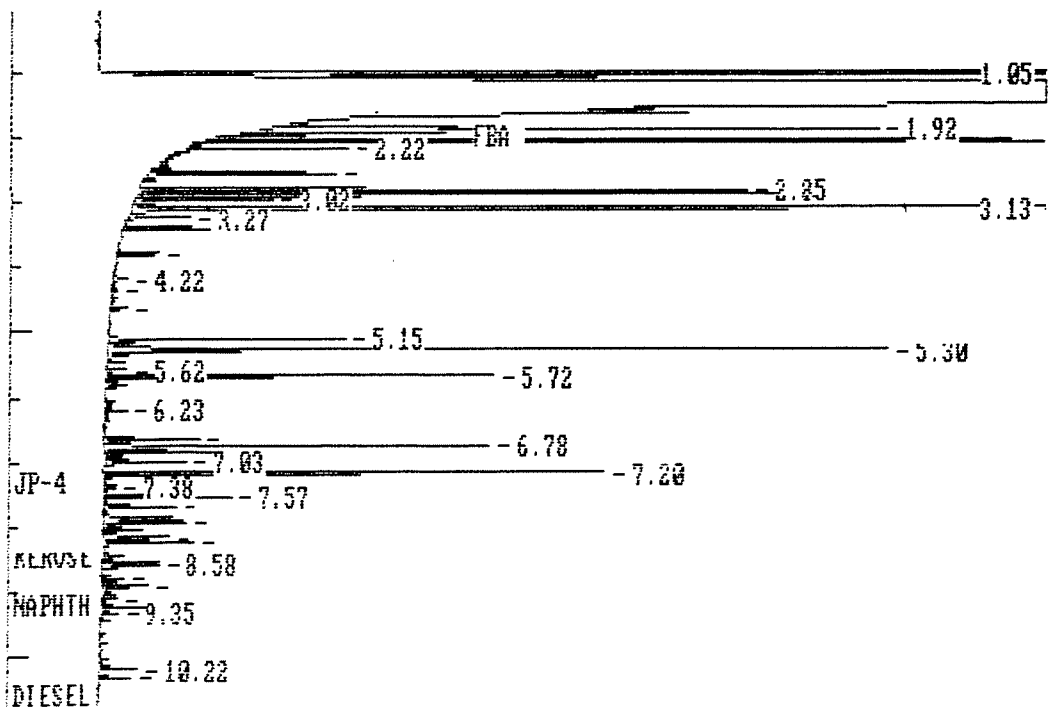
PEAKS NOT FOUND IN THIS RUN

NAME	ADJUSTED RET.TIME.	REFERENCE PEAK
KEROSENE	8.43	DIESEL

Data File = L:SM01-10.PTS Printed on 12-01-1993 at 23:21:46

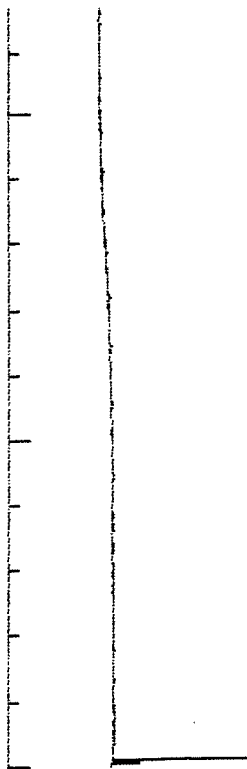
St t time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.

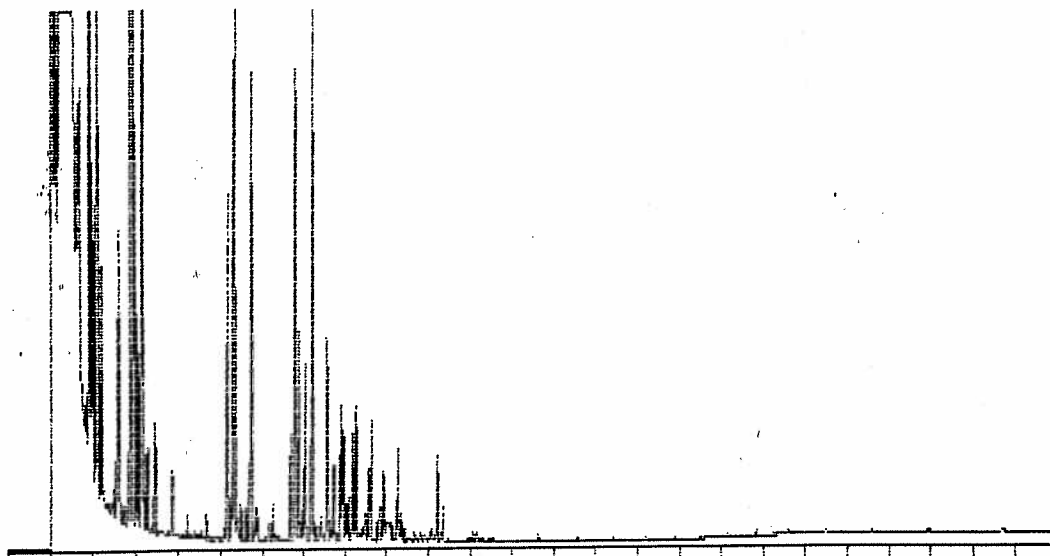
Range: 100 millivolts



003909

19





[Interface 6] 0-25 Min Scale: 100 Mu
 GASOLINE Processed: 12-01-1993 23:55:07, segment 11, cycle 11
 RAW DATA SAVED IN FILE L:SM01-11.PTS

***** AREA PERCENT REPORT *****

***** 12-01-1993 23:56:27 Version 5.1.5 *****
 * Sample Name: GASOLINE 250 PPM SV9312007 Data File: L:SM01-11 *
 * Date: 12-01-1993 23:55:07 Method: DIESEL *
 * Interface: 6 Cycle#: 11 Operator JP Channel#: 0 Vial#: N.A. *
 * Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

 * Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *
 * Solvent Description: *
 * Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *
 * Detector 0: Detector 1: *
 * Misc. Information: 536-25 INITIAL CALIBRATION *

 Starting Delay: 0.00 Run Time: 25.00

Pk No.	Ret Time	Peak Area	Area %	B L	Peak Ht.	Normalized %	Area/Height
1	1.050	3307295	43.34320	0	982192	100.000	3.4
2	1.700	117068	1.5342	1	47308	3.540	2.5
3	1.917	428079	5.6101	1	128766	12.943	3.3
4	2.100	562261	7.3686	1	359361	17.001	1.6
5	2.217	<u>73043</u>	0.9573	1	42836	2.209	1.7
6	2.600	163984	2.1491	1	53100	4.958	3.1
7	2.717	5091	0.0667	1	3218	0.154	1.6
8	2.850	251527	3.2963	1	165796	7.605	1.5
9	2.933	286920	3.7602	1	149826	8.675	1.9
10	3.017	63485	0.8320	1	39272	1.920	1.6
11	3.133	572423	7.5018	1	342295	17.308	1.7
12	3.267	35677	0.4676	1	14965	1.079	2.4
13	3.833	24771	0.3246	1	12234	0.749	2.0
14	4.200	9111	0.1194	1	3983	0.275	2.3
15	4.367	4022	0.0527	1	1594	0.122	2.5
16	4.517	4318	0.0566	1	1694	0.131	2.5
	4.667	9853	0.1291	1	4302	0.298	2.3
	4.900	2733	0.0358	1	663	0.083	4.1

A: 2045786

20	5.300	408762	5.3570	1	216887	12.359	1.9
21	5.600	9626	0.1261	1	6061	0.291	1.6
22	5.717	148340	1.9440	1	86231	4.485	1.7
23	5.867	15609	0.2046	1	5799	0.472	2.7
24	6.117	6959	0.0912	1	3286	0.210	2.1
25	6.233	14051	0.1841	1	6470	0.425	2.2
26	6.767	270879	3.5500	1	86492	8.190	3.1
27	7.017	55831	0.7317	1	32102	1.688	1.7
28	7.200	212900	2.7901	1	121093	6.437	1.8
29	7.550	63414	0.8311	1	36996	1.917	1.7
30	7.883	143410	1.8794	1	25369	4.336	5.7
31	8.250	90196	1.1820	1	24882	2.727	3.6
32	8.733	64624	0.8469	1	-1749	1.954	-36.9
33	9.250	41137	0.5391	1	17063	1.244	2.4
34	9.533	2940	0.0385	1	711	0.089	4.1
35	9.667	3956	0.0518	1	1764	0.120	2.2
36	10.067	4882	0.0640	1	2046	0.148	2.4
37	10.200	22111	0.2898	1	15683	0.669	1.4
38	10.333	13360	0.1751	1	6461	0.404	2.1
39	11.050	4513	0.0591	1	1580	0.136	2.9
40	11.167	4559	0.0597	1	1779	0.138	2.6

Total Area: 7630485 Area Reject: 2000 One sample per 1.000 sec.

EXTERNAL STANDARD TABLE

***** 12-01-1993 23:56:36 Version 5.1.5 *****

* Sample Name: GASOLINE 250 PPM SU9312007 Data File: L:SM01-11 *

* Date: 12-01-1993 23:55:07 Method: DIESEL 11-23-1993 17:55:13 # 579 *

* Interface: 6 Cycle#: 11 Operator JP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 10 Area Threshold: 1000 *

* Instrument Type: GC 3400 FID DETECTOR Column Type: DB5 .25 *

* Solvent Description: *

* Conditions: 45 20/MIN FINAL 300 HOLD 8.25 *

* Detector 0: Detector 1: *

* Misc. Information: 536-25 INITIAL CALIBRATION *

Starting Delay: 0.00 Ending retention time: 25.00

Area reject: 2000 One sample per 1.000 sec.

Amount injected: 1.00 Dilution factor: 1.00

Sample Weight: 1.00000

PEAK NUM	RET TIME	PEAK NAME	CONCENTRATION in mg/kg	NORMALIZED CONC	AREA	HEIGHT	AREA/ HEIGHT	REF PEAK	% DELTA RET TIME	CONC/AREA
1	1.050		330.7295	43.5276%	3307295	982192	3.4 0V			1.0000E-04
2	1.700		11.7068	1.5407%	117068	47308	2.5 1			1.0000E-04
3	1.917		42.8079	5.6340%	428079	128766	3.3 1			1.0000E-04
4	2.100		56.2261	7.4000%	562261	359361	1.6 1			1.0000E-04
5	2.217		7.3043	0.9613%	73043	42836	1.7 1			1.0000E-04
6	2.600		16.3984	2.1582%	163984	53100	3.1 1			1.0000E-04
7	2.717		0.5091	0.0670%	5091	3218	1.6 1			1.0000E-04
8	2.850		25.1527	3.3104%	251527	165796	1.5 1			1.0000E-04
9	2.933		28.6920	3.7762%	286920	149826	1.9 1			1.0000E-04
10	3.017		6.3485	0.8355%	63485	39272	1.6 1			1.0000E-04
	3.133		57.2423	7.5337%	572423	342295	1.7 1			1.0000E-04
	3.267		3.5677	0.4695%	35677	14965	2.4 1			1.0000E-04

003912

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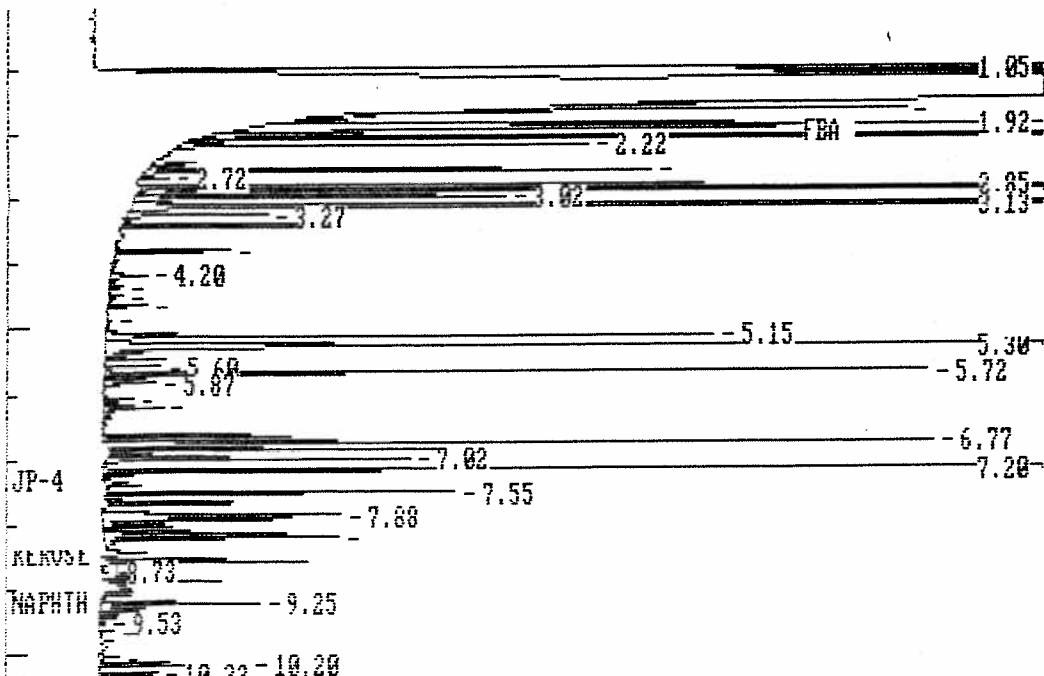
14	4.200	0.9111	0.1199%	9111	3983	2.5 1	1.0000E-04
15	4.367	0.4022	0.0529%	4022	1594	2.5 1	1.0000E-04
16	4.517	0.4318	0.0568%	4318	1694	2.5 1	1.0000E-04
17	4.667	0.9853	0.1297%	9853	4302	2.3 1	1.0000E-04
18	4.900	0.2733	0.0360%	2733	663	4.1 1	1.0000E-04
19	5.150	10.6770	1.4052%	106770	63771	1.7 1	1.0000E-04
20	5.300	40.8762	5.3798%	408762	216887	1.9 1	1.0000E-04
21	5.600	0.9625	0.1267%	9626	6061	1.6 1	1.0000E-04
22	5.717	14.8340	1.9523%	148340	86231	1.7 1	1.0000E-04
23	5.867	1.5608	0.2054%	15609	5799	2.7 1	1.0000E-04
24	6.117	0.6959	0.0916%	6959	3286	2.1 1	1.0000E-04
25	6.233	1.4050	0.1849%	14051	6470	2.2 1	1.0000E-04
26	6.767	27.0878	3.5651%	270879	86492	3.1 1	1.0000E-04
27	7.017	5.5831	0.7348%	55831	32102	1.7 1	1.0000E-04
28	7.200	21.2900	2.8020%	212900	121093	1.8 1	1.0000E-04
29	7.550	6.3414	0.8346%	63414	36996	1.7 1	1.0000E-04
30	7.883	14.3410	1.8874%	143410	25369	5.7 1	1.0000E-04
31	8.250	9.0196	1.1871%	90196	24882	3.6 1	1.0000E-04
32	8.733	6.4623	0.8505%	64624	-1749	-36.9 1	1.0000E-04
33	9.250 NAPHTHALENE	1.5793	0.2078%	41137	17063	2.4 1	0 .5434 3.8391E-05
34	9.533	0.2940	0.0387%	2940	711	4.1 1	1.0000E-04
35	9.667	0.3955	0.0521%	3956	1764	2.2 1	1.0000E-04
36	10.067	0.4882	0.0643%	4882	2046	2.4 1	1.0000E-04
37	10.200	2.2111	0.2910%	22111	15683	1.4 1	1.0000E-04
38	10.333 DIESEL	0.6368	0.0838%	13360	6461	2.1 1	0 -2.515 4.7667E-05
39	11.050	0.4512	0.0594%	4513	1580	2.9 1	1.0000E-04
40	11.167	0.4559	0.0600%	4559	1779	2.6 1	1.0000E-04

TOTAL AMOUNT = 759.8149

PEAKS NOT FOUND IN THIS RUN

N	ADJUSTED RET.TIME.	REFERENCE PEAK
4	7.33	DIESEL
KEROSENE	8.43	DIESEL

Data File = L:SM01-11.PTS Printed on 12-01-1993 at 23:57:01
Start time: 0.00 min. Stop time: 25.00 min. Offset: 0 mv.
Full Range: 100 millivolts



003913

23

$\bar{F} = 11.17$

003914

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APPENDIX F
VOLATILES (EPA 524.2)

003915

MDL Summary

(Inst 537-03)

003916

REPORT OF MDL RESULTS

ANALYTER	CONC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AUG	SD	MDL	RDL(AQ)	RDL(HAQ)
4.2/UOC 537-03													
1,1,2-Tetrachloroethane	0.50	0.46	0.54	0.49	0.47	0.49	0.51	0.46	0.48571	0.029114	0.091418	0.2 ug/L	N/A
1,1-Trichloroethane	0.50	0.50	0.56	0.50	0.49	0.54	0.54	0.49	0.517143	0.028702	0.090124	0.2 ug/L	N/A
1,1,2,2-Tetrachloroethane	0.50	0.60	0.61	0.65	0.61	0.59	0.67	0.56	0.612857	0.036839	0.115674	0.2 ug/L	N/A
1,1,2-Trichloroethane	0.50	0.46	0.48	0.48	0.48	0.47	0.55	0.44	0.480000	0.034156	0.107250	0.2 ug/L	N/A
1-Dichloroethane	0.50	0.48	0.52	0.50	0.49	0.51	0.52	0.47	0.498571	0.019518	0.061287	0.2 ug/L	N/A
1-Dichloroethene	0.50	0.59	0.61	0.53	0.53	0.60	0.54	0.54	0.562857	0.035456	0.111332	0.2 ug/L	N/A
1-Dichloropropene	0.50	0.50	0.54	0.49	0.47	0.52	0.53	0.49	0.505714	0.025071	0.078723	0.2 ug/L	N/A
1,2,3-Trichlorobenzene	0.50	0.70	0.74	0.75	0.71	0.80	0.76	0.65	0.730000	0.048305	0.151678	0.2 ug/L	N/A
1,2,3-Trichloropropane	0.50	0.52	0.52	0.50	0.49	0.53	0.55	0.53	0.520000	0.020000	0.062800	0.2 ug/L	N/A
1,2,4-Trichlorobenzene	0.50	0.75	0.73	0.68	0.72	0.68	0.70	0.64	0.700000	0.036968	0.116080	0.2 ug/L	N/A
1,2,4-Trimethylbenzene	0.50	0.57	0.62	0.59	0.55	0.61	0.62	0.56	0.588571	0.029114	0.091418	0.2 ug/L	N/A
1,2-Dibromo-3-chloropropane	0.50	0.77	0.60	0.87	0.77	0.75	0.74	0.90	0.771429	0.097541	0.306279	0.5 ug/L	N/A
1,2-Dibromoethane	0.50	0.47	0.46	0.54	0.49	0.48	0.54	0.48	0.494286	0.032587	0.102323	0.2 ug/L	N/A
1,2-Dichloroethane	0.50	0.43	0.47	0.47	0.46	0.46	0.50	0.45	0.462857	0.021381	0.067136	0.2 ug/L	N/A
1,2-Dichlorobenzene	0.50	0.60	0.63	0.63	0.60	0.61	0.67	0.60	0.620000	0.025820	0.081075	0.2 ug/L	N/A
1,2-Dichloropropane	0.50	0.50	0.53	0.51	0.48	0.50	0.54	0.47	0.504286	0.025071	0.078723	0.2 ug/L	N/A
1,3,5-Trimethylbenzene	0.50	0.57	0.60	0.58	0.56	0.64	0.60	0.53	0.582857	0.034983	0.109847	0.2 ug/L	N/A
1,3-Dichlorobenzene	0.50	0.57	0.61	0.59	0.58	0.58	0.59	0.54	0.580000	0.021602	0.067830	0.2 ug/L	N/A
1,3-Dichloropropane	0.50	0.47	0.47	0.50	0.45	0.47	0.52	0.45	0.475714	0.025727	0.080783	0.2 ug/L	N/A
1,4-Dichlorobenzene	0.50	0.57	0.60	0.59	0.59	0.62	0.62	0.56	0.592857	0.022887	0.071865	0.2 ug/L	N/A
2,2-Dichloropropane	0.50	0.50	0.53	0.48	0.46	0.49	0.50	0.46	0.488571	0.024785	0.077825	0.2 ug/L	N/A
2-Chlorotoluene	0.50	0.51	0.51	0.53	0.53	0.55	0.54	0.46	0.518571	0.029681	0.093198	0.2 ug/L	N/A
4-Chlorotoluene	0.50	0.56	0.62	0.61	0.56	0.59	0.63	0.57	0.591429	0.029114	0.091418	0.2 ug/L	N/A
Bromobenzene	0.50	0.58	0.64	0.68	0.59	0.60	0.63	0.55	0.602857	0.032514	0.102094	0.2 ug/L	N/A
Bromochloromethane	0.50	0.51	0.53	0.49	0.49	0.52	0.57	0.48	0.512857	0.030998	0.097145	0.2 ug/L	N/A
Bromodichloromethane	0.50	0.45	0.49	0.48	0.46	0.45	0.49	0.43	0.464286	0.022991	0.072192	0.2 ug/L	N/A
Bromomethane	0.50	0.55	0.80	0.60	0.54	0.67	0.66	0.54	0.622857	0.095344	0.299880	0.5 ug/L	N/A

003917

r No.: 69307049
rted: 07.13.93

REPORT OF MDL RESULTS

Page 2

METER	CONC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AVG	SD	MDL	RDL(AQ)	RDL(MAQ)
2/UBC, cont'd													
benzene	0.50	0.54	0.59	0.52	0.52	0.57	0.57	0.50	0.544286	0.033094	0.103915	0.2 ug/L	N/A
benzofuran	0.50	0.40	0.44	0.40	0.40	0.39	0.44	0.35	0.402857	0.030938	0.097145	0.2 ug/L	N/A
benzobenzene	0.50	0.48	0.51	0.49	0.47	0.49	0.51	0.45	0.485714	0.021492	0.067485	0.2 ug/L	N/A
benzotetrachloride	0.50	0.47	0.52	0.48	0.47	0.51	0.50	0.47	0.488571	0.021157	0.066433	0.2 ug/L	N/A
benzothane	0.50	0.64	0.80	0.69	0.65	0.67	0.70	0.60	0.678571	0.063095	0.198118	0.2 ug/L	N/A
benzofuran	0.50	0.48	0.53	0.51	0.49	0.51	0.53	0.49	0.505714	0.019881	0.062426	0.2 ug/L	N/A
benzomethane	0.50	0.52	0.56	0.58	0.56	0.59	0.59	0.60	0.571429	0.027843	0.085857	0.2 ug/L	N/A
benzochloromethane	0.50	0.44	0.44	0.46	0.43	0.45	0.47	0.41	0.442857	0.019760	0.062046	0.2 ug/L	N/A
benzomethane	0.50	0.44	0.50	0.47	0.50	0.46	0.47	0.38	0.460000	0.041231	0.129465	0.2 ug/L	N/A
benzobenzene	0.50	0.53	0.53	0.51	0.49	0.50	0.52	0.46	0.505714	0.025071	0.078723	0.2 ug/L	N/A
benzobenzene	0.50	0.48	0.51	0.48	0.47	0.49	0.42	0.47	0.474286	0.027603	0.086673	0.2 ug/L	N/A
benzobenzene	0.50	0.66	0.68	0.66	0.67	0.66	0.69	0.66	0.668571	0.012150	0.038151	0.2 ug/L	N/A
benzobenzene	0.50	0.59	0.63	0.61	0.59	0.64	0.63	0.57	0.608571	0.026095	0.081938	0.2 ug/L	N/A
benzobenzene	0.50	0.82	0.86	0.85	0.86	0.84	0.95	0.85	0.861429	0.041404	0.130009	0.2 ug/L	N/A
benzobenzene	0.50	0.60	0.59	0.58	0.56	0.57	0.59	0.54	0.575714	0.020702	0.065004	0.2 ug/L	N/A
benzobenzene	0.50	0.57	0.61	0.57	0.57	0.59	0.59	0.55	0.578571	0.019518	0.061287	0.2 ug/L	N/A
benzobenzene	0.50	0.64	0.70	0.74	0.68	0.61	0.74	0.63	0.677143	0.052508	0.164875	0.2 ug/L	N/A
benzobenzene	0.50	0.43	0.50	0.47	0.45	0.45	0.47	0.43	0.457143	0.024976	0.078425	0.2 ug/L	N/A
benzobenzene	0.50	0.51	0.57	0.51	0.52	0.51	0.58	0.49	0.527143	0.034017	0.106813	0.2 ug/L	N/A
benzobenzene	0.50	0.54	0.57	0.53	0.52	0.55	0.53	0.46	0.528571	0.034365	0.107906	0.2 ug/L	N/A
benzobenzene	0.50	0.53	0.56	0.54	0.51	0.55	0.56	0.51	0.537143	0.021381	0.067136	0.2 ug/L	N/A
benzobenzene	0.50	0.52	0.53	0.51	0.49	0.52	0.51	0.48	0.508571	0.017728	0.055666	0.2 ug/L	N/A
benzobenzene	0.50	0.69	0.75	0.69	0.63	0.70	0.73	0.63	0.688571	0.045617	0.143237	0.2 ug/L	N/A
benzobenzene	0.50	0.52	0.56	0.51	0.50	0.51	0.55	0.50	0.521429	0.024103	0.075683	0.2 ug/L	N/A
benzobenzene	0.50	0.47	0.50	0.47	0.46	0.47	0.44	0.45	0.465714	0.019024	0.057335	0.2 ug/L	N/A
benzobenzene	1.00	0.99	0.98	0.97	0.93	0.93	1.00	0.90	0.957143	0.037289	0.117087	0.2 ug/L	N/A
benzobenzene	0.50	0.50	0.53	0.51	0.48	0.50	0.51	0.47	0.500000	0.020800	0.062800	0.2 ug/L	N/A

003918

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REPORT OF MDL RESULTS

Page 3

METER	CONC	REPL1	REPL2	REPL3	REPL4	REPL5	REPL6	REPL7	AUG	SD	MDL	RDL(AQ)	RDL(MAQ)
2/UBC, cont'd													
Isopropyl toluene	0.50	0.57	0.59	0.59	0.54	0.60	0.60	0.54	0.575714	0.026367	0.082792	0.2 ug/L	N/A
c-Butylbenzene	0.50	0.60	0.62	0.61	0.58	0.61	0.63	0.57	0.602857	0.021381	0.067136	0.2 ug/L	N/A
mms-1,2-Dichloroethene	0.50	0.52	0.59	0.58	0.52	0.61	0.54	0.50	0.544286	0.040356	0.126718	0.2 ug/L	N/A
mms-1,3-Dichloropropene	0.50	0.43	0.51	0.48	0.45	0.45	0.43	0.42	0.452857	0.031997	0.100471	0.2 ug/L	N/A
rt-Butylbenzene	0.50	0.56	0.61	0.61	0.57	0.61	0.61	0.55	0.588571	0.027343	0.085857	0.2 ug/L	N/A

003919

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 815 SAS No.: _____ SDG No.: _____
 Lab File ID: V2221 BFB Injection Date: 12/3/93
 Instrument ID: VDA3 BFB Injection Time: 9:39
 GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	19.5
75	30.0 - 66.0% of mass 95	49.3
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	12.3 () 1
174	50.0 - 120.0% of mass 95	58.5
175	4.0 - 9.0 % of mass 174	6.1 () 1
176	93.0 - 101.0% of mass 174	98.6 () 1
177	5.0 - 9.0% of mass 176	7.1 () 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD010	VSTD010	V2222	12/3/93	10:03
02	Method Blank	MB 815	V2224	12/3/93	11:20
03	GW-2	69311378-1	V2225	12/3/93	11:58
04	GW-2 MS	69311378-1MS	V2228	12/3/93	12:54
05	GW-2 MSD	69311378-1MSD	V2229	12/3/93	14:32
06	GW-5	69311378-4	V2230	12/3/93	15:11
07	LCS 815	LCS 815	V2231	12/3/93	15:49
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3A
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 815 SAS No.: _____ SDG No.: _____
 Matrix Spike - EPA Sample No.: GW-2

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	4.00	0	3.88	97	61-145
Trichloroethene	4.00	29	30.01	91	71-120
Benzene	4.00	0	3.76	94	76-127
Toluene	4.00	0	4.00	100	76-125
Chlorobenzene	4.00	0	3.67	92	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethene	4.00	4.01	100	3	14	61-145
Trichloroethene	4.00	33.9	103	12	14	71-120
Benzene	4.00	3.87	97	3	11	76-127
Toluene	4.00	4.31	108	8	13	76-125
Chlorobenzene	4.00	3.94	99	3	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
 Spike Recovery: 0 out of 5 outside limits

COMMENTS: _____

2A
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 815 SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	Method Blank	100	117	97		0
02	GW-2	100	122	91		0
03	GW-2 MS	97	114	93		0
04	GW-2 MSD	99	114	93		0
05	GW-5	99	122	94		0
06	LCS815	99	114	95		0
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QC LIMITS

SMC1 (TOL) = Toluene-d8 (39-144)
 SMC2 (BFB) = Bromofluorobenzene (32-138)
 SMC3 (DCE) = 1,2-Dichloroethane-d4 (37-144)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

003922

3/90

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

Name: BC Analytical Contract: Method Blank

Lab Code: Case No.: 815 SAS No.: SDG No.:

Lab File ID: V2224 Lab Sample ID: MB815

Date Analyzed: 12/3/93 Time Analyzed: 11:20

GC Column: RTx502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	GW-2	69311378-1	V2225	11:58
02	GW-2MS	69311378-1MS	V2228	13:54
03	GW-2MSD	69311378-1MSD	V2229	14:32
04	GW-5	69311378-4	V2230	15:11
05	LCS 815	LCS 815	V2231	15:49
06				
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COMMENTS:

003923

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 815 SAS No.: _____ SDG No.: _____
 Lab File ID (Standard): V2222 Date Analyzed: 12/3/93
 Instrument ID: 101A3 Time Analyzed: 10:03
 GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

	IS1 (BCM) AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (CBZ) AREA #	RT #
12 HOUR STD	134834	7.82	1195613	12.93	514321	27.22
UPPER LIMIT	269668	8.32	2,371,386	13.43	1,028,642	27.72
LOWER LIMIT	67417	7.32	597847	12.43	257161	26.72
EPA SAMPLE NO.						
01 Method Blank	82975	7.83	683554	12.95	266339	27.23
02 GW-2	120436	7.85	1032087	12.95	372085	27.23
03 GW-2ms	127203	7.84	1100357	12.95	47033	27.23
04 GW-2ms D	139815	7.84	1147677	12.96	460646	27.24
05 GW-5	119436	7.85	1037255	12.96	374034	27.23
06 LCS 815	141818	7.86	1250793	12.96	487588	27.22
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IS1 (BCM) = Bromochloromethane
 IS2 (DFB) = 1,4-Difluorobenzene
 IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = - 50% of internal standard area
 RT UPPER LIMIT = +0.50 minutes of internal standard RT
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 816 SAS No.: _____ SDG No.: _____
 Lab File ID: V2232 BFB Injection Date: 12/6/93
 Instrument ID: VOA3 BFB Injection Time: 8:48
 GC Column: BTX502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	19.3
75	30.0 - 66.0% of mass 95	49.5
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.01) 1
174	50.0 - 120.0% of mass 95	54.0
175	4.0 - 9.0 % of mass 174	8.01) 1
176	93.0 - 101.0% of mass 174	99.6) 1
177	5.0 - 9.0% of mass 176	7.6) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD010	VSTD010	V2233	12/6/93	9:17
02	Method Blank	MB 816	V2235	12/6/93	10:34
03	GW-3	G9311378-2	V2236	12/6/93	11:12
04	GW-4	G9311378-3	V2237	12/6/93	11:51
05	Equipment Blank	G9311378-6	V2239	12/6/93	13:08
06	Trip Blank	G9311378-7	V2240	12/6/93	13:46
07	ICS 816	ICS 816	V2242	12/6/93	15:03
08	GW-6	G9311378-5	V2243	12/6/93	15:52
09	GW-3MS	G9311378-2MS	V2244	12/6/93	16:30
10	GW-3MSD	G9311378-2MSD	V2245	12/6/93	17:09
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22					

2A
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 816 SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	Method Blank	100	119	96		0
02	GW-3	98	121	93		0
03	GW-4	99	120	96		0
04	Equipment Blank	100	120	99		0
05	Trip Blank	99	120	95		0
06	LCS 816	98	113	95		0
07	GW-6	98	122	95		0
08	GW-2ms	99	109	96		0
09	GW-2msD	99	113	96		0
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QC LIMITS

SMC1 (TOL) = Toluene-d8 (39-144)
 SMC2 (BFB) = Bromofluorobenzene (32-138)
 SMC3 (DCE) = 1,2-Dichloroethane-d4 (37-144)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

003926

3A
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 816 SAS No.: _____ SDG No.: _____
 Matrix Spike - EPA Sample No.: GW-3

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	4.00	0.4	3.99	91	61-145
Trichloroethene	4.00	15	17.4	92	71-120
Benzene	4.00	0	3.48	87	76-127
Toluene	4.00	0.2	3.95	94	76-125
Chlorobenzene	4.00	0	3.64	91	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethene	4.00	4.23	96	5	14	61-145
Trichloroethene	4.00	18.1	95	3	14	71-120
Benzene	4.00	3.78	95	9	11	76-127
Toluene	4.00	3.93	94	0	13	76-125
Chlorobenzene	4.00	3.62	91	0	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
 Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

003927

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

Lab Name: BC Analytical Contract: _____

Lab Code: _____ Case No.: 816 SAS No.: _____ SDG No.: _____

Lab File ID: V2235 Lab Sample ID: MB816

Date Analyzed: 12/6/93 Time Analyzed: 10:34

GC Column: RT1502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	GW-3	69311378-2	V2236	11:12
02	GW-4	69311378-3	V2237	11:51
03	Equipment Blank	69311378-6	V2239	13:08
04	Trip Blank	69311378-7	V2240	13:46
05	LCS 816	LCS 816	V2242	15:03
06	GW-6	69311378-5	V2243	15:52
07	GW-3ms	69311378-2ms	V2244	16:30
08	GW-3msp	69311378-2msp	V2245	17:09
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CC ENTS:

003928

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 816 SAS No.: _____ SDG No.: _____
 Lab File ID (Standard): V2233 Date Analyzed: 12/16/93
 Instrument ID: VOA3 Time Analyzed: 9:17
 GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

	IS1 (BCM) AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (CBZ) AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
12 HOUR STD	130352	7.83	1150084	12.93	503539	27.23
UPPER LIMIT	260704	8.33	2300188	13.43	1007078	27.73
LOWER LIMIT	65176	7.33	575047	12.43	251770	26.73
=====	=====	=====	=====	=====	=====	=====
EPA SAMPLE NO.						
=====	=====	=====	=====	=====	=====	=====
01 Method Blank	82102	7.84	691032	12.96	268384	27.23
02 GW-3	123024	7.84	1110069	12.95	385827	27.22
03 GW-4	125965	7.85	1117161	12.95	413839	27.24
04 Equipment Blank	130327	7.85	1124163	12.96	429494	27.24
05 Trip Blank	123756	7.86	1083364	12.97	399985	27.24
06 LCS816	140759	7.85	1253292	12.96	491584	27.24
07 GW-10	103451	7.85	934272	12.96	337117	27.24
08 GW-3ms	140460	7.85	1173806	12.97	493994	27.24
09 GW-3msD	156194	7.85	1379965	12.98	544052	27.24
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IS1 (BCM) = Bromochloromethane
 IS2 (DFB) = 1,4-Difluorobenzene
 IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = - 50% of internal standard area
 RT UPPER LIMIT = +0.50 minutes of internal standard RT
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Bc Analytical Contract: _____
 Lab Code: _____ Case No.: 822 SAS No.: _____ SDG No.: _____
 Lab File ID: V2345 BFB Injection Date: 12/14/93
 Instrument ID: VOA3 BFB Injection Time: 10:28
 GC Column: ATK 502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	18.6
75	30.0 - 66.0% of mass 95	47.7
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.2 () 1
174	50.0 - 120.0% of mass 95	55.4
175	4.0 - 9.0 % of mass 174	8.6 () 1
176	93.0 - 101.0% of mass 174	97.2 () 1
177	5.0 - 9.0% of mass 176	6.4 () 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VST0 010	VST0 010	V2346	12/14/93	10:59
02	Method Blank	MB822	V2348	12/14/93	12:17
03	GW-1	G9312066-1	V2349	12/14/93	12:56
04	LCS 822	LCS 822	V2354	12/14/93	16:10
05	LCS Dup 822	LCS Dup 822	V2355	12/14/93	16:59
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2A
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 822 SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	GW-1	97	122	91		0
02	LCS 822	98	115	93		0
03	LCS Dup 822	100	116	91		0
04	Method Blank	100	117	94		0
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QC LIMITS

SMC1 (TOL) = Toluene-d8 (39-144)
 SMC2 (BFB) = Bromofluorobenzene (32-138)
 SMC3 (DCE) = 1,2-Dichloroethane-d4 (39-144)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

003931

3/90

WATER VOLATILE ^{3A} LCS-1 LCS - DUPLICATE RECOVERY

Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 822 SAS No.: _____ SDG No.: _____
 Matrix Spike - EPA Sample No.: N/A

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	4	0	3.90	98	(53-128)
Trichloroethene	4	0	3.80	95	(53-125)
Benzene	4	0	3.57	89	(54-137)
Toluene	4	0	3.67	92	(64-136)
Chlorobenzene	4	0	3.52	88	(61-159)

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethene	4	4.01	100	2	14	(53-128)
Trichloroethene	4	4.06	102	7	14	(53-125)
Benzene	4	3.73	93	4	11	(54-137)
Toluene	4	3.91	98	6	13	(64-136)
Chlorobenzene	4	3.74	95	8	13	(61-159)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: _____ out of _____ outside limits
 Spike Recovery: _____ out of _____ outside limits

COMMENTS: _____

003932

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

Name: Bc Analytical

Contract: _____

Method Blank

Lab Code: _____ Case No.: 822

SAS No.: _____ SDG No.: _____

Lab File ID: V2348

Lab Sample ID: MB822

Date Analyzed: 12/14/93

Time Analyzed: 12:17

GC Column: ATX502.2 ID: 0.53 (mm)

Heated Purge: (Y/N) N

Instrument ID: VOA3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	<u>GW-1</u>	<u>GF32066-1</u>	<u>V2349</u>	<u>12:56</u>
02	<u>LCS822</u>	<u>LCS822</u>	<u>V2354</u>	<u>16:10</u>
03	<u>LCS Dup 822</u>	<u>LCS Dup 822</u>	<u>V2355</u>	<u>16:59</u>
04				
05				
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MENTS:

003933

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: BC Analytical Contract: _____
 Lab Code: _____ Case No.: 822 SAS No.: _____ SDG No.: _____
 Lab File ID (Standard): V2346 Date Analyzed: 12/14/93
 Instrument ID: VOA3 Time Analyzed: 10:59
 GC Column: RTX3022 ID: 0.53 (mm) Heated Purge: (Y/N) N

	IS1 (DCM) AREA #	RT #	IS2 (FBZ) AREA #	RT #	IS3 (PCB) AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
12 HOUR STD	137887	7.89	1133719	13.00	500097	27.28
UPPER LIMIT	275774	8.34	2267438	13.50	1000194	27.78
LOWER LIMIT	68944	7.39	566860	12.50	250049	26.78
=====	=====	=====	=====	=====	=====	=====
EPA SAMPLE NO.						
=====	=====	=====	=====	=====	=====	=====
01 Method Blank	154140	7.89	1355590	13.00	518683	27.28
02 GW-1	119063	7.88	1129610	12.99	386245	27.26
03 LCS822	146715	7.89	1300078	13.00	490332	27.27
04 LCS20822	149627	7.88	1341048	12.99	502872	27.28
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IS1 (DCM) = Methylene Chloride-d2
 IS2 (FBZ) = Fluorobenzene
 IS3 (PCB) = 1,2 Dichlorobenzene-14

AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = - 50% of internal standard area
 RT UPPER LIMIT = +0.50 minutes of internal standard RT
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

**Standard Operating Procedure MS00792.G - Volatile Organics in Drinking Water by
GC/MS**

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

SOP# MS00792.G
Tier 2 Rev. 12/7/92
Page 1 of 8

**VOLATILE ORGANIC COMPOUNDS
IN DRINKING WATERS BY GC/MS**

Analytes

Chloromethane	1,1,1,2-Tetrachloroethane
Vinyl chloride	Ethylbenzene
Bromomethane	m- and p-Xylene Isomers
Chloroethane	o-Xylene
Trichlorofluoromethane	Styrene
1,1-Dichloroethene	Bromoform
Methylene chloride	Isopropylbenzene
trans-1,2-Dichloroethene	1,1,2,2-Tetrachloroethane
1,1-Dichloroethane	Bromobenzene
2,2-Dichloropropane	1,2,3-Trichloropropane
cis-1,2-Dichloroethene	N-Propylbenzene
Chloroform	2-Chlorotoluene
Bromochloromethane	1,3,5-Trimethylbenzene
1,1,1-Trichloroethane	4-Chlorotoluene
Carbon Tetrachloride	tert-Butylbenzene
1,1-Dichloropropene	1,2,4-Trimethylbenzene
Benzene	sec-Butylbenzene
1,2-Dichloroethane	p-Isopropyl toluene
Trichloroethene	1,3-Dichlorobenzene
1,2-Dichloropropane	1,4-Dichlorobenzene
Bromodichloromethane	N-Butylbenzene
Dibromomethane	1,2-Dichlorobenzene
trans-1,3-Dichloropropene	1,2-Dibromo-3-chloropropane
1,2,4-Trichlorobenzene	Chlorobenzene
cis-1,3-Dichloropropene	Hexachlorobutadiene
Toluene	Naphthalene
1,1,2-Trichloroethane	1,2,3-Trichlorobenzene
Tetrachloroethene	Freon 113
1,3-Dichloropropane	1,2-Dibromoethane
Dibromochloromethane	

A. Summary

Volatile organic compounds in drinking water samples are removed by the purge and trap method and injected onto a gas chromatograph interfaced to a mass spectrometer. The components are separated and detected, providing a qualitative and quantitative analysis.

Safety

1. Prepare all standards in a hood.

2. Wear gloves and safety goggles when handling standards and samples.
3. When handling high concentrations, a NIOSH/MESA approved toxic gas respirator should be worn.

C. Apparatus

1. Sample Bottles: 40 mL vials with Teflon lined caps, precleaned (I-Chem, Hayward, CA)
2. Microsyringes: 5-uL, 10-uL, 25-uL, 50-uL, 100-uL, 250-uL, 500-uL, 1000-uL.
3. Syringe valve: Two-way, with Luer ends.
4. Syringe: 30-mL.
5. Disposable pipets.
6. Volumetric flasks.
7. Analytical balance (± 0.0001 g).
8. Gas Chromatograph/Mass Spectrometer:

A GC/MS system with the following capabilities:
Temperature programmable gas chromatograph; mass spec scanning from 35-260 m/z every 1 second, using 70 volts electron energy in the EI mode; GC/MS interface made of glass; data system allowing continuous acquisition; software allowing data integration and acquisition; EPA/NIH mass spectral library available.

Finnigan Incos 50, OWA and 5100 and Hewlett-Packard 5970B and 5988 all meet the above specifications.

9. GC Columns:

30-m x 0.53 mm I.D. DB 624, 105-m x 0.53 mm I.D.
Rtx-502.2, or equivalent

10. Purge and Trap unit:

The sample purger and the desorber must all be configured according to section 4.11 of SW-846.

The three-stage trap supplied by Supelco, Bellefonte, PA. satisfies the requirement.

The purge and trap units, manufactured by Tekmar, Cincinnati, OH., and O.I. Corporation, College Station, Texas, can be configured to meet the specifications.

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11. Autosampler with spargers

D. Reagents

1. Reagent water:

Deionized water which has been heated and purged for a minimum of 30 minutes to remove all volatile organic contaminants.

2. Methanol (Burdick and Jackson purge and trap grade)

3. Stock Standard Solutions: commercially available solutions of mixed volatiles, or high-concentration solutions prepared from the neat volatile compounds.

4. Internal Standards

A mixture of three compounds in methanol, added to all samples prior to analysis, by which the detected compounds are quantitated. Those compounds are: Methylene chloride-d₂, Fluorobenzene, and 1,2-Dichlorobenzene-d₄. Store working solution in teflon-sealed Mininert screw-cap vial at 4 degrees C. Dispose of appropriately and replace after six months.

5. Surrogate Standards

A mixture of three additional compounds in methanol, added to all samples prior to analysis to monitor extraction/purge and trap efficiency, system performance, and matrix effects. Those compounds are: 4-Bromofluorobenzene, 1,2-Dichloroethane-d₄, and Toluene-d₈. Store working solution in teflon-sealed Mininert screw-cap vial at 4 degrees C. Dispose of appropriately and replace after six months.

6. Matrix Spiking Solution:

The matrix spiking solution must come from a source separate from the calibration standards. Perkin Elmer mixes A and B cover the compounds of interest.

Store working solution in teflon-sealed Mininert screw-cap vial at 4 degrees C. Dispose of appropriately and replace after six months.

7. Inert gas: helium or nitrogen (99.99% pure).

8. Helium carrier gas, ultra-high purity.

E. Procedure

1. Demonstrate that the GC/MS system meets the ion abundance criteria in section F.5 by analyzing 25 ng of BFB initially, and every 8 hours thereafter.
2. After meeting the BFB criteria, the GC/MS system must be initially calibrated at a minimum of five concentration levels.
3. Run a multi-point calibration curve for each compound every six months, or more frequently as required, at concentration levels between 2 and 30 ug/L for each compound, by dilution of the calibration standard stocks with reagent water.
4. Analyze each calibration standard and calculate the response factors (RF) for each compound at each concentration level. Then calculate the average RF for each compound. The percent relative standard deviation [$\%RSD = SD/avg\ RF \times 100$] of the RF's must be less than 30%.
5. Analyze a continuing calibration standard every 8-hour period. Dilute appropriate amounts of the standard stocks with reagent water in a volumetric flask. Fill a 25-mL syringe with the standard and add the designated amount of internal standards and surrogates through the valve. Transfer the contents to a purge vessel and run the standard.
6. Calculate the response factor for each compound. The RF's should differ by less than 30 percent from the average RF in the initial calibration.
7. Preparation and Analysis of Samples
 - a. Aqueous samples are not extracted. The samples are stored at 4 degrees C in 40 mL vials with no headspace until analysis. The holding time expires 14 days from the date of sampling.
 - b. Run a method blank by measuring 25 mL reagent water in a 30-mL glass syringe. Inject the designated amount of surrogate and internal standard through the valve into the sample. Then inject the contents through the Luer valve into the purging vessel of the purge and trap unit.
 - c. Measure a 25-mL aliquot of sample in a 30-mL glass syringe equipped with a Luer end and closed syringe valve. Inject the designated amount of surrogate and internal standard through the valve into the sample. Then inject the contents through the Luer valve into

the purging vessel of the purge and trap unit.

- d. Run a matrix spike and matrix spike duplicate by measuring additional 25-mL portions of a sample in the glass syringe. Then inject 5 uL of each spiking standard mix A and B and the designated amount of the surrogate and internal standard through the valve into the sample. Then inject the contents through the Luer valve into the purging vessel of the purge and trap unit.
 - e. Prepare an LCS. Dilute the LCS stock solutions in a volumetric flask. Measure a 25-mL aliquot in a 30-mL glass syringe. Inject the designated amount of surrogate and internal standard through the valve into the syringe. Then inject the contents into the purging vessel.
 - f. When there are matrix interferences or compounds are detected above the calibration range, dilutions will be made with reagent water in the 30-mL glass syringe. The dilutions will be made so that the detected compounds will fall into the upper half of the calibration range.
 - g. Run the samples, spikes and LCS.
8. Autosampler/Manual Injection Sequence

The GC/MS system is calibrated by the continuing calibration standard for a 8 hour period, once the CCC and SPCC criteria are met, as defined in section F. A typical batch sequence is as follows:

Sequence #	Sample Description
1	25 ng BFB
2	Continuing calibration standard
3	Reagent (method) blank
4-17	Samples, matrix spike, and matrix spike duplicate
18	LCS

F. Quality Control

1. An initial demonstration of laboratory capability is conducted as per Method 524.2, Revision 3.0.
2. The analytical batch is defined as a group of samples of similar matrix type analyzed in sequence within 8 hours of the purged BFB standard. The batch includes blanks, standards, and QC checks.
3. The following will be run within each analytical batch as

minimum QC requirements:

- a. Reagent (method) Blank
 - b. Continuing Calibration Check
 - c. Matrix Spiked Sample
 - d. Matrix Spiked Sample in Duplicate
 - e. Laboratory Control Standard
4. The maximum number of actual samples in a batch is determined by the 8 hour time limit, beginning with the injection of BFB. All QC analyses must be injected within that 8 hour period. The minimum batch size is one sample.
 5. The BFB ion abundance criteria and sensitivity must be met before analysis can proceed.

The ion abundance criteria are:

mass	ion abundance
50	15 to 40% of mass 95
75	30 to 60% of mass 95
95	base peak, 100% relative abundance
96	5 to 9% of mass 95
173	less than 2% of mass 174
174	greater than 50% of mass 95
175	5 to 9% of mass 174
176	95 to 101% of mass 174
177	5 to 9% of mass 176

If the criteria are not met, then the instrument must be retuned, or the source must be cleaned.

6. If the recovery of any compound in the matrix spike falls outside of control limits, then the recovery for that compound in the LCS must be checked. If the LCS recovery is in control, results may be reported. If the LCS recovery is out of control, no positive results may be reported for that compound.
7. For the initial calibration, the percent relative

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standard deviation [%RSD = (SD/avg RF) x 100] of the RF's must not exceed 30 percent. If these criteria are not met, troubleshoot the instrument and recalibrate.

8. For the continuing calibration, the response factors should differ from the average response factor in the initial calibration by less than 30%. If more than ten percent of the compounds are out, recalibrate.
9. If more than one surrogate recovery for any sample are out of control, then re-run that sample.
10. If two or more surrogate recoveries in a method blank or LCS are out of control, prepare a new surrogate standard.
11. The internal standard area counts in any sample must fall between 50 and 200 percent of the internal standard area in the continuing calibration for that batch. If not, document the failure and re-run the sample.

G. Calculations and Data Review

1. Use the internal standard method of quantitation with Methylene chloride-d2, Fluorobenzene, and 1,2-Dichlorobenzene. Use the internal standard which is closest in retention time to the corresponding analyte.
2. Response factors (RF) are calculated for each compound at each calibration concentration as follows:

$$RF = \frac{(As) (Cs)}{(Ais) (Cs)}$$

Where A is the area of the quantitation ion of each compound, C is the concentration, and (s) and (is) denote the compound being measured and the internal standard, respectively.

3. Once a compound has been identified in a sample (see 4 below), its concentration is calculated as follows:

Aqueous samples:

$$Cs, \text{ ug/L} = \frac{(As) (Is)}{(Ais) (RF) (Vs)}$$

where:

Cs = concentration of compound in sample
As = area of quantitation ion of compound in sample
Is = amount of internal standard added (ng)
Ais = area of quantitation ion of internal standard
RF = average response factor from initial calibration
Vs = volume of aqueous sample added to purge vessel

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4. Qualitative Identification

- a. An analyte can be positively identified if the following two criteria are met. The first criterion relates to the reproducibility of the elution time of each analyte, from the standard to the sample. The relative retention time (RRT) of a compound in the sample must agree within ± 0.15 RRT units of the RRT from the mid-level standard.

Secondly, the mass spectra of the compound in the sample and in the standard are compared. All of the ions present in the standard spectrum at a level of greater than 10% relative abundance must be present in the sample spectrum as well. Additionally, the relative intensities of the major peaks must compare within $\pm 20\%$ to the standard spectrum.

- b. For samples containing components which are not present in the calibration, searches from the EPA/NIH library are performed. Applying similar spectral criteria as discussed above, the sample component and library searches are compared. Ions which are present in the sample spectrum but not the reference spectrum should be checked if they are due to a matrix or coeluting compound. If this is the case, subtracting out the ions can afford more accurate identifications. When the library search does not identify the component, the mass spectrum is compared with the reference book Eight Peak Index of Mass Spectra, compiled by the Mass Spectrometry Data Centre.

H. Interferences

1. Interferences due to contamination from solvents, reagents, or glassware must be demonstrated to be absent by running a reagent blank with each batch.
2. Methylene chloride, acetone, and Freons can be ubiquitous contaminants in an environmental laboratory.

I. References

1. Methods for the Determination of Organic Compounds in Drinking Water, EPA-600/4-88/039, December 1988. Method 524.2, Revision 3.0.

Reviewed and approved
T. Kirk 12/7/92
Issued _____

003943

Standards Documentation

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:24:26 10 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: BFB SPIKING SOLN
Date Prepared: 08/17/93
Prepared by: Nelyn Quitoviera
Type: Calibration Standard

Reference #: V09308016
Expiration Date: 02/17/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
METHANOL	B&J	BD-275	100

Source	Amount	Component	Final Concentration
V09308015	0.0200 ML	4-BROMOFLUOROBENZENE	50.0000 PPM

Disposal Method:
Verification Date: 08/17/93
Hazard Class: Health

Disposal Date: 08/16/93

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:33:45 10 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 524.2D
Manufacturer: ACCUSTANDARD
Expiration Date: 01/02/94
Received by: THERESA WALSH
Type: Calibration Standard

Reference #: V09306067
Lot #: 023-090
Date Opened: 07/02/93
Date received: 07/02/93

Traceable Source:
Total Volume: 1 ML

Solvent: METHANOL
Certificate (Y/N): N

Component	Concentration	Units
1,1-Dichloroethene	200.0000	PPM
trans-1,2-Dichloroethene	200.0000	PPM
2,2-Dichloropropane	200.0000	PPM
Bromochloromethane	200.0000	PPM
Benzene	200.0000	PPM
Dibromomethane	200.0000	PPM
Toluene	200.0000	PPM
Tetrachloroethene	200.0000	PPM
Vinyl chloride	200.0000	PPM
Trichloroethene	200.0000	PPM
1,1,1,2-Tetrachloroethane	200.0000	PPM
Ethylbenzene	200.0000	PPM
o-Xylene	200.0000	PPM
Bromoform	200.0000	PPM
Bromobenzene	200.0000	PPM
1,2,3-Trichloropropane	200.0000	PPM
1,2,4-Trichlorobenzene	200.0000	PPM
1,2-Dichlorobenzene	200.0000	PPM
1,4-Dichlorobenzene	200.0000	PPM
4-Chlorotoluene	200.0000	PPM
Dichlorodifluoromethane	200.0000	PPM
Carbon Tetrachloride	200.0000	PPM
Isopropylbenzene	200.0000	PPM
Chloroethane	200.0000	PPM
sec-Butylbenzene	200.0000	PPM
1,2-Dibromoethane	200.0000	PPM

Disposal Method:
Hazard Class: Health

Disposal Date:

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:33:45 10 DEC 1993 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 524.2E
Manufacturer: ACCUSTANDARD
Expiration Date: 01/02/94
Received by: THERESA WALSH
Type: Calibration Standard

Reference #: V09306068
Lot #: 023-093
Date Opened: 07/02/93
Date received: 04/28/93

Traceable Source: N
Total Volume: 1 ML

Solvent: METHANOL
Certificate (Y/N):

Component	Concentration	Units
Chloromethane	200.0000	PPM
Bromomethane	200.0000	PPM
Trichlorofluoromethane	200.0000	PPM
Methylene chloride	200.0000	PPM
1,1-Dichloroethane	200.0000	PPM
1,1,1-Trichloroethane	200.0000	PPM
m-Xylene	200.0000	PPM
1,2-Dichloroethane	200.0000	PPM
1,2-Dichloropropane	200.0000	PPM
1,1,2-Trichloroethane	200.0000	PPM
1,3-Dichloropropane	200.0000	PPM
Dibromochloromethane	200.0000	PPM
Styrene	200.0000	PPM
1,2,3-Trichloropropane	200.0000	PPM
2-Chlorotoluene	200.0000	PPM
1,2,4-Trimethylbenzene	200.0000	PPM
1,3-Dichlorobenzene	200.0000	PPM
Hexachlorobutadiene	200.0000	PPM
Chlorobenzene	200.0000	PPM

Disposal Method:
Hazard Class: Health

Disposal Date:

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:33:46 10 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 524.2F
Manufacturer: ACCUSTANDARD
Expiration Date: 01/02/94
Received by: THERESA WALSH
Type: Calibration Standard

Reference #: V09306069
Lot #: 023-094
Date Opened: 07/02/93
Date received: 04/28/93

Traceable Source:
Total Volume: 1 ML

Solvent: METHANOL
Certificate (Y/N): N

Component	Concentration	Units
Chloroform	200.0000	PPM
Bromodichloromethane	200.0000	PPM
1,1-Dichloropropene	200.0000	PPM
1,3-Dichloropropane	200.0000	PPM
1,1,2,2-Tetrachloroethane	200.0000	PPM
N-Propylbenzene	200.0000	PPM
1,3,5-Trimethylbenzene	200.0000	PPM
tert-Butylbenzene	200.0000	PPM
N-Butylbenzene	200.0000	PPM
p-Isopropyl toluene	200.0000	PPM
Naphthalene	200.0000	PPM
1,2-Dibromo-3-chloropropane	200.0000	PPM
p-Xylene	200.0000	PPM

Disposal Method:
Hazard Class: Health

Disposal Date:

: LIST STDS -- RECEIVED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:24:48 10 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: SURROGATE MIX
Manufacturer: SUPELCO
Expiration Date: 04/05/94
Received by: THERESA WALSH
Type: Surrogate

Reference #: V09309030
Lot #: LA34829
Date Opened: 10/05/93
Date received: 03/26/93

Traceable Source:
Total Volume: 1 ML

Solvent: METHANOL
Certificate (Y/N): N

Component

Concentration Units

Bromofluorobenzene
1,2-Dichloroethane
Toluene

1.0000	MG
1.0000	MG
1.0000	MG

Disposal Method:
Hazard Class:

Disposal Date:

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 14:11:55 15 DEC 1993 - P. 1 :
=====

Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 524 SPIKED MIX A
Date Prepared: 10/07/93
Prepared by: THERESA WALSH
Type: Spike Solution

Reference #: V09309038
Expiration Date: 04/07/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
METHANOL	B&J	BE181	99

Source	Amount	Component	Final Concentration
V09309037	1.0000 ML	1,1-Dichloroethene	20.0000 PPM
		Methylene chloride	20.0000 PPM
		trans-1,2-Dichloroethene	20.0000 PPM
		1,1-Dichloroethane	20.0000 PPM
		2,2-Dichloropropane	20.0000 PPM
		cis-1,2-Dichloroethene	20.0000 PPM
		Chloroform	20.0000 PPM
		Bromochloromethane	20.0000 PPM
		Carbon Tetrachloride	20.0000 PPM
		1,1-Dichloropropene	20.0000 PPM
		Benzene	20.0000 PPM
		1,2-Dichloroethane	20.0000 PPM
		Trichloroethene	20.0000 PPM
		1,2-Dichloropropane	20.0000 PPM
		Bromodichloromethane	20.0000 PPM
		Dibromomethane	20.0000 PPM
		trans-1,3-Dichloropropene	20.0000 PPM
		cis-1,3-Dichloropropene	20.0000 PPM
		Toluene	20.0000 PPM
		1,1,2-Trichloroethane	20.0000 PPM
		Tetrachloroethene	20.0000 PPM
		1,3-Dichloropropane	20.0000 PPM
		Dibromochloromethane	20.0000 PPM
		1,2-Dibromoethane	20.0000 PPM
		Chlorobenzene	20.0000 PPM
		1,1,1,2-Tetrachloroethane	20.0000 PPM
		m- and p-Xylene Isomers	20.0000 PPM
		o-Xylene	20.0000 PPM
		Styrene	20.0000 PPM
		Bromoform	20.0000 PPM
		Isopropylbenzene	20.0000 PPM
		1,1,2,2-Tetrachloroethane	20.0000 PPM
		Bromobenzene	20.0000 PPM
		1,2,3-Trichloropropane	20.0000 PPM
		N-Propylbenzene	20.0000 PPM
		2-Chlorotoluene	20.0000 PPM
		1,3,5-Trimethylbenzene	20.0000 PPM
		4-Chlorotoluene	20.0000 PPM
		tert-Butylbenzene	20.0000 PPM
		1,2,4-Trimethylbenzene	20.0000 PPM
		sec-Butylbenzene	20.0000 PPM
		p-Isopropyl toluene	20.0000 PPM

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: LIST STDS -- PREPARED STANDARD :

: BC ANALYTICAL : GLEN LAB : 14:12:00 15 DEC 1993 - P. 2 :

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Reviewed Init: _____

Date: _____

STANDARDS DOCUMENTATION

Name: 524 SPIKED MIX A

Reference #:V09309038

Source	Amount	Component	Final Concentration
		1,3-Dichlorobenzene	20.0000 PPM
		1,4-Dichlorobenzene	20.0000 PPM
		N-Butylbenzene	20.0000 PPM
		1,2-Dichlorobenzene	20.0000 PPM
		1,2-Dibromo-3-chloropropane	20.0000 PPM
		1,2,4-Trichlorobenzene	20.0000 PPM
		Hexachlorobutadiene	20.0000 PPM
		Naphthalene	20.0000 PPM
		1,1,1-Trichloroethane	20.0000 PPM
		Ethylbenzene	20.0000 PPM

Disposal Method:

Verification Date:

Hazard Class:

Disposal Date:

003951

: LIST STDS -- PREPARED STANDARD :
: BC ANALYTICAL : GLEN LAB : 10:24:48 10 DEC 1993 - P. 1 :
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Reviewed Init: _____
Date: _____

STANDARDS DOCUMENTATION

Name: 524.2 SPIKE-B
Date Prepared: 10/07/93
Prepared by: THERESA WALSH
Type: Spike Solution

Reference #: V09309040
Expiration Date: 04/07/94
Total Volume: 10 ML

Solvent	Manufacturer	Lot#	%
METHANOL	B&J	BE181	99

Source	Amount	Component	Final Concentration
V09309039	1.0000 ML	Bromomethane	20.0000 PPM
		Chloromethane	20.0000 PPM
		Vinyl chloride	20.0000 PPM
		Chloroethane	20.0000 PPM
		Dichlorodifluoromethane	20.0000 PPM

Disposal Method:
Verification Date: 10/07/93
Hazard Class: Flammable

Disposal Date: _____

003952

Analysis Run Logs

003953

Project No. VOA 524.2

TITLE _____ Book No. Analysis Run log 117

From Page No. _____ C:\HPLC\1 VOA-TH 10003

Date 11/3/93 Batch 804 Tape 17 Analyst M

Index	Vessel	Filename	Glab. up /	Strip /	Check /	Volume	ppm	std	recon	report
①	17	V1913	50 ng	BFB	15ml					
	18	V1914	Wakro Blank	1	25ml					
①	19	V1915	25 ng	BFB	15ml					
②	20	V1916	1 ppb	524.2 std	1	25ml				
	21	V1917	4 ppb							
	22	V1918	10 ppb							
	23	V1919	20 ppb							
	24	V1920	30 ppb							

003954

Project No. _____

Book No. _____

TITLE _____

Comments for p. 117

6

on Page No. _____

Notes 11/3/93

① NFB id #V09308016, met EPA criteria

② #V09306070, ~~init~~ ^{143/15} Initial calibration met $\leq 30\%$ diff criteria.

003955

TITLE

Project No.

VOA 524.2

Book No.

Analysis Run Log 153

From Page No.

C:\HACHEM\1\DATA\DEC3

Date

12/3/93

Batch

815

Tape

Analyst rw

Ally	Vessel	Silenname	Lab ID / SxID / Client / Volume	pH	del	recunapt
①	17	V2221	SD ne BFB, 5ml			
②	18	V2222	10 ppb VOA S2K2 SK1 / 25ml			
	19	V2223	Method Blank / 25ml			✓
	20	V2224	" / "			
	21	V2225	G9311378-1 / GW-2 / Seacor. S10 / 25ml	7		✓
	22	V2226	-2 / GW-3	7		✓ low
	23	V2227	-3 / -4	7		✓ low
	24	V2228	-1ms / -2ms	7		✓
	25	V2229	-1msd / -2msd	7		✓
	26	V2230	-4 / -5	6		✓
	27	V2231	LCS 815 / 4 ppb ACS 125ml			✓
	28	V2232	G9311378-5 / GW-6 / Seacor. S10 / 25ml	7		
	29	V2233	-6 / Equipment Blank /	1		
	30	V2234	-7 / Trip. Blank /	1		
	31	V2235	LCS 815 125ml			

Run stopped at for LCS
on 12/4/93

003956

Project No. _____

Book No. _____

TITLE _____

Comments for p. 153

2

om Page No. _____

Notes 12/3/93

① lot # V09308016, BFB met EPA criteria

② lot # V09306070, met 230% R.F. criteria

003957

To Page No. _____

Project No. VOA 524.2

TITLE _____ Book No. Analysis Run Log 155

From Page No. _____ C:\HPCHEM\1\DATA\REC6

Date 12/6/93 Batch 916 Tape _____ Analyst RJ

Notes	Page	Filename	Glab ID / SxID / Client / Volume	pH	del	Renun	rat
①	17	V0232	25 mg BFO / 5ml				
②	18	V0233	10 ppb VOA 524.2 std / 25ml				
	19	V0234	Method Blank / 25ml			✓	
	20	V0235	" / "				✓
	21	V0236	64311378 -2 / GW-3 / Seacor. Slo / 25ml	7			✓
	22	V0237	-3 / -4 /	7			✓
	23	V0238	-5 / -6 /	7	✓	Low 18	
	24	V0239	-6 / Equip. Blank /	1			✓
	25	V0240	-7 / Trip Blank /	1			✓
	26	V0241	LCS816 / 25ml				✓
	27	V0242	LCS816 / 25ml				
	28	V0243	64311378 -5 / GW-6 / Seacor. Slo / 25ml	7			✓
③	29	V0244	64311378 -2 MS / GW-3MS /	7			✓
	30	V0245	-2MSO / " MSO /	7			✓

003958

Project No. _____

Book No. _____

TITLE _____

comments for p155

om Page No. _____

Notes 12/6/93

① BFB lot# V09308016, met EPA criteria

② lot# V09306070, std met 23070 diff criteria

③ lot# V09309030, V09309040

003959

To Page No. _____

111

TITLE _____

From Page No. _____

C:\HChem\1\DATA\DEC 14

Date 12/14/93 Batch 822 Tape _____ Analyst RW

Notes	Vessel	Alkene	Glab ID / Sx ID / Chest / Volume	pH	LD	serum	spt
①	17	V2345	25 mg R&D / 5 ml				
②	18	V2346	10 ppb VOA 524.2 std / 25 ml				
	19	V2347	Method Blank / 25 ml			✓	
	20	V2348	64312066-1 Method Blank				
	21	V2349	64312066-1 ^{MSD} GW-1 Rocketdyne / 25 ml	7			
④	22	V2350	64312066-1 ^{MSD} 64312066-1 ^{MSD} GW-1 Rocketdyne / 25 ml	7			
	23	V2351	64312066-1 ^{MSD} 64312066-1 ^{MSD} GW-1 ^{MSD} / 1"	7			
	24	V2352	LCS Dup 822			✓ Low 18	
	25	V2353	LCS Dup 822			✓ Low 15	
	26	V2354	LCS 822 / 25 ml				
	27	V2355	LCS Dup 822 / 25 ml				

To Page No. _____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	

003960

From Page No. _____

Notes 12/14/93

- ① BFB lot# V09308016, met EPA criteria
- ② lot# V09306070 ^{b3165} ~~b3165~~ ^{compds} ~~ok~~ - still passed criteria
- ③ lot# V09309036, V09309040
- ④ Low I.S. - not enough sample to rerun, batch validated by 2 LCSs

To Page No. _____

Witnessed & Understood by me, _____

Date _____

Invented by _____

Date _____

Recorded by _____

003961

Initial Calibrations:

Inst 537-03 (11/03/93)

Response Factor Report VOA3

Initial Calibration

EPA 524.2

Instrument 537-03

11-3-93

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:30:04 1993
 Response via : Initial Calibration

Calibration Files

1 =V1916.D 2 =V1917.D 3 =V1918.D
 4 =V1919.D 5 =V1920.D

Compound	1	2	3	4	5	Avg	%RSD
1) Methylene Chloride-d2	-----ISTD-----						
2) Chloromethane	1.630	1.024	1.206	1.287	1.131	1.256	18.37
3) Vinyl Chloride	1.832	1.894	2.057	2.011	2.121	1.983	5.96
4) Bromomethane	2.406	1.877	1.885	1.946	2.059	2.035	10.82
5) Chloroethane	1.578	1.421	1.481	1.462	1.553	1.499	4.33
6) Trichlorofluoromethane	4.100	4.793	5.266	5.416	5.729	5.061	12.53
7) 1,1-Dichloroethene	2.030	2.095	2.243	2.228	2.394	2.198	6.44
8) Freon 113	3.382	3.821	4.250	4.543	4.694	4.138	13.00
9) Methylene Chloride	2.641	1.823	1.722	1.669	1.710	1.913	21.48
10) 1,2-Dichloroethene (trans)	2.801	2.572	2.668	2.577	2.712	2.666	3.61
11) 1,1-Dichloroethane	6.262	5.049	5.117	5.007	5.142	5.315	10.01
12) 2,2-Dichloropropane	4.864	4.899	5.233	4.887	5.070	4.990	3.17
13) 1,2-Dichloroethene (cis-)	3.048	2.456	2.487	2.449	2.536	2.595	9.85
14) Bromochloromethane	1.291	1.231	1.219	1.157	1.213	1.222	3.90
15) Chloroform	6.202	5.224	5.278	5.070	5.402	5.435	8.19
16) 1,1-Dichloropropene	4.907	4.638	5.000	4.800	5.127	4.894	3.83
17) S 1,2-Dichloroethane-d4	1.449	1.490	1.471	1.403	1.364	1.436	3.58
18) 1,2-Dichloroethane	2.173	1.818	1.751	1.727	1.745	1.843	10.19
19) 1,1,1-Trichloroethane	6.174	5.363	5.629	5.471	5.677	5.663	5.51
20) Carbon Tetrachloride	4.967	5.064	5.550	5.285	5.674	5.308	5.73
21) Benzene	8.382	7.322	7.516	7.180	7.612	7.602	6.14
22) Trichloroethene	3.354	3.193	3.443	3.260	3.485	3.347	3.64
23) 1,2-Dichloropropane	3.130	2.653	2.623	2.566	2.645	2.723	8.43
24) Fluorobenzene	-----ISTD-----						
25) Dibromomethane	0.139	0.124	0.120	0.123	0.124	0.126	6.12
26) Bromodichloromethane	0.576	0.498	0.480	0.493	0.502	0.510	7.44
27) cis-1,3-Dichloropropene	0.441	0.382	0.371	0.383	0.390	0.393	6.94
28) trans-1,3-Dichloropropene	0.257	0.215	0.203	0.218	0.220	0.223	9.18
29) 1,3-Dichloropropane	0.259	0.246	0.234	0.239	0.240	0.244	4.00
30) Dibromochloromethane	0.304	0.261	0.251	0.261	0.266	0.269	7.65
31) Bromoform	0.129	0.129	0.129	0.134	0.140	0.132	3.65
32) S Toluene-d8	0.851	0.871	0.871	0.872	0.855	0.864	1.17
33) Toluene	0.659	0.555	0.557	0.556	0.574	0.580	7.73
34) 1,1,2-Trichloroethane	0.170	0.140	0.132	0.138	0.138	0.144	10.54
35) Tetrachloroethene	0.341	0.332	0.345	0.343	0.355	0.343	2.34
36) 1,2-Dibromoethane	0.184	0.176	0.174	0.182	0.185	0.180	2.64
37) Chlorobenzene	0.739	0.599	0.596	0.612	0.622	0.634	9.47
38) 1,1,1,2-Tetrachloroethane	0.315	0.296	0.299	0.300	0.309	0.304	2.56
39) Ethylbenzene	0.345	0.307	0.322	0.321	0.331	0.325	4.25
40) m,p-Xylenes	0.499	0.420	0.424	0.430	0.445	0.444	7.27
41) o-Xylene	0.412	0.363	0.366	0.368	0.383	0.378	5.41
42) Styrene	0.681	0.567	0.558	0.585	0.598	0.598	8.19

003963

Response Factor Report VOA3

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Wed Nov 03 16:30:04 1993
Response via : Initial Calibration

Calibration Files

1 =V1916.D 2 =V1917.D 3 =V1918.D
4 =V1919.D 5 =V1920.D

Compound	1	2	3	4	5	Avg	%RSD
43) 1,2-Dichlorobenzene-d4	-----ISTD-----						
44) Isopropylbenzene	3.189	2.920	2.912	2.599	2.628	2.850	8.53
45) S Bromofluorobenzene	1.179	1.199	1.119	1.019	0.962	1.096	9.34
46) Bromobenzene	1.571	1.440	1.341	1.219	1.219	1.358	11.13
47) 1,1,2,2-Tetrachloroethane	0.522	0.436	0.380	0.350	0.343	0.406	18.37
48) 1,2,3-Trichloropropane	0.388	0.274	0.257	0.242	0.227	0.278	23.14
49) n-Propylbenzene	4.542	3.997	3.984	3.593	3.604	3.944	9.83
50) 2-Chlorotoluene	3.116	2.656	2.481	2.354	2.350	2.591	12.31
51) 4-Chlorotoluene	2.284	2.289	2.107	1.989	1.955	2.125	7.43
52) 1,3,5-Trimethylbenzene	2.678	2.362	2.284	2.056	2.070	2.290	11.11
53) Tert-Butylbenzene	2.887	2.440	2.455	2.244	2.230	2.451	10.83
54) 1,2,4-Trimethylbenzene	2.907	2.291	2.182	1.987	1.966	2.267	16.88
55) Sec-Butylbenzene	3.763	3.539	3.585	3.232	3.208	3.466	6.90
56) 1,3-Dichlorobenzene	1.398	1.231	1.166	1.073	1.050	1.184	11.86
57) 1,4-Dichlorobenzene	1.386	1.225	1.159	1.067	1.047	1.177	11.65
58) p-Isopropyltoluene	3.189	2.739	2.780	2.519	2.515	2.748	10.00
59) 1,2-Dichlorobenzene	1.150	0.976	0.935	0.836	0.815	0.942	14.24
60) n-Butylbenzene	3.567	3.104	3.173	2.872	2.795	3.102	9.79
61) 1,2-Dibromo-3-Chloropropa	0.092	0.075	0.065	0.061	0.059	0.070	19.47
62) 1,2,4-Trichlorobenzene	0.900	0.760	0.743	0.672	0.638	0.743	13.63
63) Naphthalene	1.242	0.985	0.864	0.649	0.608	0.870	29.81
64) Hexachlorobutadiene	0.911	0.793	0.828	0.738	0.687	0.791	10.86
65) 1,2,3-Trichlorobenzene	0.663	0.581	0.632	0.519	0.486	0.576	12.90

003964

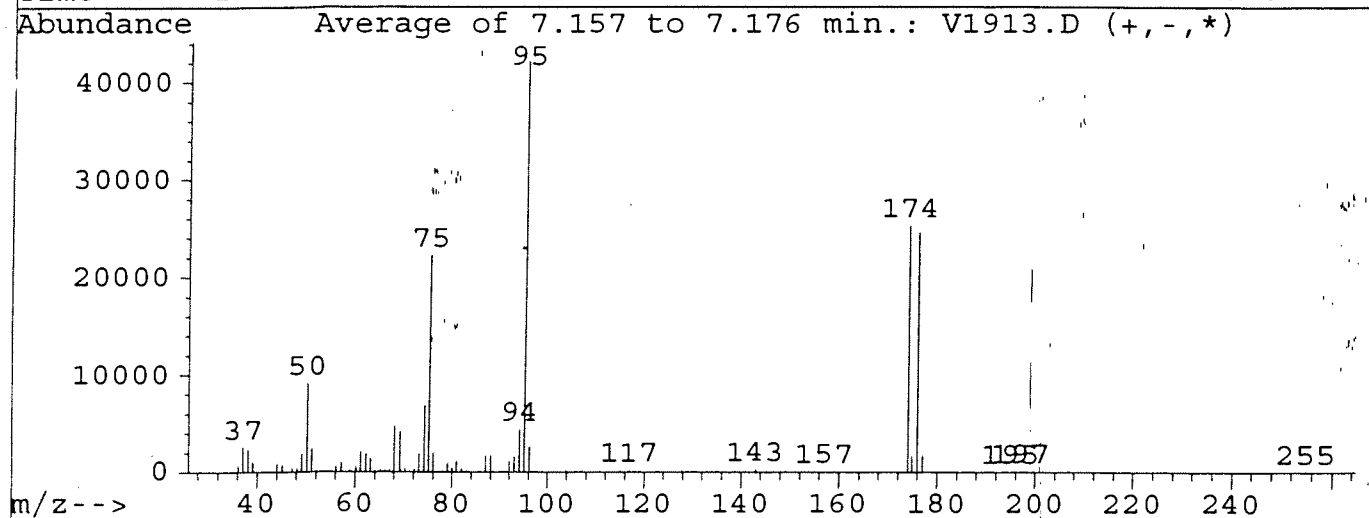
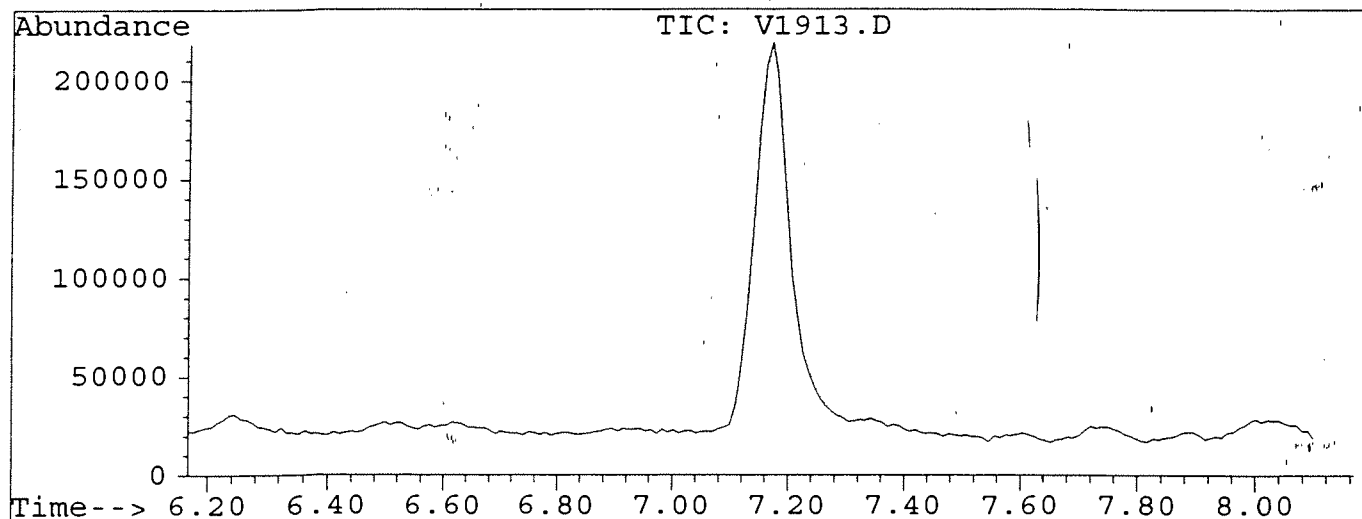
BFB

W 11/3/93

Data File : C:\HPCHEM\1\DATA\NOV2\V1913.D
Acq Time : 3 Nov 93 9:59 am
Sample : 50 NG BFB / 5ML
Misc : LOT #VO9308016

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
Title :



Peak Apex is scan: 241

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.6	9090	PASS
75	95	30	60	52.7	22226	PASS
95	95	100	100	100.0	42135	PASS
96	95	5	9	6.1	2570	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	59.9	25245	PASS
175	174	5	9	6.6	1660	PASS
176	174	95	101	96.9	24475	PASS
177	176	5	9	6.7	1652	PASS

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1914.D
 Acq Time : 3 Nov 93 10:28 am
 Sample : WATER BLANK
 Misc : 25ML
 Quant Time: Nov 3 11:01 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Tue Oct 26 13:52:02 1993
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.89	53	100513	10.00	ug/l	0.03
24) Fluorobenzene	13.02	96	860699	10.00	ug/l	0.05
43) 1,2-Dichlorobenzene-d4	27.31	150	331920	10.00	ug/l	0.07
System Monitoring Compounds						%Recovery
17) 1,2-Dichloroethane-d4	12.29	65	145130	8.04	ug/l	80.40%
32) Toluene-d8	16.83	98	718064	9.88	ug/l	98.80%
45) Bromofluorobenzene	23.57	95	403807	11.32	ug/l	113.22%
Target Compounds						Qvalue
9) Methylene Chloride	7.90	84	3281	0.16	ug/l #	1
18) 1,2-Dichloroethane	13.03	62	12289	0.49	ug/l	62
33) Toluene	17.00	92	6557	0.13	ug/l	91
39) Ethylbenzene	20.86	106	4967	0.16	ug/l	67
40) m,p-Xylenes	20.86	106	4967	0.12	ug/l	56
54) 1,2,4-Trimethylbenzene	25.35	105	12504	0.17	ug/l	97
63) Naphthalene	31.90	128	7973	0.32	ug/l	88

rw
 11/3/93

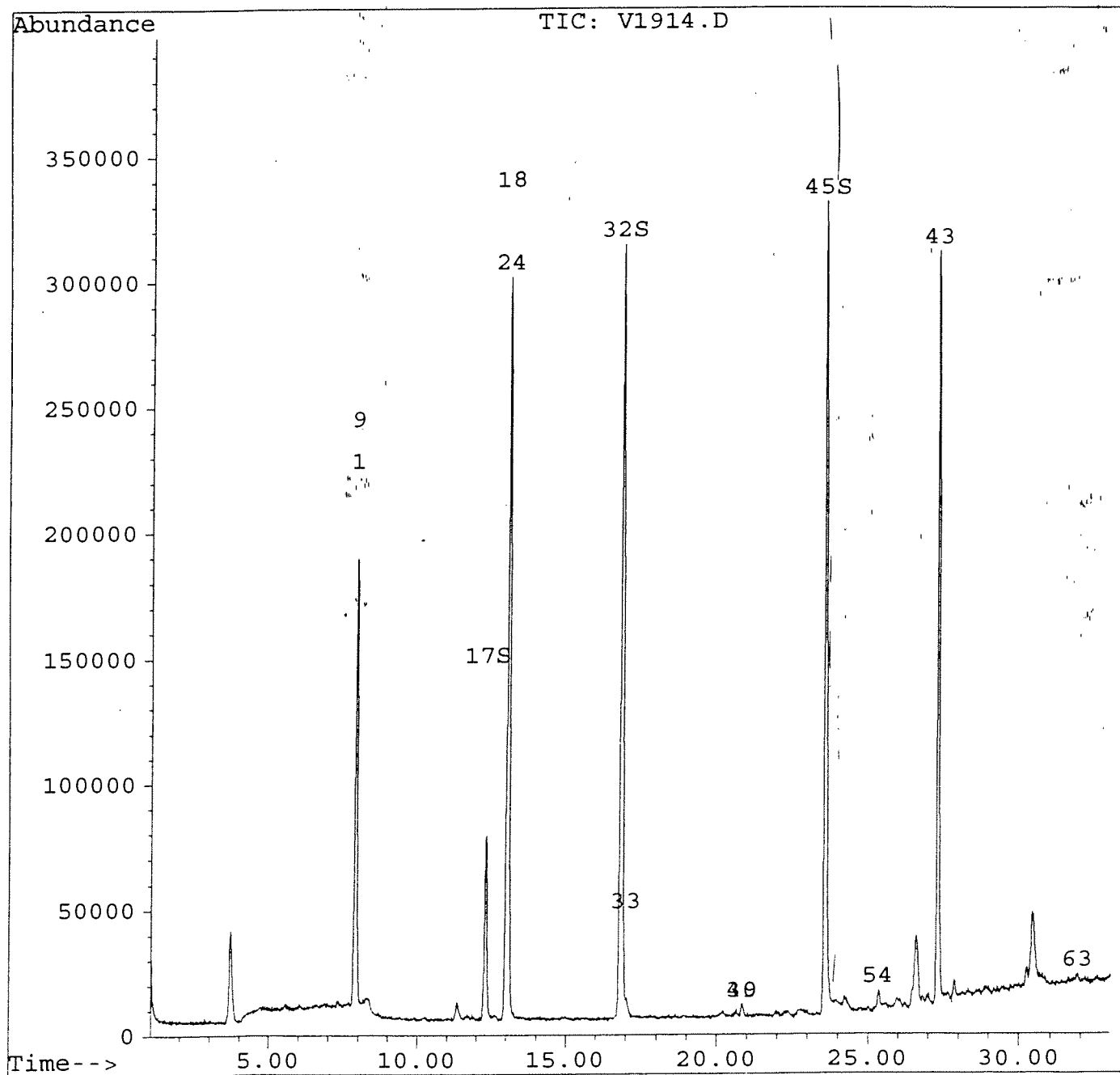
003966

Quantitation Report

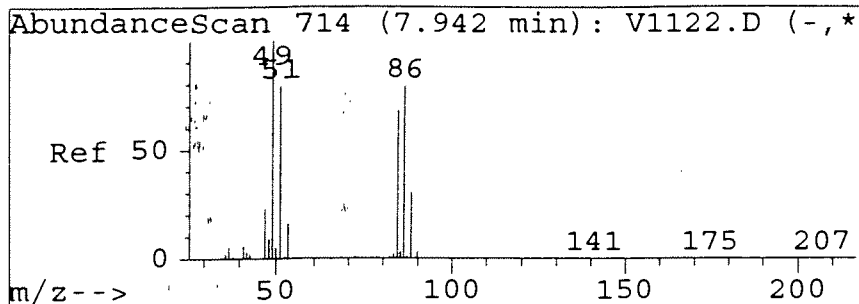
Data File : C:\HPCHEM\1\DATA\NOV3\V1914.D
Acq Time : 3 Nov 93 10:28 am
Sample : WATER BLANK
Misc : 25ML
Quant Time: Nov 3 11:01 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Tue Oct 26 13:52:02 1993
Response via : Multiple Level Calibration

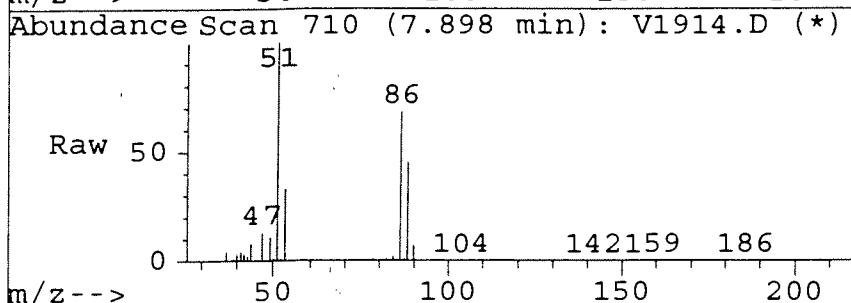


003967

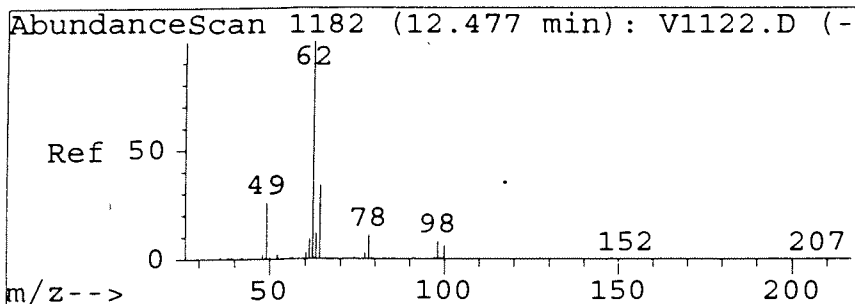
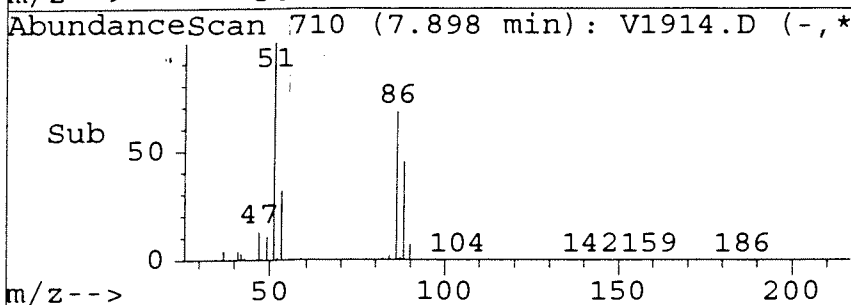
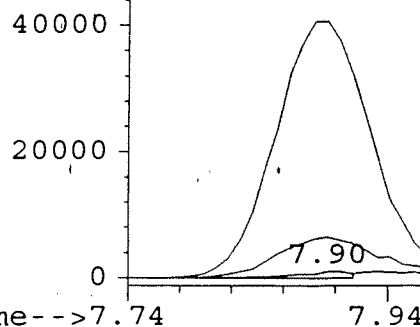


#9
Methylene Chloride
Concen: 0.16 ug/l
RT: 7.90 min Scan# 710
Delta R.T. -0.22 min
Lab File: V1914.D
Acq: 3 Nov 93 10:28 am 7.

Tgt Ion:84	Resp:	3281
Ion Ratio	Lower	Upper
84	100	
49	1171.3	86.0 186.0#
86	6566.5	12.0 112.0#
0	0.0	0.0 0.0



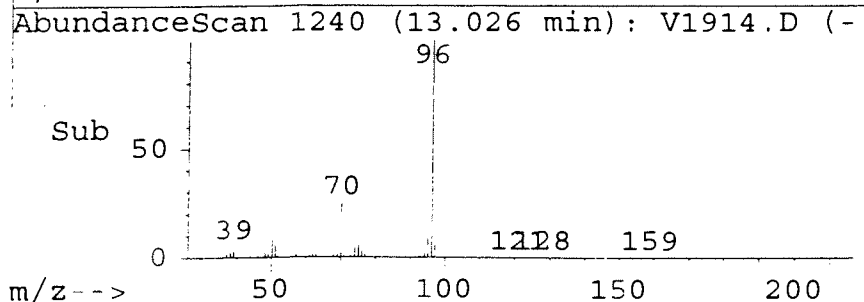
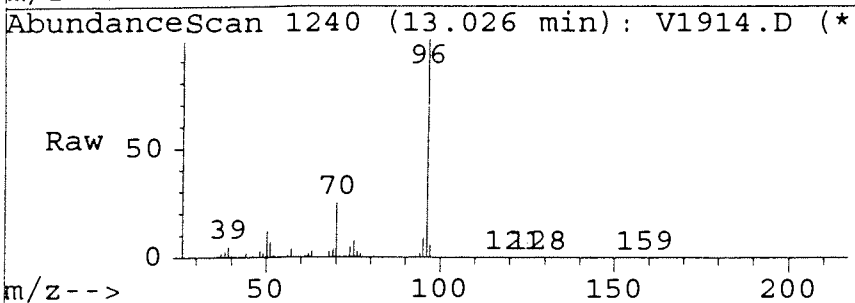
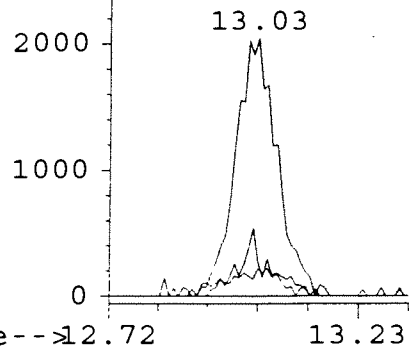
Abundance	Ion	84.00 (83.
	Ion	49.00 (48.
	Ion	86.00 (85.

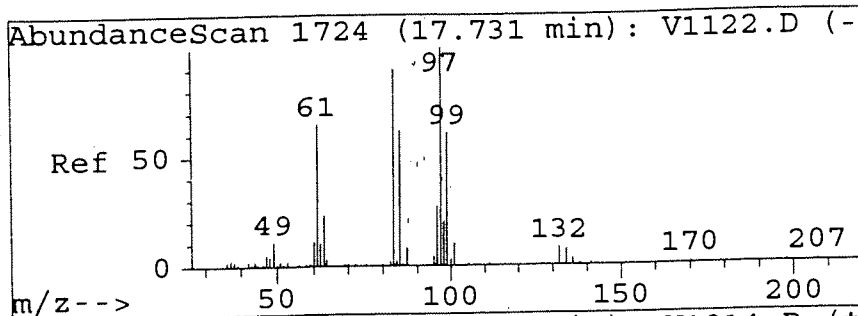


#18
1,2-Dichloroethane
Concen: 0.49 ug/l
RT: 13.03 min Scan# 1240
Delta R.T. 0.35 min
Lab File: V1914.D
Acq: 3 Nov 93 10:28 am 19.

Tgt Ion:62	Resp:	12289
Ion Ratio	Lower	Upper
62	100	
64	7.9	0.0 84.0
98	5.9	0.0 63.0
0	0.0	0.0 0.0

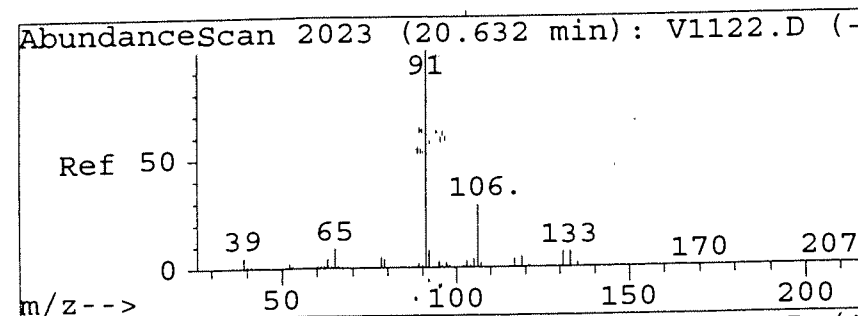
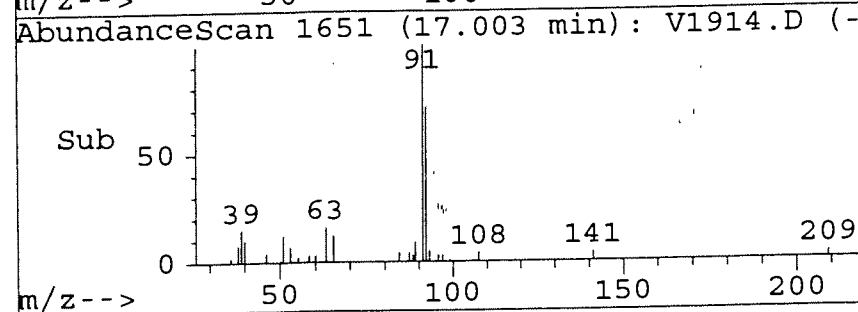
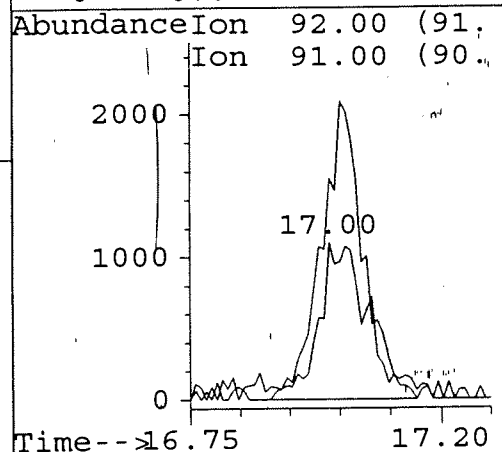
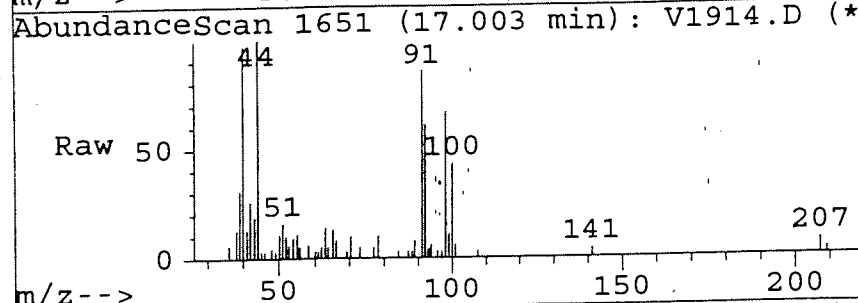
Abundance	Ion	62.00 (61.
	Ion	64.00 (63.
	Ion	98.00 (97.





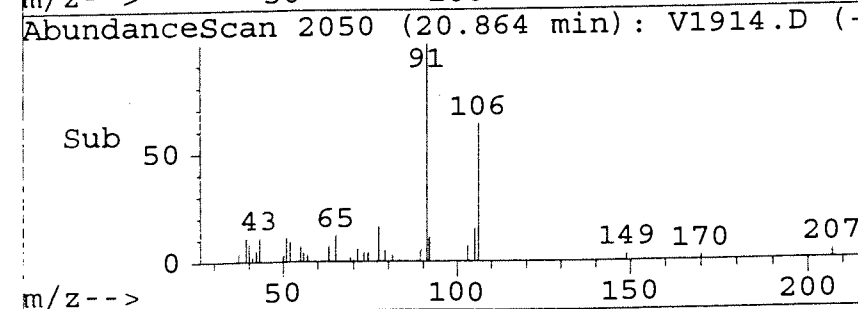
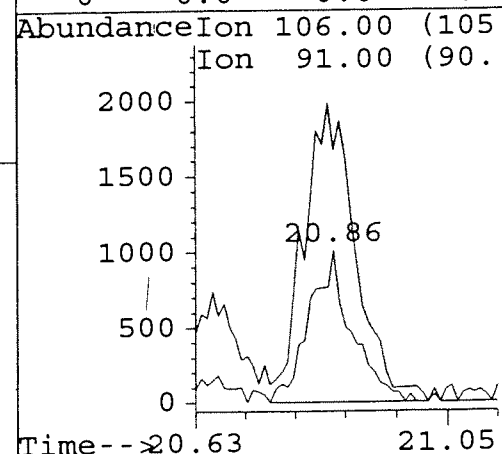
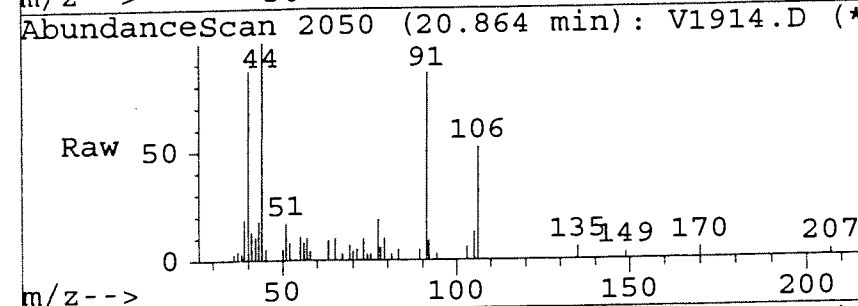
#33
Toluene
Concen: 0.13 ug/l
RT: 17.00 min Scan# 1651
Delta R.T. -0.22 min
Lab File: V1914.D
Acq: 3 Nov 93 10:28 am

Tgt Ion	Ratio	Lower	Upper
92	100		
91	172.8	110.8	210.8
0	0.0	0.0	0.0
0	0.0	0.0	0.0

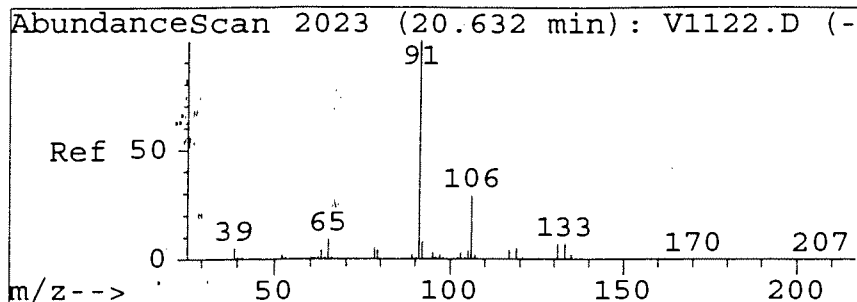


#39
Ethylbenzene
Concen: 0.16 ug/l
RT: 20.86 min Scan# 2050
Delta R.T. 0.02 min
Lab File: V1914.D
Acq: 3 Nov 93 10:28 am

Tgt Ion	Ratio	Lower	Upper
106	100		
91	238.1	140.0	240.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0

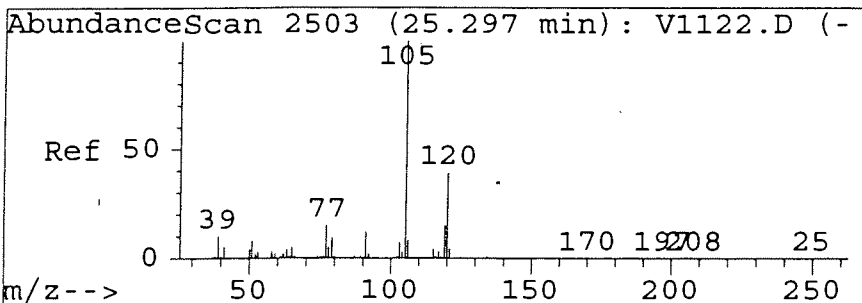
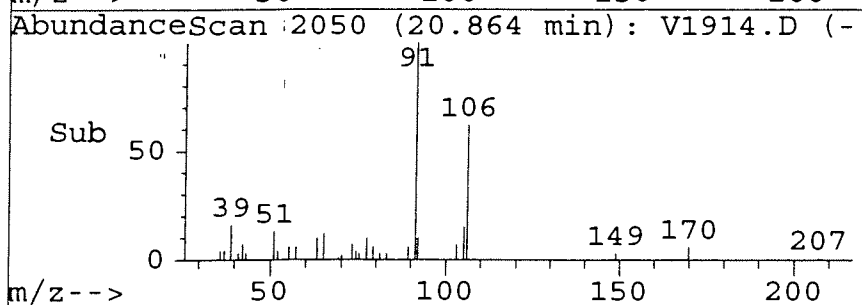
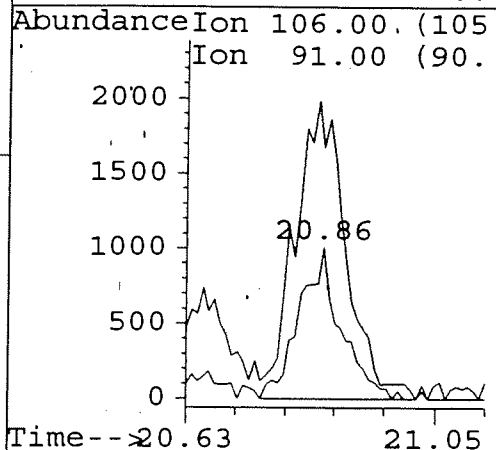
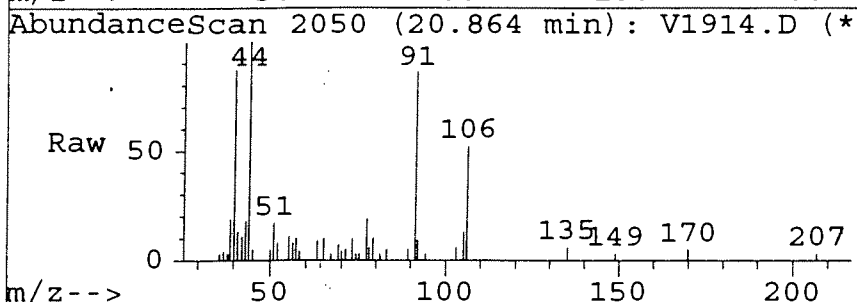


003969



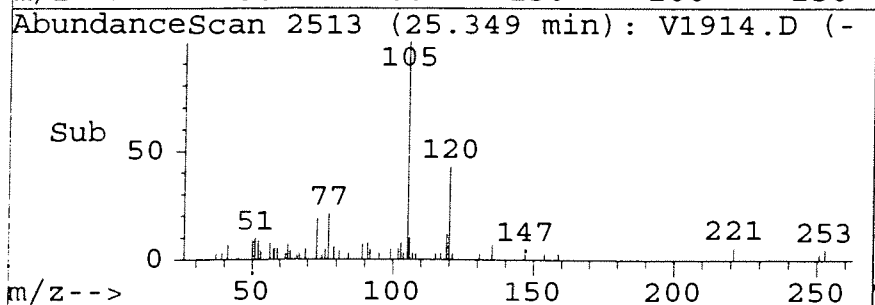
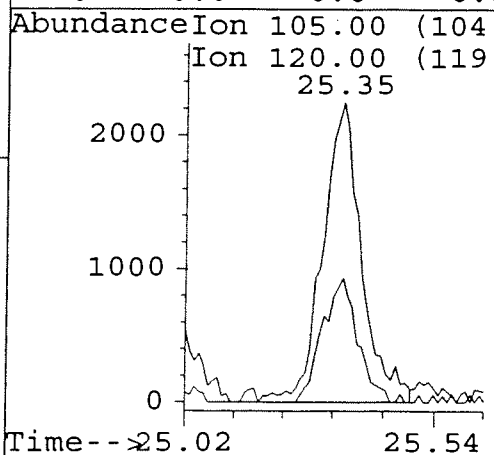
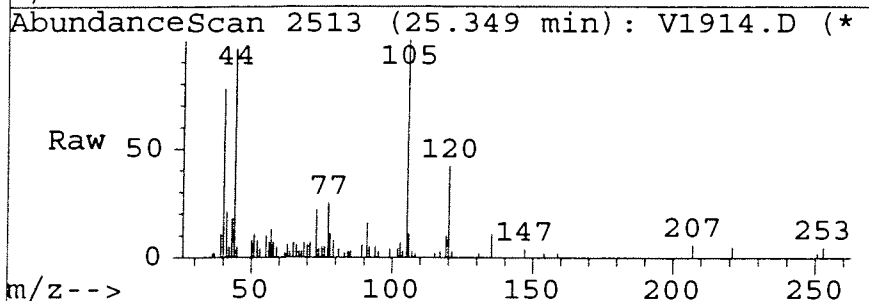
#40
m,p-Xylenes
Concen: 0.12 ug/l
RT: 20.86 min Scan# 2050
Delta R.T. -0.16 min
Lab File: V1914.D
Acq: 3 Nov 93 10:28 am

Tgt Ion:106	Resp:	4967
Ion Ratio	Lower	Upper
106 100		
91 238.1	88.5	265.5
0 0.0	0.0	0.0
0 0.0	0.0	0.0

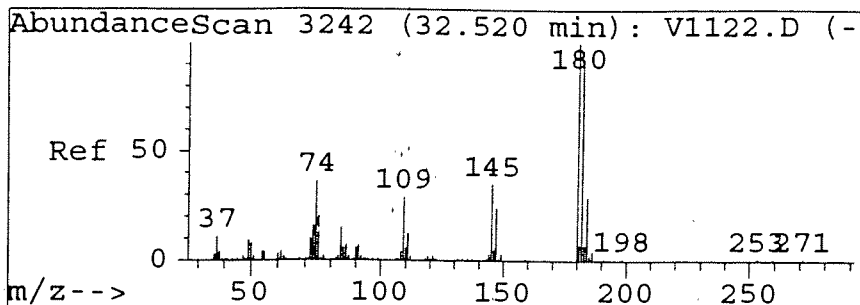


#54
1,2,4-Trimethylbenzene
Concen: 0.17 ug/l
RT: 25.35 min Scan# 2513
Delta R.T. -0.15 min
Lab File: V1914.D
Acq: 3 Nov 93 10:28 am

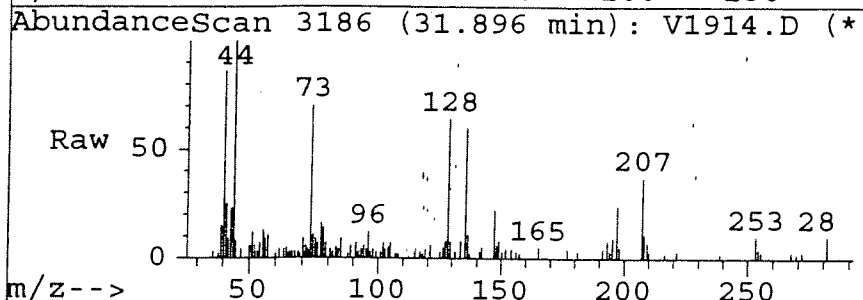
Tgt Ion:105	Resp:	12504
Ion Ratio	Lower	Upper
105 100		
120 37.9	20.0	60.0
0 0.0	0.0	0.0
0 0.0	0.0	0.0



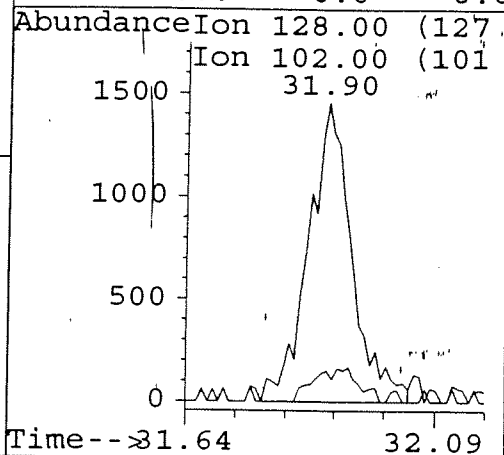
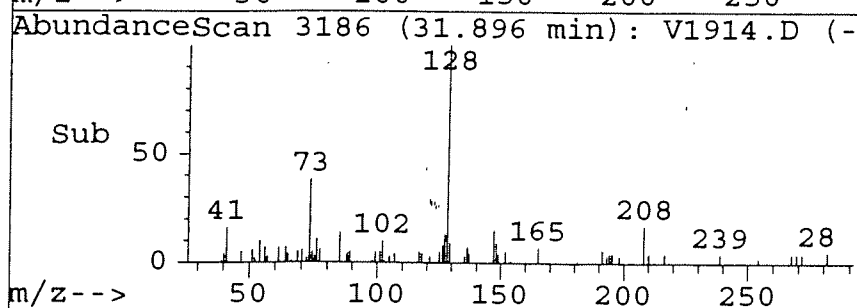
003970



#63
Naphthalene
Concen: 0.32 ug/l
RT: 31.90 min Scan# 3186
Delta R.T. -0.22 min
Lab File: V1914.D
Acq: 3 Nov 93 10:28 am



Tgt Ion	Ratio	Lower	Upper
128	100		
102	5.4	2.5	17.5
0	0.0	0.0	0.0
0	0.0	0.0	0.0



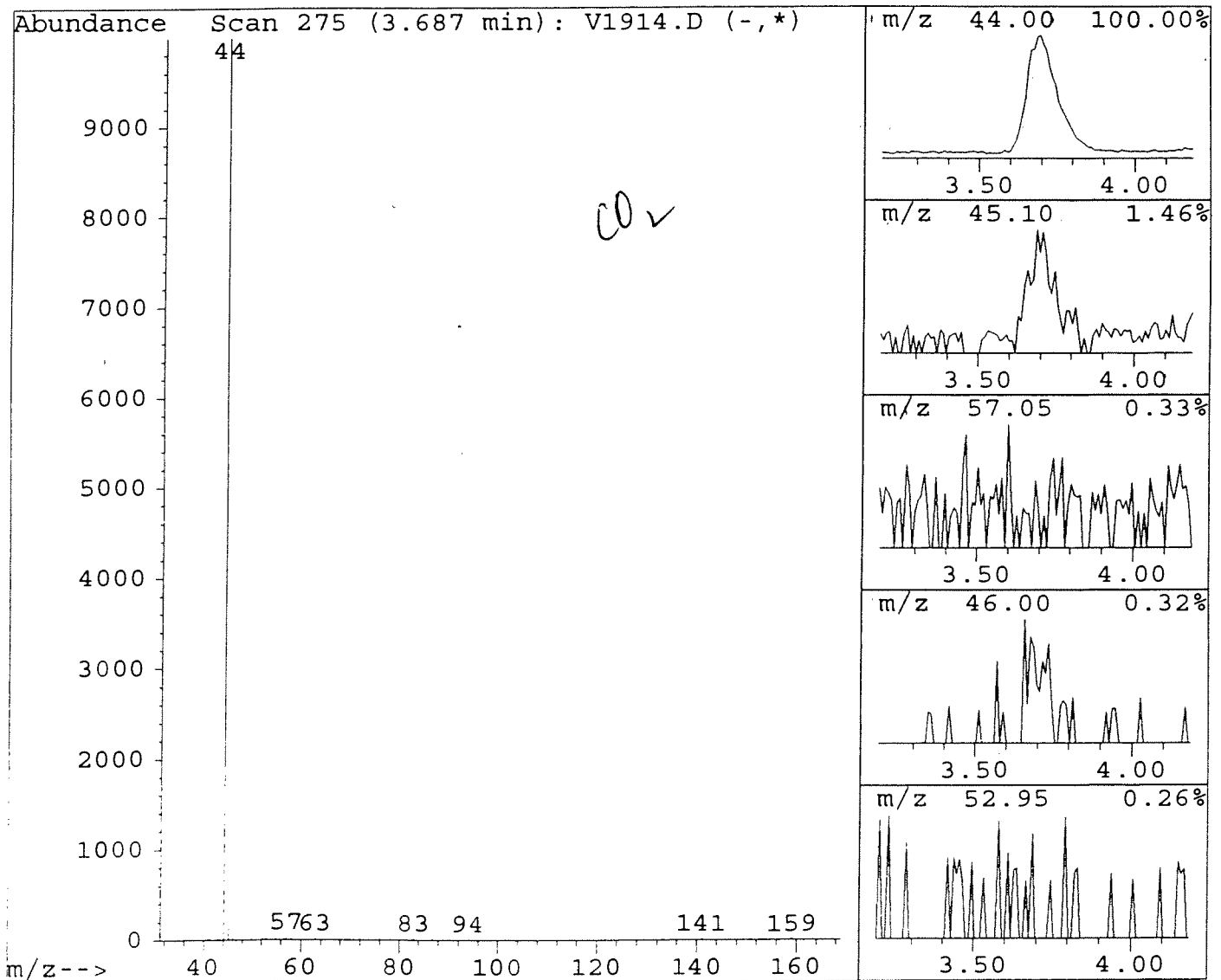
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1914.D
Acq Time : 3 Nov 93 10:28 am
Sample : WATER BLANK
Misc : 25ML

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
3.69	2.63 ug/l	243186	Methylene Chloride-d2	7.89	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 Unknown			0	000000-00-0	0



003972

Library Search Compound Report

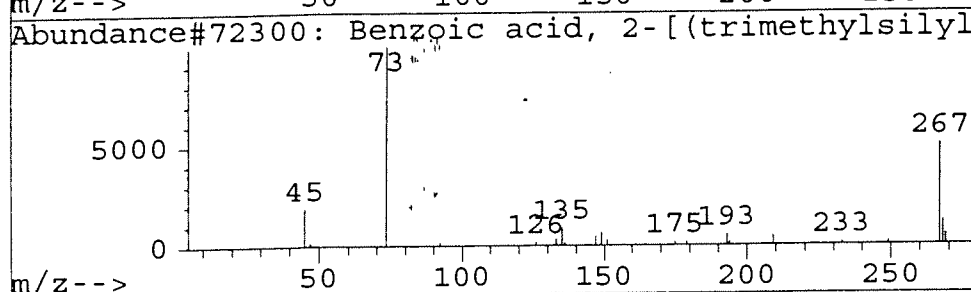
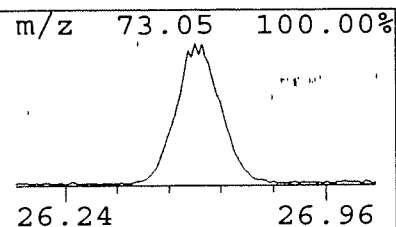
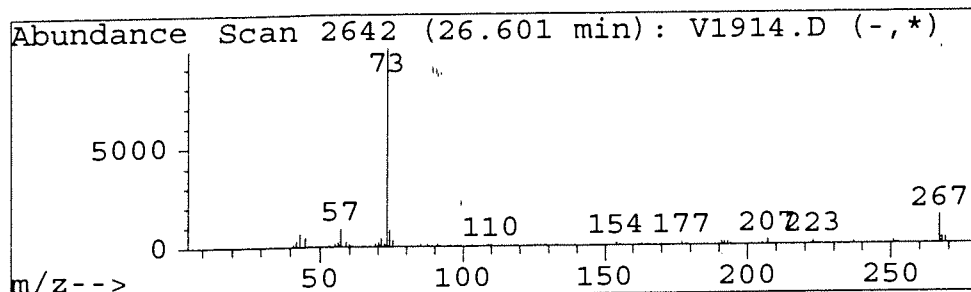
Data File : C:\HPCHEM\1\DATA\NOV3\V1914.D
Acq Time : 3 Nov 93 10:28 am
Sample : WATER BLANK
Misc : 25ML

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

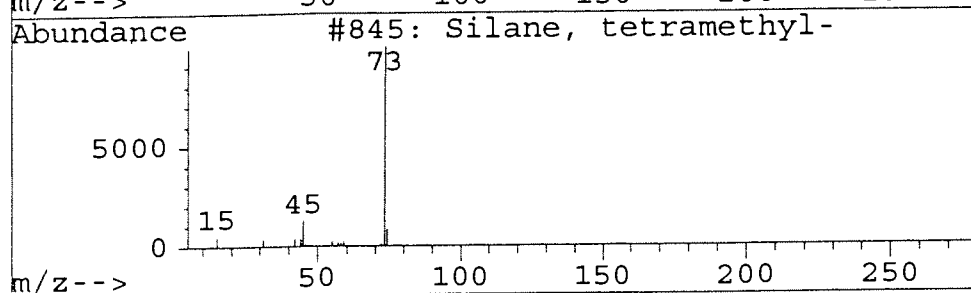
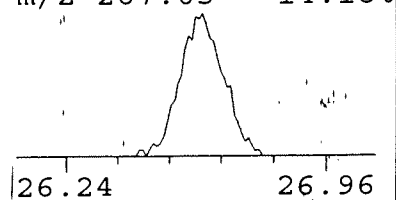
Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
26.60	1.53 ug/l	222342	1,2-Dichlorobenzene-d4	27.31

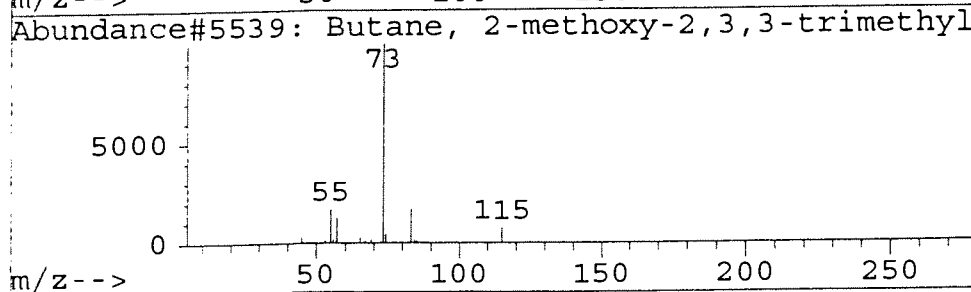
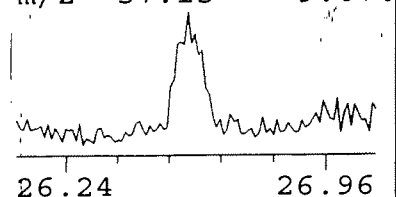
Hit#	of	Tentative ID	Ref#	CAS#	Qual
1	4	Benzoic acid, 2-[(trimethylsilyl)ox	72300	003789-85-3	33
2		Silane, tetramethyl-	845	000075-76-3	12
3		Butane, 2-methoxy-2,3,3-trimethyl-	5539	027705-21-1	10
4		3-Dodecanol, 3,7,11-trimethyl-	29677	007278-65-1	10



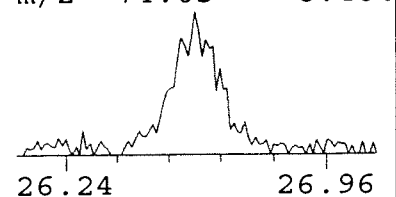
m/z 267.05 14.18%



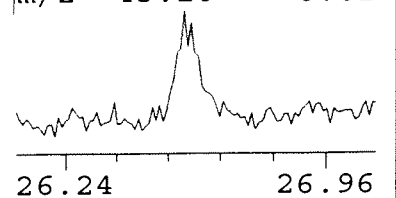
m/z 57.15 9.07%



m/z 74.05 8.48%



m/z 43.10 6.82%



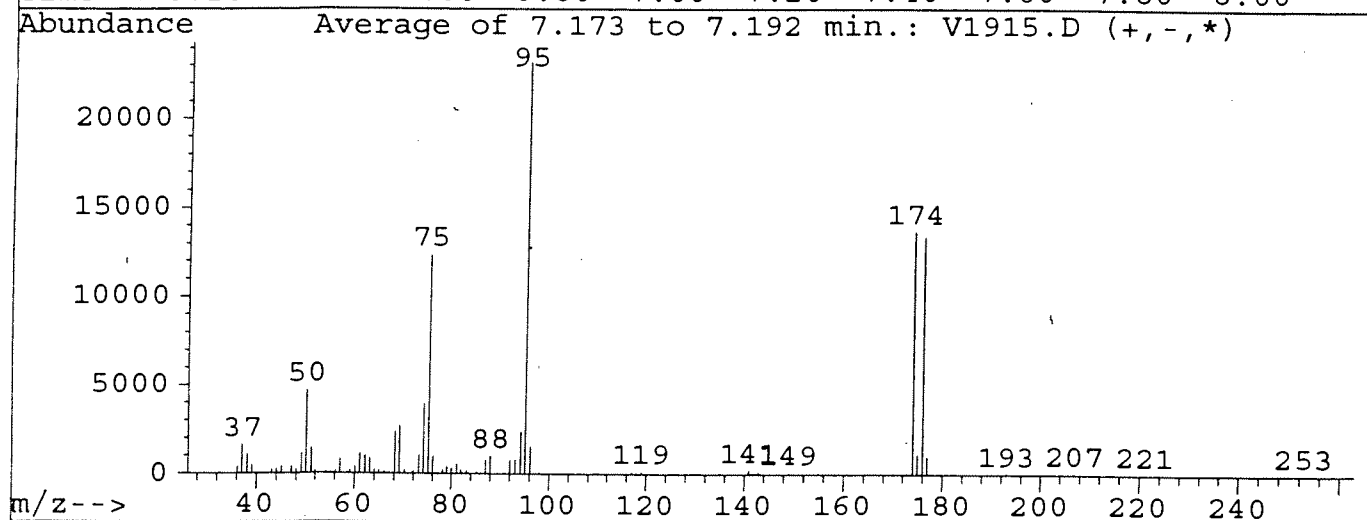
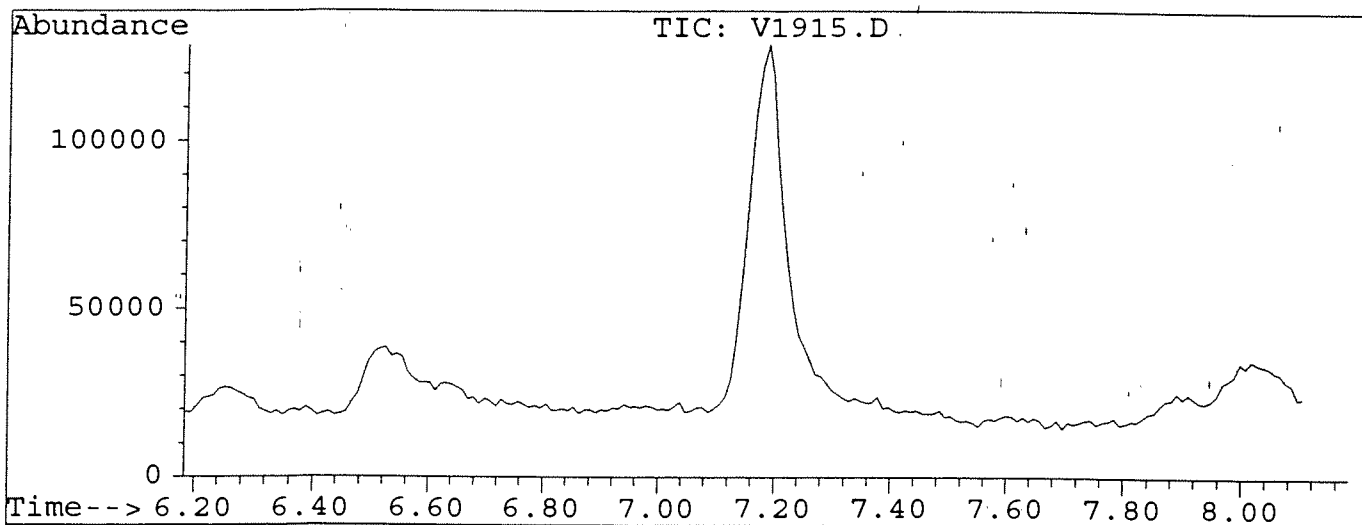
003973

BFB

Data File : C:\HPCHEM\1\DATA\NOV3\V1915.D
 Acq Time : 3 Nov 93 11:12 am
 Sample : 25 NG BFB / 5ML
 Misc : LOT #VO9308016

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
 Title :



Peak Apex is scan: 243

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.3	4698	PASS
75	95	30	60	53.3	12346	PASS
95	95	100	100	100.0	23163	PASS
96	95	5	9	6.6	1522	PASS
173	174	0	2	0.6	76	PASS
174	95	50	100	59.0	13675	PASS
175	174	5	9	8.2	1126	PASS
176	174	95	101	97.8	13368	PASS
177	176	5	9	7.5	999	PASS

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1916.D
 Acq Time : 3 Nov 93 11:38 am
 Sample : VSTD01
 Misc : 1 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:38 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration

BATCH # 104
 DATE 11/3/93
 ANALYST TR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.90	53	106328	10.00	ug/l	-0.14
24) Fluorobenzene	13.03	96	885705	10.00	ug/l	-0.18
43) 1,2-Dichlorobenzene-d4	27.32	150	358019	10.00	ug/l	-0.16

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.30	65	154084	8.07	ug/l	80.70%
32) Toluene-d8	16.84	98	753625	10.08	ug/l	100.77%
45) Bromofluorobenzene	23.60	95	421994	10.97	ug/l	

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chloromethane	4.59	50	17335	0.51	ug/l	83
3) Vinyl Chloride	4.83	62	19478	0.68	ug/l	91
4) Bromomethane	5.50	94	25586	0.75	ug/l	97
5) Chloroethane	5.59	64	16777	0.83	ug/l	89
6) Trichlorofluoromethane	6.06	101	43597	0.48	ug/l #	36
7) 1,1-Dichloroethene	7.14	96	21585	0.79	ug/l	77
8) Freon 113	6.84	101	35960	0.51	ug/l	86
9) Methylene Chloride	7.98	84	28086	1.33	ug/l #	10
10) 1,2-Dichloroethene (trans-)	8.56	96	29781	0.90	ug/l	83
11) 1,1-Dichloroethane	9.32	63	66580	0.96	ug/l	98
12) 2,2-Dichloropropane	10.45	77	51714	0.73	ug/l #	87
13) 1,2-Dichloroethene (cis-)	10.52	96	32413	0.99	ug/l	72
14) Bromochloromethane	11.20	130	13723	0.93	ug/l #	47
15) Chloroform	10.83	83	65944	0.96	ug/l	99
16) 1,1-Dichloropropene	12.02	75	52179	0.83	ug/l	96
18) 1,2-Dichloroethane	12.53	62	23104	0.88	ug/l	96
19) 1,1,1-Trichloroethane	11.71	97	65645	0.77	ug/l	99
20) Carbon Tetrachloride	12.28	117	52810	0.69	ug/l	99
21) Benzene	12.63	78	89119	0.94	ug/l	100
22) Trichloroethene	13.94	130	35665	0.84	ug/l	92
23) 1,2-Dichloropropane	14.31	63	33278	0.97	ug/l	91
25) Dibromomethane	15.01	174	12353	1.07	ug/l	87
26) Bromodichloromethane	14.87	83	51006	1.07	ug/l	96
27) cis-1,3-Dichloropropene	16.18	75	39023	1.07	ug/l	91
28) trans-1,3-Dichloropropene	17.39	75	22794	1.07	ug/l	95
29) 1,3-Dichloropropane	18.38	76	22957	1.05	ug/l	90
30) Dibromochloromethane	19.08	129	26922	1.03	ug/l	98
31) Bromoform	23.00	173	11418	0.89	ug/l	95
33) Toluene	17.05	92	58402	1.11	ug/l	88
34) 1,1,2-Trichloroethane	17.78	97	15077	1.15	ug/l	97
35) Tetrachloroethene	18.65	164	30230	0.91	ug/l	93
36) 1,2-Dibromoethane	19.56	107	16292	0.99	ug/l	99
37) Chlorobenzene	20.56	112	65487	1.11	ug/l	99
38) 1,1,1,2-Tetrachloroethane	20.64	131	27880	0.99	ug/l	97

(#) = qualifier out of range (m) = manual integration
 V1916.D 524SHORT.M Wed Nov 03 16:40:29 1993

VOA3

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Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1916.D
Acq Time : 3 Nov 93 11:38 am
Sample : VSTD01
Misc : 1 PPB 524.2 STD / 25ML
Quant Time: Nov 3 16:38 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Wed Nov 03 16:38:46 1993
Response via : Multiple Level Calibration

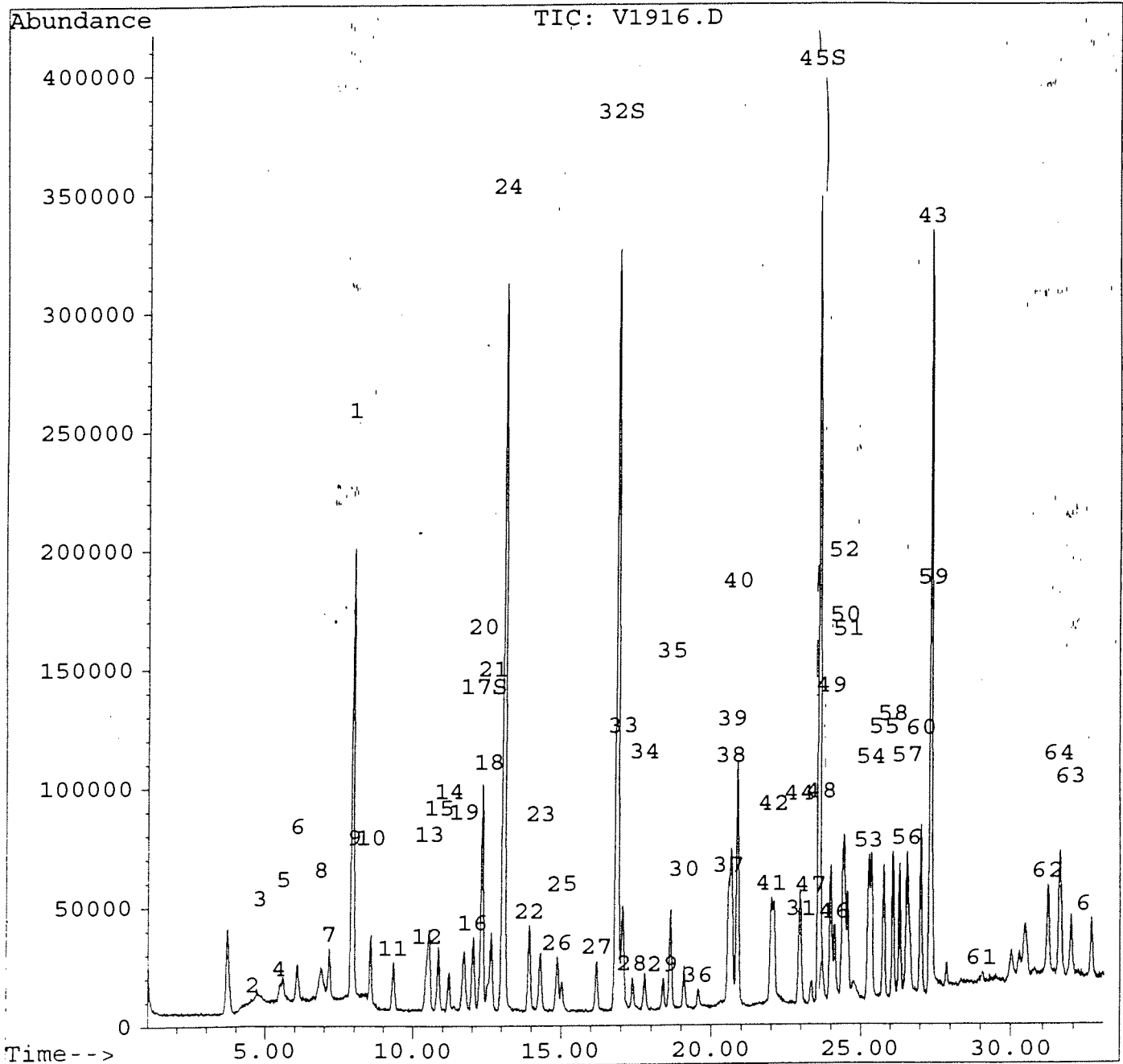
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Ethylbenzene	20.69	106	30521	0.98	ug/l m	69
40) m,p-Xylenes	20.86	106	88345	2.10	ug/l	58
41) o-Xylene	22.02	106	36523	1.05	ug/l	60
42) Styrene	22.09	104	60310	1.08	ug/l	77
44) Isopropylbenzene	22.96	105	114183	1.09	ug/l	93
46) Bromobenzene	24.12	77	56258	1.16	ug/l	90
47) 1,1,2,2-Tetrachloroethane	23.32	83	18702	1.45	ug/l	98
48) 1,2,3-Trichloropropane	23.69	75	13908	1.42	ug/l m	35
49) n-Propylbenzene	23.99	91	162626	1.11	ug/l	94
50) 2-Chlorotoluene	24.45	91	111572	1.16	ug/l m	95
51) 4-Chlorotoluene	24.55	91	81756	1.05	ug/l	95
52) 1,3,5-Trimethylbenzene	24.38	105	95873	1.15	ug/l	92
53) Tert-Butylbenzene	25.27	119	103366	1.16	ug/l	95
54) 1,2,4-Trimethylbenzene	25.35	105	104060	1.27	ug/l	84
55) Sec-Butylbenzene	25.76	105	134725	1.05	ug/l	96
56) 1,3-Dichlorobenzene	26.55	146	50060	1.09	ug/l	92
57) 1,4-Dichlorobenzene	26.55	146	49610	1.18	ug/l	88
58) p-Isopropyltoluene	26.08	119	114170	1.13	ug/l	97
59) 1,2-Dichlorobenzene	27.39	146	41190	1.26	ug/l	90
60) n-Butylbenzene	27.02	91	127722	1.08	ug/l	92
61) 1,2-Dibromo-3-Chloropropan	29.06	157	3306	1.10	ug/l	80
62) 1,2,4-Trichlorobenzene	31.17	180	32228	1.12	ug/l	95
63) Naphthalene	31.93	128	44456	1.64	ug/l m	99
64) Hexachlorobutadiene	31.56	225	32632	0.93	ug/l	92
65) 1,2,3-Trichlorobenzene	32.60	180	23746	1.08	ug/l	98

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1916.D
 Acq Time : 3 Nov 93 11:38 am
 Sample : VSTD01
 Misc : 1 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:38 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration



003977

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1917.D
 Acq Time : 3 Nov 93 12:17 pm
 Sample : VSTD04
 Misc : 4 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:13 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration

BATCH # 804
 DATE 11/3/93
 ANALYST rw

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.91	53	129979	10.00	ug/l	-0.13
24) Fluorobenzene	13.05	96	1117345	10.00	ug/l	-0.17
43) 1,2-Dichlorobenzene-d4	27.31	150	470389	10.00	ug/l	-0.16

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.32	65	193711	8.30	ug/l	82.99%
32) Toluene-d8	16.85	98	972963	10.31	ug/l	103.13%
45) Bromofluorobenzene	23.59	95	564091	11.16	ug/l	

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chloromethane	4.60	50	53263	1.27	ug/l	85
3) Vinyl Chloride	4.79	62	98487	2.82	ug/l	98
4) Bromomethane	5.49	94	97599	2.36	ug/l	94
5) Chloroethane	5.59	64	73900	3.00	ug/l	94
6) Trichlorofluoromethane	6.08	101	249181	2.24	ug/l	m 0
7) 1,1-Dichloroethene	7.14	96	108909	3.28	ug/l	80
8) Freon 113	6.86	101	198680	2.31	ug/l	90
9) Methylene Chloride	7.99	84	94778	3.68	ug/l	# 44
10) 1,2-Dichloroethene (trans-)	8.55	96	133726	3.29	ug/l	85
11) 1,1-Dichloroethane	9.33	63	262481	3.09	ug/l	99
12) 2,2-Dichloropropane	10.45	77	254696	2.93	ug/l	95
13) 1,2-Dichloroethene (cis-)	10.54	96	127700	3.19	ug/l	67
14) Bromochloromethane	11.20	130	64025	3.55	ug/l	# 48
15) Chloroform	10.85	83	271601	3.25	ug/l	100
16) 1,1-Dichloropropene	12.02	75	241115	3.12	ug/l	98
18) 1,2-Dichloroethane	12.52	62	94517	2.94	ug/l	96
19) 1,1,1-Trichloroethane	11.71	97	278823	2.67	ug/l	99
20) Carbon Tetrachloride	12.28	117	263276	2.81	ug/l	97
21) Benzene	12.63	78	380679	3.30	ug/l	100
22) Trichloroethene	13.94	130	166015	3.20	ug/l	95
23) 1,2-Dichloropropane	14.30	63	137915	3.30	ug/l	97
25) Dibromomethane	15.03	174	55406	3.81	ug/l	88
26) Bromodichloromethane	14.88	83	222583	3.71	ug/l	98
27) cis-1,3-Dichloropropene	16.18	75	170732	3.70	ug/l	100
28) trans-1,3-Dichloropropene	17.37	75	95983	3.58	ug/l	94
29) 1,3-Dichloropropane	18.38	76	109966	3.98	ug/l	96
30) Dibromochloromethane	19.08	129	116860	3.54	ug/l	97
31) Bromoform	23.00	173	57797	3.57	ug/l	99
33) Toluene	17.05	92	248044	3.75	ug/l	91
34) 1,1,2-Trichloroethane	17.78	97	62760	3.79	ug/l	96
35) Tetrachloroethene	18.62	164	148518	3.56	ug/l	93
36) 1,2-Dibromoethane	19.55	107	78747	3.81	ug/l	99
37) Chlorobenzene	20.55	112	267555	3.61	ug/l	100
38) 1,1,1,2-Tetrachloroethane	20.62	131	132517	3.73	ug/l	98

(#) = qualifier out of range (m) = manual integration
 V1917.D 524SHORT.M Wed Nov 03 16:41:38 1993

VOA3

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Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1917.D
 Acq Time : 3 Nov 93 12:17 pm
 Sample : VSTD04
 Misc : 4 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:13 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Ethylbenzene	20.67	106	137272	3.49	ug/l m	73
40) m,p-Xylenes	20.85	106	375274	7.07	ug/l	63
41) o-Xylene	21.98	106	162262	3.70	ug/l	63
42) Styrene	22.08	104	253511	3.61	ug/l	76
44) Isopropylbenzene	22.94	105	549465	3.98	ug/l	91
46) Bromobenzene	24.11	77	270886	4.25	ug/l	91
47) 1,1,2,2-Tetrachloroethane	23.33	83	82069	4.85	ug/l m	63
48) 1,2,3-Trichloropropane	23.71	75	51475	4.00	ug/l m	35
49) n-Propylbenzene	23.98	91	751964	3.90	ug/l	95
50) 2-Chlorotoluene	24.44	91	499719	3.95	ug/l m	100
51) 4-Chlorotoluene	24.54	91	430713	4.20	ug/l	91
52) 1,3,5-Trimethylbenzene	24.38	105	444505	4.07	ug/l	95
53) Tert-Butylbenzene	25.25	119	459033	3.92	ug/l	95
54) 1,2,4-Trimethylbenzene	25.34	105	431019	4.01	ug/l	83
55) Sec-Butylbenzene	25.77	105	665933	3.96	ug/l	96
56) 1,3-Dichlorobenzene	26.53	146	231672	3.83	ug/l	96
57) 1,4-Dichlorobenzene	26.53	146	230426	4.19	ug/l	93
58) p-Isopropyltoluene	26.07	119	515433	3.89	ug/l	98
59) 1,2-Dichlorobenzene	27.37	146	183577	4.29	ug/l	95
60) n-Butylbenzene	27.00	91	584015	3.75	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	29.06	157	14149	3.60	ug/l	77
62) 1,2,4-Trichlorobenzene	31.17	180	143005	3.78	ug/l	99
63) Naphthalene	31.91	128	185340	5.20	ug/l	98
64) Hexachlorobutadiene	31.56	225	149276	3.24	ug/l	92
65) 1,2,3-Trichlorobenzene	32.59	180	109315	3.77	ug/l	97

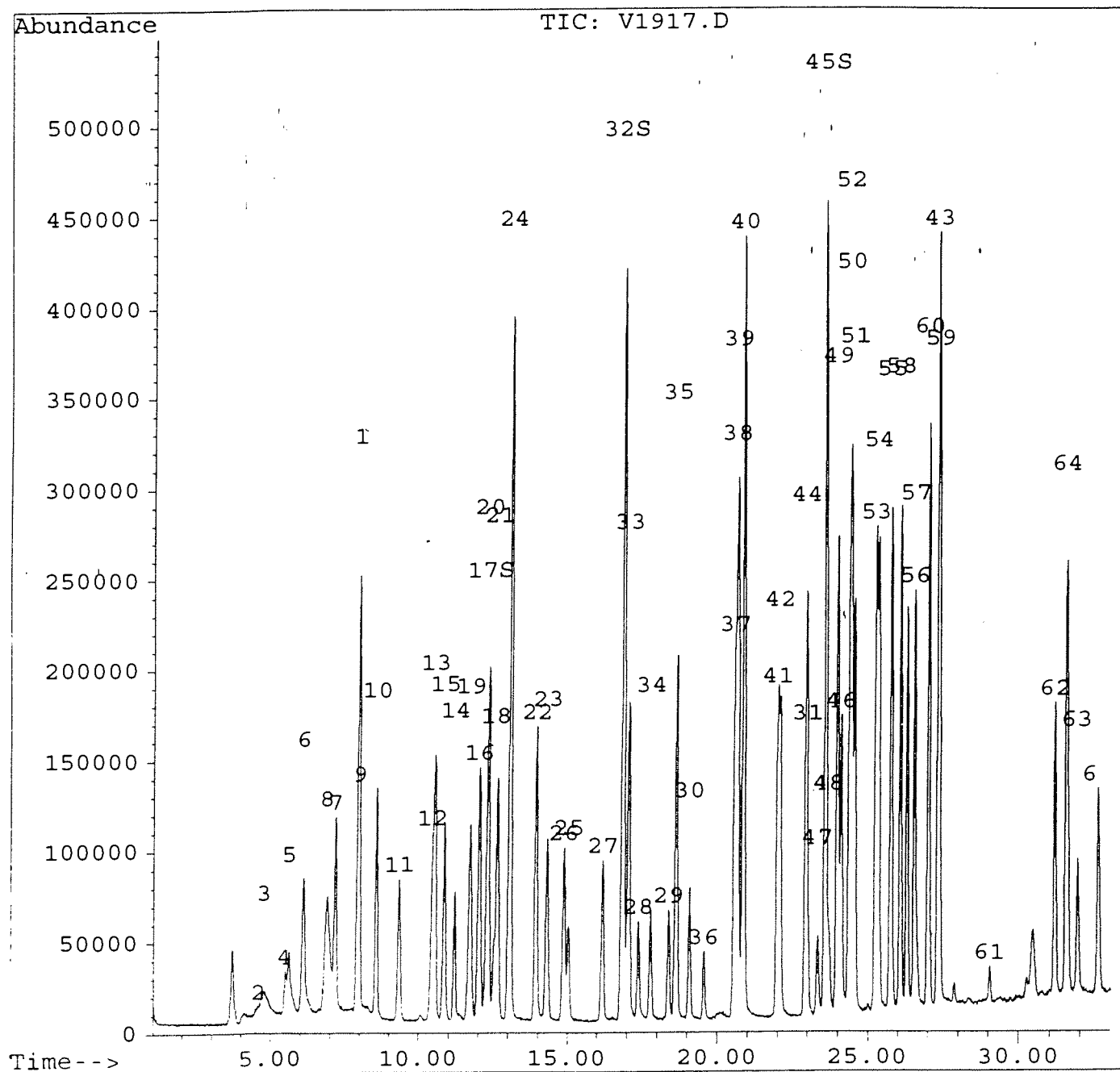
003979

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1917.D
 Acq Time : 3 Nov 93 12:17 pm
 Sample : VSTD04
 Misc : 4 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:13 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration



003980

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1918.D
 Acq Time : 3 Nov 93 12:56 pm
 Sample : VSTD10
 Misc : 10 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:13 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration

BATCH # 801
 DATE 11/3/93
 ANALYST pw

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.92	53	113943	10.00	ug/l	-0.12
24) Fluorobenzene	13.05	96	1009192	10.00	ug/l	-0.16
43) 1,2-Dichlorobenzene-d4	27.32	150	446030	10.00	ug/l	-0.16

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.33	65	167640	8.19	ug/l	81.93%
32) Toluene-d8	16.86	98	878793	10.31	ug/l	103.13%
45) Bromofluorobenzene	23.59	95	499286	10.42	ug/l	

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chloromethane	4.57	50	137439	3.74	ug/l	95
3) Vinyl Chloride	4.79	62	234344	7.65	ug/l	100
4) Bromomethane	5.49	94	214752	5.91	ug/l	94
5) Chloroethane	5.61	64	168715	7.82	ug/l	95
6) Trichlorofluoromethane	6.09	101	600006	6.16	ug/l	m 0
7) 1,1-Dichloroethene	7.16	96	255560	8.77	ug/l	80
8) Freon 113	6.86	101	484310	6.41	ug/l	94
9) Methylene Chloride	7.99	84	196229	8.70	ug/l	# 60
10) 1,2-Dichloroethene (trans-	8.56	96	304015	8.54	ug/l	83
11) 1,1-Dichloroethane	9.35	63	582996	7.82	ug/l	99
12) 2,2-Dichloropropane	10.47	77	596235	7.82	ug/l	96
13) 1,2-Dichloroethene (cis-)	10.55	96	283334	8.08	ug/l	66
14) Bromochloromethane	11.22	130	138920	8.80	ug/l	# 48
15) Chloroform	10.86	83	601355	8.20	ug/l	100
16) 1,1-Dichloropropene	12.03	75	569692	8.41	ug/l	98
18) 1,2-Dichloroethane	12.53	62	199491	7.07	ug/l	97
19) 1,1,1-Trichloroethane	11.73	97	641367	7.01	ug/l	99
20) Carbon Tetrachloride	12.29	117	632402	7.71	ug/l	97
21) Benzene	12.64	78	856436	8.46	ug/l	100
22) Trichloroethene	13.94	130	392250	8.62	ug/l	96
23) 1,2-Dichloropropane	14.31	63	298840	8.15	ug/l	98
25) Dibromomethane	15.04	174	121103	9.22	ug/l	89
26) Bromodichloromethane	14.88	83	484329	8.94	ug/l	98
27) cis-1,3-Dichloropropene	16.19	75	374503	8.99	ug/l	99
28) trans-1,3-Dichloropropene	17.38	75	205174	8.48	ug/l	98
29) 1,3-Dichloropropane	18.40	76	236038	9.46	ug/l	97
30) Dibromochloromethane	19.10	129	252965	8.47	ug/l	97
31) Bromoform	23.01	173	130233	8.90	ug/l	99
33) Toluene	17.04	92	562316	9.41	ug/l	90
34) 1,1,2-Trichloroethane	17.79	97	133268	8.91	ug/l	98
35) Tetrachloroethene	18.64	164	348611	9.25	ug/l	93
36) 1,2-Dibromoethane	19.56	107	175656	9.40	ug/l	100
37) Chlorobenzene	20.57	112	601840	8.98	ug/l	100
38) 1,1,1,2-Tetrachloroethane	20.63	131	302010	9.42	ug/l	98

(#) = qualifier out of range (m) = manual integration
 V1918.D 524SHORT.M Wed Nov 03 16:42:47 1993

VOA3

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(19)

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1918.D
Acq Time : 3 Nov 93 12:56 pm
Sample : VSTD10
Misc : 10 PPB 524.2 STD / 25ML
Quant Time: Nov 3 16:13 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Wed Nov 03 16:38:46 1993
Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Ethylbenzene	20.68	106	325069	9.14	ug/l m	75
40) m,p-Xylenes	20.86	106	856176	17.87	ug/l	64
41) o-Xylene	22.01	106	369283	9.32	ug/l m	46
42) Styrene	22.09	104	563189	8.88	ug/l	76
44) Isopropylbenzene	22.95	105	1298901	9.92	ug/l	92
46) Bromobenzene	24.12	77	598129	9.89	ug/l	92
47) 1,1,2,2-Tetrachloroethane	23.35	83	169684	10.57	ug/l	95
48) 1,2,3-Trichloropropane	23.72	75	114679	9.40	ug/l	88
49) n-Propylbenzene	23.99	91	1777189	9.73	ug/l	95
50) 2-Chlorotoluene	24.45	91	1106622	9.23	ug/l m	96
51) 4-Chlorotoluene	24.55	91	939974	9.67	ug/l	94
52) 1,3,5-Trimethylbenzene	24.38	105	1018549	9.84	ug/l	94
53) Tert-Butylbenzene	25.25	119	1094916	9.87	ug/l	96
54) 1,2,4-Trimethylbenzene	25.35	105	973333	9.56	ug/l	83
55) Sec-Butylbenzene	25.77	105	1599216	10.02	ug/l	96
56) 1,3-Dichlorobenzene	26.54	146	520192	9.07	ug/l	95
57) 1,4-Dichlorobenzene	26.54	146	517006	9.91	ug/l	92
58) p-Isopropyltoluene	26.07	119	1239807	9.88	ug/l	99
59) 1,2-Dichlorobenzene	27.38	146	417043	10.28	ug/l	96
60) n-Butylbenzene	27.01	91	1415437	9.60	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	29.05	157	29001	7.77	ug/l	73
62) 1,2,4-Trichlorobenzene	31.17	180	331603	9.24	ug/l	97
63) Naphthalene	31.91	128	385551	11.40	ug/l	98
64) Hexachlorobutadiene	31.56	225	369163	8.44	ug/l m	85
65) 1,2,3-Trichlorobenzene	32.60	180	281823	10.26	ug/l	97

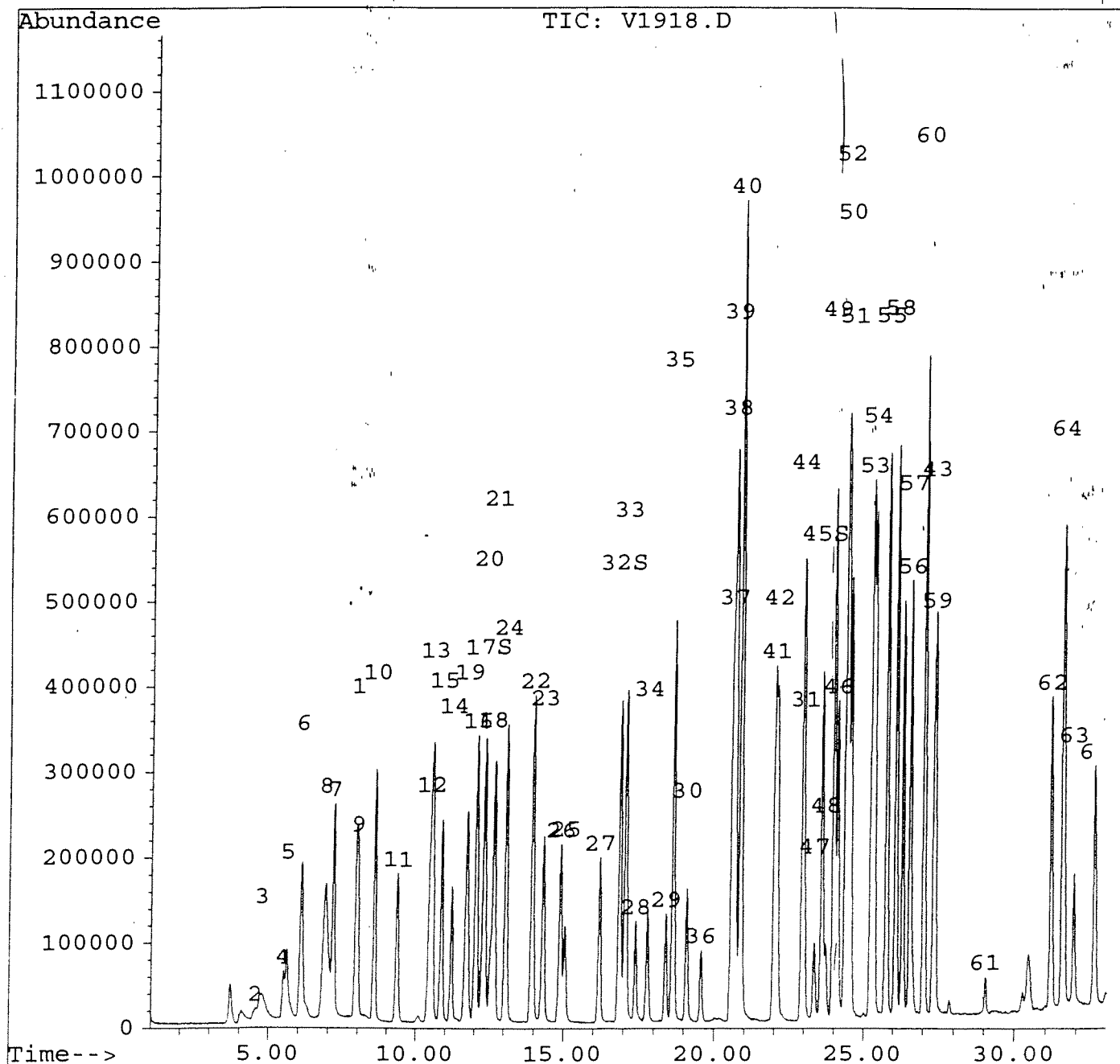
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1918.D
 Acq Time : 3 Nov 93 12:56 pm
 Sample : VSTD10
 Misc : 10 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:13 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration



003983

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1919.D
 Acq Time : 3 Nov 93 1:35 pm
 Sample : VSTD20
 Misc : 20 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:14 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration

BATCH # 804
 DATE 11/3/93
 ANALYST TM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.93	53	114037	10.00	ug/l	-0.11
24) Fluorobenzene	13.05	96	964791	10.00	ug/l	-0.17
43) 1,2-Dichlorobenzene-d4	27.32	150	482816	10.00	ug/l	-0.16

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.31	65	160041	7.81	ug/l	78.15%
32) Toluene-d8	16.85	98	841378	10.33	ug/l	103.28%
45) Bromofluorobenzene	23.59	95	491848	9.48	ug/l	

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chloromethane	4.58	50	293431	7.99	ug/l m	95
3) Vinyl Chloride	4.78	62	458715	14.97	ug/l m	99
4) Bromomethane	5.49	94	443781	12.21	ug/l m	94
5) Chloroethane	5.61	64	333354	15.43	ug/l m	96
6) Trichlorofluoromethane	6.08	101	1235211	12.67	ug/l m	0
7) 1,1-Dichloroethene	7.16	96	508073	17.41	ug/l m	82
8) Freon 113	6.87	101	1036035	13.71	ug/l m	93
9) Methylene Chloride	7.98	84	380685	16.86	ug/l m	16
10) 1,2-Dichloroethene (trans-	8.56	96	587839	16.50	ug/l m	85
11) 1,1-Dichloroethane	9.34	63	1141914	15.30	ug/l m	99
12) 2,2-Dichloropropane	10.46	77	1114600	14.60	ug/l m	96
13) 1,2-Dichloroethene (cis-)	10.53	96	558485	15.91	ug/l m	69
14) Bromochloromethane	11.21	130	263910	16.70	ug/l m	15
15) Chloroform	10.85	83	1156356	15.76	ug/l m	99
16) 1,1-Dichloropropene	12.03	75	1094693	16.15	ug/l m	98
18) 1,2-Dichloroethane	12.52	62	393914	13.95	ug/l m	75
19) 1,1,1-Trichloroethane	11.71	97	1247797	13.63	ug/l m	100
20) Carbon Tetrachloride	12.29	117	1205272	14.68	ug/l m	97
21) Benzene	12.63	78	1637499	16.16	ug/l m	100
22) Trichloroethene	13.93	130	743522	16.32	ug/l m	96
23) 1,2-Dichloropropane	14.31	63	585315	15.94	ug/l m	98
25) Dibromomethane	15.03	174	237018	18.87	ug/l	91
26) Bromodichloromethane	14.88	83	950885	18.37	ug/l	98
27) cis-1,3-Dichloropropene	16.18	75	738711	18.56	ug/l	100
28) trans-1,3-Dichloropropene	17.38	75	420643	18.19	ug/l	98
29) 1,3-Dichloropropane	18.39	76	460440	19.30	ug/l	95
30) Dibromochloromethane	19.09	129	503780	17.65	ug/l	97
31) Bromoform	23.01	173	258297	18.47	ug/l	100
33) Toluene	17.04	92	1073358	18.78	ug/l	90
34) 1,1,2-Trichloroethane	17.79	97	265889	18.59	ug/l	97
35) Tetrachloroethene	18.63	164	661539	18.36	ug/l	93
36) 1,2-Dibromoethane	19.56	107	351445	19.68	ug/l	98
37) Chlorobenzene	20.56	112	1180443	18.42	ug/l	100
38) 1,1,1,2-Tetrachloroethane	20.63	131	578039	18.86	ug/l	98

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1919.D
Acq Time : 3 Nov 93 1:35 pm
Sample : VSTD20
Misc : 20 PPB 524.2 STD / 25ML
Quant Time: Nov 3 16:14 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Wed Nov 03 16:38:46 1993
Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Ethylbenzene	20.68	106	619987	18.23	ug/l m	73
40) m,p-Xylenes	20.87	106	1660536	36.25	ug/l	62
41) o-Xylene	21.99	106	709448	18.72	ug/l	63
42) Styrene	22.09	104	1128389	18.61	ug/l	77
44) Isopropylbenzene	22.95	105	2509897	17.70	ug/l	92
46) Bromobenzene	24.11	77	1176724	17.98	ug/l	91
47) 1,1,2,2-Tetrachloroethane	23.33	83	337760	19.43	ug/l	96
48) 1,2,3-Trichloropropane	23.71	75	234008	17.72	ug/l	89
49) n-Propylbenzene	23.98	91	3469895	17.55	ug/l	95
50) 2-Chlorotoluene	24.44	91	2272668	17.52	ug/l m	97
51) 4-Chlorotoluene	24.55	91	1920850	18.26	ug/l	93
52) 1,3,5-Trimethylbenzene	24.38	105	1985532	17.72	ug/l	94
53) Tert-Butylbenzene	25.25	119	2167003	18.05	ug/l	97
54) 1,2,4-Trimethylbenzene	25.35	105	1918912	17.41	ug/l	82
55) Sec-Butylbenzene	25.76	105	3121289	18.06	ug/l	96
56) 1,3-Dichlorobenzene	26.54	146	1035691	16.68	ug/l	96
57) 1,4-Dichlorobenzene	26.54	146	1030309	18.24	ug/l	93
58) p-Isopropyltoluene	26.08	119	2432293	17.90	ug/l	99
59) 1,2-Dichlorobenzene	27.38	146	806888	18.37	ug/l	98
60) n-Butylbenzene	27.01	91	2773117	17.37	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	29.05	157	58729	14.55	ug/l	76
62) 1,2,4-Trichlorobenzene	31.17	180	649208	16.71	ug/l	97
63) Naphthalene	31.92	128	626503	17.12	ug/l	98
64) Hexachlorobutadiene	31.55	225	712302	15.05	ug/l	94
65) 1,2,3-Trichlorobenzene	32.59	180	500740	16.85	ug/l	97

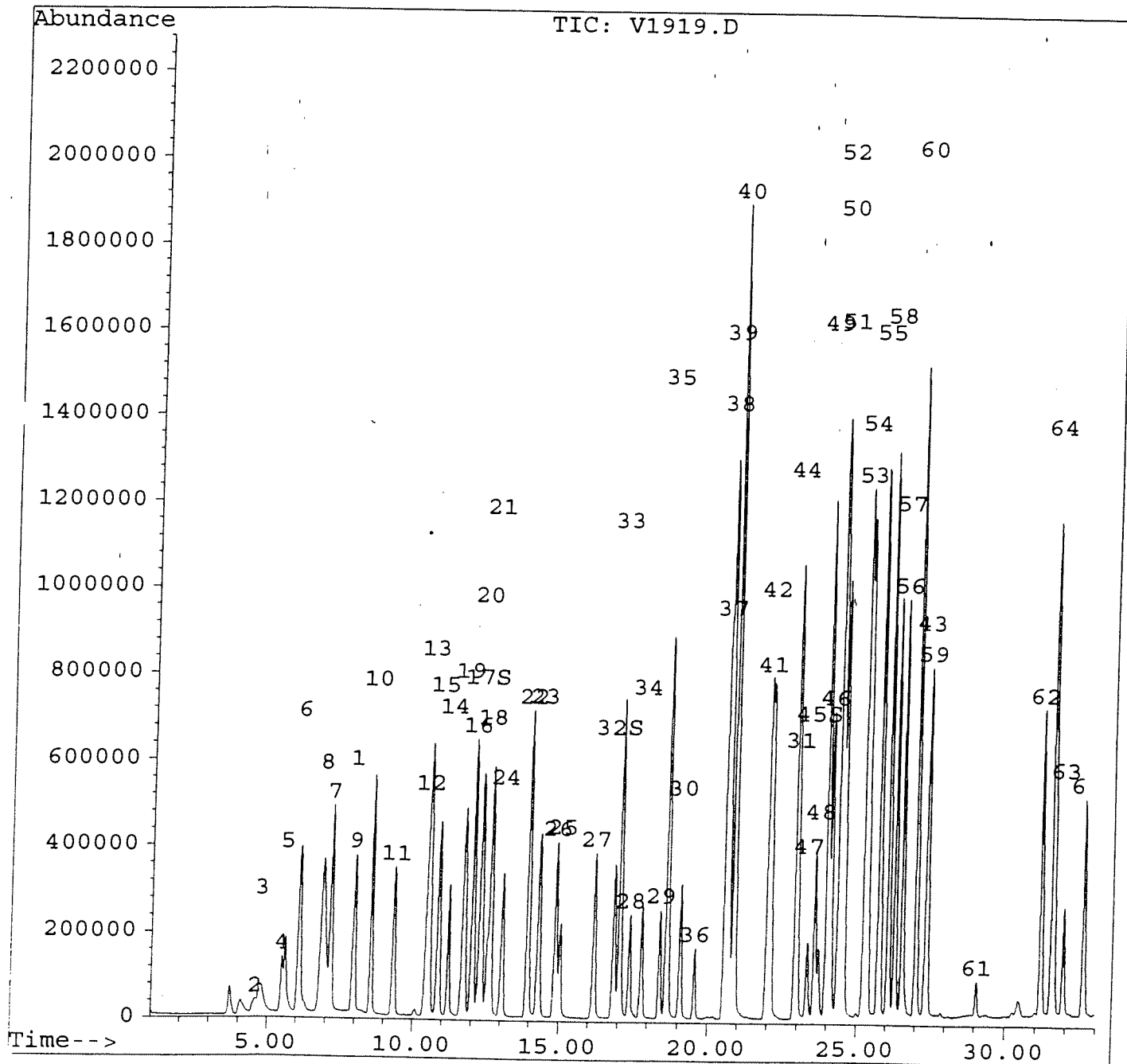
003985

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1919.D
 Acq Time : 3 Nov 93 1:35 pm
 Sample : VSTD20
 Misc : 20 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:14 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration



003986

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1920.D
 Acq Time : 3 Nov 93 2:14 pm
 Sample : VSTD30
 Misc : 30 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:17 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration

BATCH # 804
 DATE 11/3/92
 ANALYST R

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.92	53	149118	10.00	ug/l	+0.12
24) Fluorobenzene	13.05	96	1290816	10.00	ug/l	-0.16
43) 1,2-Dichlorobenzene-d4	27.31	150	667548	10.00	ug/l	-0.16
System Monitoring Compounds						
17) 1,2-Dichloroethane-d4	12.32	65	203452	7.60	ug/l	%Recovery 75.98%
32) Toluene-d8	16.85	98	1103742	10.13	ug/l	101.27%
45) Bromofluorobenzene	23.59	95	642435	8.96	ug/l	
Target Compounds						
2) Chloromethane	4.60	50	506018	10.53	ug/l	Qvalue 92
3) Vinyl Chloride	4.80	62	948630	23.67	ug/l	100
4) Bromomethane	5.49	94	921085	19.38	ug/l	94
5) Chloroethane	5.61	64	694659	24.59	ug/l	95
6) Trichlorofluoromethane	6.09	101	2562984	20.10	ug/l	m 0
7) 1,1-Dichloroethene	7.16	96	1071044	28.07	ug/l	83
8) Freon 113	6.87	101	2099946	21.25	ug/l	93
9) Methylene Chloride	7.99	84	765017	25.90	ug/l	73
10) 1,2-Dichloroethene (trans-)	8.56	96	1213238	26.04	ug/l	84
11) 1,1-Dichloroethane	9.34	63	2300474	23.57	ug/l	99
12) 2,2-Dichloropropane	10.46	77	2268110	22.72	ug/l	96
13) 1,2-Dichloroethene (cis-)	10.54	96	1134377	24.71	ug/l	68
14) Bromochloromethane	11.21	130	542573	26.25	ug/l	# 47
15) Chloroform	10.86	83	2416680	25.19	ug/l	100
16) 1,1-Dichloropropene	12.03	75	2293700	25.87	ug/l	98
18) 1,2-Dichloroethane	12.52	62	780759	21.14	ug/l	96
19) 1,1,1-Trichloroethane	11.72	97	2539821	21.22	ug/l	100
20) Carbon Tetrachloride	12.30	117	2538433	23.65	ug/l	97
21) Benzene	12.64	78	3405463	25.70	ug/l	100
22) Trichloroethene	13.93	130	1559124	26.17	ug/l	96
23) 1,2-Dichloropropane	14.30	63	1183315	24.65	ug/l	99
25) Dibromomethane	15.04	174	478587	28.47	ug/l	88
26) Bromodichloromethane	14.88	83	1944363	28.07	ug/l	97
27) cis-1,3-Dichloropropene	16.19	75	1508905	28.33	ug/l	100
28) trans-1,3-Dichloropropene	17.39	75	851557	27.52	ug/l	97
29) 1,3-Dichloropropane	18.40	76	930187	29.14	ug/l	95
30) Dibromochloromethane	19.09	129	1028421	26.93	ug/l	96
31) Bromoform	23.01	173	542320	28.99	ug/l	99
33) Toluene	17.05	92	2222392	29.07	ug/l	90
34) 1,1,2-Trichloroethane	17.79	97	534247	27.92	ug/l	96
35) Tetrachloroethene	18.64	164	1373133	28.48	ug/l	92
36) 1,2-Dibromoethane	19.56	107	714555	29.91	ug/l	99
37) Chlorobenzene	20.56	112	2408807	28.09	ug/l	100
38) 1,1,1,2-Tetrachloroethane	20.63	131	1197420	29.20	ug/l	99

(#) = qualifier out of range (m) = manual integration
 V1920.D 524SHORT.M Wed Nov 03 16:44:33 1993

VOA3

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Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1920.D
 Acq Time : 3 Nov 93 2:14 pm
 Sample : VSTD30
 Misc : 30 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:17 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration

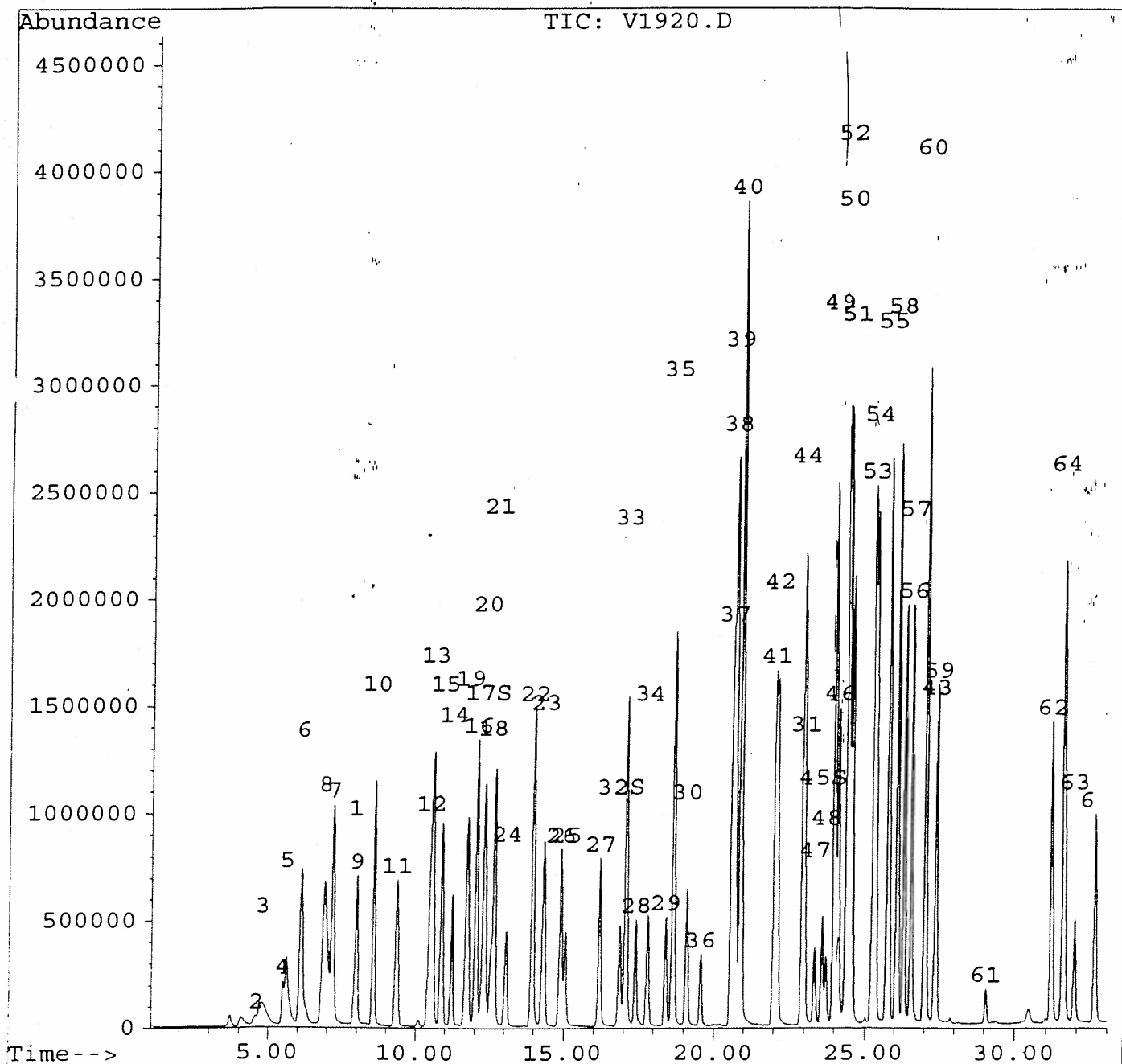
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Ethylbenzene	20.69	106	1283278	28.21	ug/l m	74
40) m,p-Xylenes	20.87	106	3446966	56.25	ug/l	64
41) o-Xylene	22.00	106	1482040	29.23	ug/l	64
42) Styrene	22.09	104	2314776	28.53	ug/l	77
44) Isopropylbenzene	22.96	105	5262417	26.84	ug/l	92
46) Bromobenzene	24.12	77	2440710	26.97	ug/l	91
47) 1,1,2,2-Tetrachloroethane	23.35	83	686236	28.56	ug/l	96
48) 1,2,3-Trichloropropane	23.73	75	454822	24.91	ug/l	89
49) n-Propylbenzene	23.99	91	7216959	26.40	ug/l	95
50) 2-Chlorotoluene	24.45	91	4705579	26.23	ug/l m	97
51) 4-Chlorotoluene	24.55	91	3915213	26.91	ug/l	94
52) 1,3,5-Trimethylbenzene	24.39	105	4144931	26.76	ug/l	94
53) Tert-Butylbenzene	25.25	119	4466854	26.91	ug/l	97
54) 1,2,4-Trimethylbenzene	25.35	105	3937545	25.84	ug/l	81
55) Sec-Butylbenzene	25.76	105	6424779	26.89	ug/l	96
56) 1,3-Dichlorobenzene	26.54	146	2102999	24.50	ug/l	96
57) 1,4-Dichlorobenzene	26.54	146	2096796	26.84	ug/l	93
58) p-Isopropyltoluene	26.07	119	5036557	26.81	ug/l	99
59) 1,2-Dichlorobenzene	27.37	146	1632439	26.88	ug/l	97
60) n-Butylbenzene	27.00	91	5597097	25.35	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	29.05	157	118292	21.19	ug/l	75
62) 1,2,4-Trichlorobenzene	31.16	180	1277785	23.78	ug/l	98
63) Naphthalene	31.92	128	1218407	24.08	ug/l	98
64) Hexachlorobutadiene	31.55	225	1375341	21.01	ug/l	93
65) 1,2,3-Trichlorobenzene	32.59	180	973780	23.69	ug/l	98

Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV3\V1920.D
 Acq Time : 3 Nov 93 2:14 pm
 Sample : VSTD30
 Misc : 30 PPB 524.2 STD / 25ML
 Quant Time: Nov 3 16:17 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:38:46 1993
 Response via : Multiple Level Calibration



003989

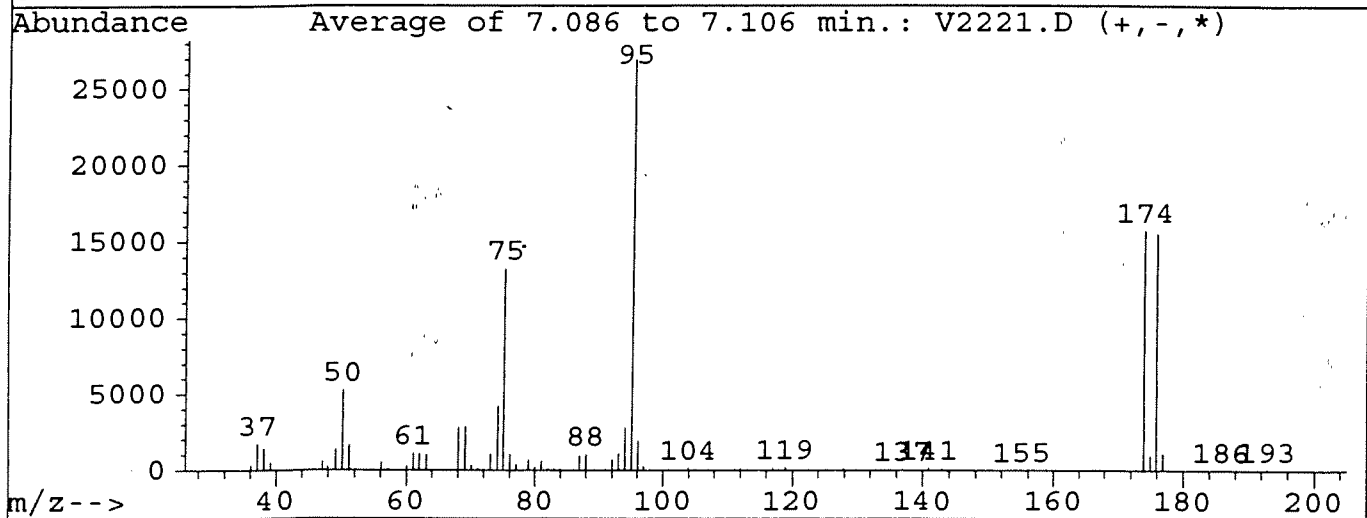
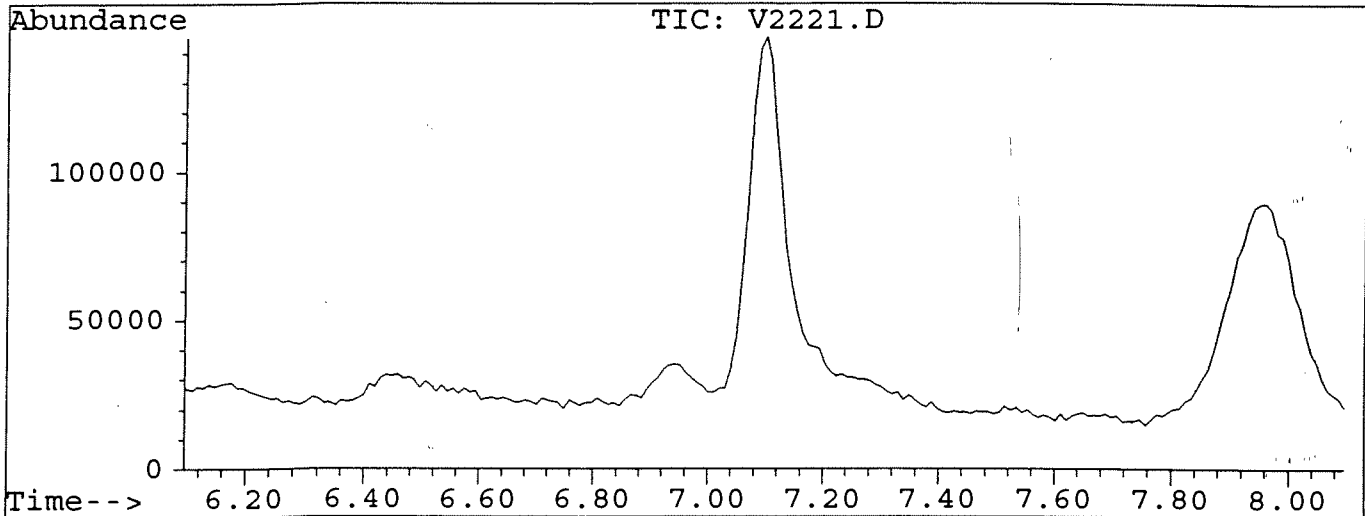
BFB

Data File : C:\HPCHEM\1\DATA\DEC3\V2221.D
 Acq Time : 3 Dec 93 9:39 am
 Sample : 25 NG BFB / 5ML
 Misc : LOT#VO9308016

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
 Title :

12/13/93



Peak Apex is scan: 234

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.5	5256	PASS
75	95	30	60	49.3	13258	PASS
95	95	100	100	100.0	26913	PASS
96	95	5	9	7.3	1952	PASS
173	174	0	2	0.3	42	PASS
174	95	50	100	58.5	15746	PASS
175	174	5	9	6.1	966	PASS
176	174	95	101	98.6	15533	PASS
177	176	5	9	7.1	1109	PASS

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2222D.D

Acq Time : 3 Dec 93 10:03 am

Sample : VSTD010

Misc : 10 PPB VOA 524.2 STD / 25ML

Quant Time: Dec 3 10:39 1993

REVIEWED & APPROVED

Operator: TERRI

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M

Title : method 524.2

Last Update : Fri Dec 03 09:20:02 1993

Response via : Multiple Level Calibration

BATCH # 815

DATE 12/3/93

ANALYST TR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.82	53	134834	10.00	ug/l	-0.11
24) Fluorobenzene	12.93	96	1195693	10.00	ug/l	-0.12
43) 1,2-Dichlorobenzene-d4	27.22	150	514321	10.00	ug/l	-0.10

System Monitoring Compounds						%Recovery
17) 1,2-Dichloroethane-d4	12.21	65	177743	9.18	ug/l	91.82%
32) Toluene-d8	16.73	98	1031367	9.98	ug/l	99.84%
45) Bromofluorobenzene	23.48	95	587834	10.43	ug/l	104.31%

Target Compounds						Qvalue
2) Chloromethane	4.53	50	136673	8.07	ug/l m	97
3) Vinyl Chloride	4.69	62	296356	11.08	ug/l	98
4) Bromomethane	5.40	94	230517	8.40	ug/l	94
5) Chloroethane	5.53	64	221155	10.94	ug/l	95
6) Trichlorofluoromethane	5.99	101	652701	9.57	ug/l m	0
7) 1,1-Dichloroethene	7.06	96	353720	11.94	ug/l	84
8) Freon 113	6.80	101	658342	11.80	ug/l	91
9) Methylene Chloride	7.88	84	224144	8.69	ug/l #	60
10) 1,2-Dichloroethene (trans-	8.46	96	408444	11.36	ug/l	86
11) 1,1-Dichloroethane	9.23	63	685568	9.57	ug/l	99
12) 2,2-Dichloropropane	10.35	77	712808	10.59	ug/l	96
13) 1,2-Dichloroethene (cis-)	10.42	96	328477	9.39	ug/l	68
14) Bromochloromethane	11.09	130	160930	9.77	ug/l #	49
15) Chloroform	10.74	83	720553	9.83	ug/l	99
16) 1,1-Dichloropropene	11.91	75	677725	10.27	ug/l	97
18) 1,2-Dichloroethane	12.40	62	211371	8.51	ug/l	96
19) 1,1,1-Trichloroethane	11.59	97	764873	10.02	ug/l	99
20) Carbon Tetrachloride	12.19	117	797235	11.14	ug/l	97
21) Benzene	12.53	78	1112907	10.86	ug/l	100
22) Trichloroethene	13.81	130	503677	11.16	ug/l	95
23) 1,2-Dichloropropane	14.18	63	341512	9.30	ug/l	98
25) Dibromomethane	14.91	174	138431	9.19	ug/l	85
26) Bromodichloromethane	14.74	83	594941	9.76	ug/l	97
27) cis-1,3-Dichloropropene	16.06	75	418668	8.90	ug/l	99
28) trans-1,3-Dichloropropene	17.27	75	225618	8.47	ug/l	98
29) 1,3-Dichloropropane	18.28	76	286222	9.83	ug/l	94
30) Dibromochloromethane	18.98	129	277893	8.65	ug/l	98
31) Bromoform	22.89	173	138822	8.78	ug/l	99
33) Toluene	16.92	92	734433	10.58	ug/l	92
34) 1,1,2-Trichloroethane	17.66	97	150723	8.77	ug/l	99
35) Tetrachloroethene	18.52	164	456273	11.12	ug/l	93
36) 1,2-Dibromoethane	19.45	107	201671	9.36	ug/l	100
37) Chlorobenzene	20.45	112	714613	9.43	ug/l	100
38) 1,1,1,2-Tetrachloroethane	20.52	131	341142	9.39	ug/l	99

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2222D.D
 Acq Time : 3 Dec 93 10:03 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML
 Quant Time: Dec 3 10:39 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

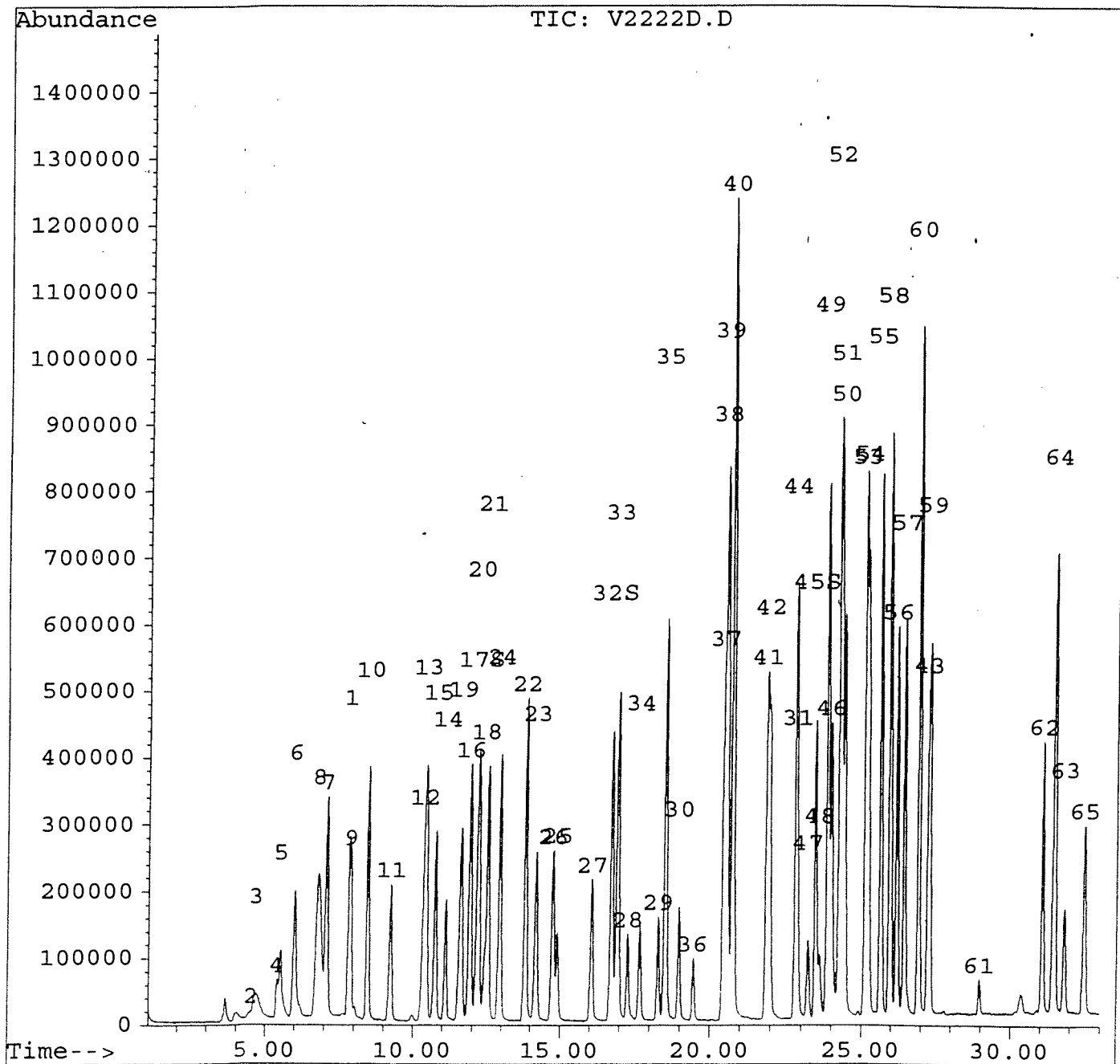
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Ethylbenzene	20.57	106	425890	10.95	ug/l m	74
40) m,p-Xylenes	20.76	106	1104677	20.83	ug/l	63
41) o-Xylene	21.87	106	469723	10.38	ug/l	66
42) Styrene	21.97	104	679556	9.51	ug/l	76
44) Isopropylbenzene	22.84	105	1592891	10.87	ug/l	93
46) Bromobenzene	24.00	77	717458	10.27	ug/l	90
47) 1,1,2,2-Tetrachloroethane	23.22	83	229724	10.99	ug/l	95
48) 1,2,3-Trichloropropane	23.60	75	132652	9.29	ug/l m	93
49) n-Propylbenzene	23.88	91	2325379	11.46	ug/l	95
50) 2-Chlorotoluene	24.44	91	1200690	9.01	ug/l	98
51) 4-Chlorotoluene	24.44	91	1202288	11.00	ug/l	89
52) 1,3,5-Trimethylbenzene	24.27	105	1319152	11.20	ug/l	94
53) Tert-Butylbenzene	25.16	119	1459550	11.58	ug/l	97
54) 1,2,4-Trimethylbenzene	25.24	105	1144893	9.82	ug/l	79
55) Sec-Butylbenzene	25.66	105	2014729	11.30	ug/l	96
56) 1,3-Dichlorobenzene	26.20	146	666063	10.82	ug/l	95
57) 1,4-Dichlorobenzene	26.44	146	646335	10.68	ug/l	93
58) p-Isopropyltoluene	25.97	119	1671610	11.83	ug/l	99
59) 1,2-Dichlorobenzene	27.28	146	499467	10.30	ug/l	97
60) n-Butylbenzene	26.91	91	1922079	12.05	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	28.94	157	36547	10.08	ug/l	72
62) 1,2,4-Trichlorobenzene	31.06	180	371891	9.73	ug/l	96
63) Naphthalene	31.79	128	403178	9.01	ug/l	98
64) Hexachlorobutadiene	31.44	225	428612	10.53	ug/l	94
65) 1,2,3-Trichlorobenzene	32.47	180	278025	9.38	ug/l	97

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2222D.D
 Acq Time : 3 Dec 93 10:03 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML
 Quant Time: Dec 3 10:39 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration



003993

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2222D.D
 Acq Time : 3 Dec 93 10:03 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
1	Methylene Chloride-d2	1.000	1.000	0.0	118	-0.11
2	Chloromethane	1.256	1.014	19.3	99	-0.04
3	Vinyl Chloride	1.983	2.198	-10.8	126	-0.10
4	Bromomethane	2.035	1.710	16.0	107	-0.09
5	Chloroethane	1.499	1.640	-9.4	131	-0.09
6	Trichlorofluoromethane	5.061	4.841	4.3	109	-0.10
7	1,1-Dichloroethene	2.198	2.623	-19.4	138	-0.10
8	Freon 113	4.138	4.883	-18.0	136	-0.07
9	Methylene Chloride	1.913	1.662	13.1	114	-0.11
10	1,2-Dichloroethene (trans-)	2.666	3.029	-13.6	134	-0.11
11	1,1-Dichloroethane	5.315	5.085	4.3	118	-0.12
12	2,2-Dichloropropane	4.990	5.287	-5.9	120	-0.12
13	1,2-Dichloroethene (cis-)	2.595	2.436	6.1	116	-0.13
	Bromochloromethane	1.222	1.194	2.3	116	-0.13
	Chloroform	5.435	5.344	1.7	120	-0.12
16	1,1-Dichloropropene	4.894	5.026	-2.7	119	-0.12
17 S	1,2-Dichloroethane-d4	1.436	1.318	8.2	106	-0.13
18	1,2-Dichloroethane	1.843	1.568	14.9	106	-0.13
19	1,1,1-Trichloroethane	5.663	5.673	-0.2	119	-0.14
20	Carbon Tetrachloride	5.308	5.913	-11.4	126	-0.11
21	Benzene	7.602	8.254	-8.6	130	-0.12
22	Trichloroethene	3.347	3.736	-11.6	128	-0.13
23	1,2-Dichloropropane	2.723	2.533	7.0	114	-0.13
24	Fluorobenzene	1.000	1.000	0.0	118	-0.12
25	Dibromomethane	0.126	0.116	8.1	114	-0.13
26	Bromodichloromethane	0.510	0.498	2.4	123	-0.14
27	cis-1,3-Dichloropropene	0.393	0.350	11.0	112	-0.13
28	trans-1,3-Dichloropropene	0.223	0.189	15.3	110	-0.11
29	1,3-Dichloropropane	0.244	0.239	1.7	121	-0.12
30	Dibromochloromethane	0.269	0.232	13.5	110	-0.12
31	Bromoform	0.132	0.116	12.2	107	-0.12
32 S	Toluene-d8	0.864	0.863	0.2	117	-0.13
33	Toluene	0.580	0.614	-5.8	131	-0.12
34	1,1,2-Trichloroethane	0.144	0.126	12.3	113	-0.13
35	Tetrachloroethene	0.343	0.382	-11.2	131	-0.12
36	1,2-Dibromoethane	0.180	0.169	6.4	115	-0.12
37	Chlorobenzene	0.634	0.598	5.7	119	-0.12
38	1,1,1,2-Tetrachloroethane	0.304	0.285	6.1	113	-0.11
	Ethylbenzene	0.325	0.356	-9.5	131	-0.11
	m,p-Xylenes	0.444	0.462	-4.1	129	-0.11
41	o-Xylene	0.378	0.393	-3.8	127	-0.14

(#) = Out of Range
 V2222D.D 524METH.M

Fri Dec 03 10:39:33 1993

VOA3

Page 1

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(4)

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2222D.D
 Acq Time : 3 Dec 93 10:03 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
42	Styrene	0.598	0.568	4.9	121	-0.13
43	1,2-Dichlorobenzene-d4	1.000	1.000	0.0	115	-0.10
44	Isopropylbenzene	2.850	3.097	-8.7	123	-0.11
45 S	Bromofluorobenzene	1.096	1.143	-4.3	118	-0.11
46	Bromobenzene	1.358	1.395	-2.7	120	-0.12
47	1,1,2,2-Tetrachloroethane	0.406	0.447	-9.9	135	-0.13
48	1,2,3-Trichloropropane	0.278	0.258	7.1	116	-0.12
49	n-Propylbenzene	3.944	4.521	-14.6	131	-0.11
50	2-Chlorotoluene	2.591	2.335	9.9	109	0.00
51	4-Chlorotoluene	2.125	2.338	-10.0	128	-0.12
52	1,3,5-Trimethylbenzene	2.290	2.565	-12.0	130	-0.11
53	Tert-Butylbenzene	2.451	2.838	-15.8	133	-0.10
	1,2,4-Trimethylbenzene	2.267	2.226	1.8	118	-0.11
	Sec-Butylbenzene	3.466	3.917	-13.0	126	-0.11
56	1,3-Dichlorobenzene	1.197	1.295	-8.2	121	-0.10
57	1,4-Dichlorobenzene	1.177	1.257	-6.8	125	-0.10
58	p-Isopropyltoluene	2.748	3.250	-18.3	135	-0.10
59	1,2-Dichlorobenzene	0.942	0.971	-3.0	120	-0.10
60	n-Butylbenzene	3.102	3.737	-20.5	136	-0.10
61	1,2-Dibromo-3-Chloropropane	0.070	0.071	-0.8	126	-0.11
62	1,2,4-Trichlorobenzene	0.743	0.723	2.7	112	-0.11
63	Naphthalene	0.870	0.784	9.9	105	-0.12
64	Hexachlorobutadiene	0.791	0.833	-5.3	116	-0.12
65	1,2,3-Trichlorobenzene	0.576	0.541	6.2	99	-0.13

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2224D.D
 Acq Time : 3 Dec 93 11:20 am
 Sample : METHOD BLANK
 Misc : MB815 / b#815 / 25ML
 Quant Time: Dec 3 11:53 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.83	53	82975	10.00	ug/l	-0.09
24) Fluorobenzene	12.95	96	683554	10.00	ug/l	-0.10
43) 1,2-Dichlorobenzene-d4	27.23	150	266339	10.00	ug/l	-0.09
						%Recovery
System Monitoring Compounds						
17) 1,2-Dichloroethane-d4	12.22	65	111722	9.38	ug/l	93.78%
32) Toluene-d8	16.75	98	587609	9.95	ug/l	99.50%
45) Bromofluorobenzene	23.49	95	340769	11.68	ug/l	116.77%
						Qvalue
Target Compounds						
9) Methylene Chloride	7.86	84	3879	0.24	ug/l	# 1
63) Naphthalene	31.80	128	4771	0.21	ug/l	92

BATCH # 815
 DATE 12/3/93
 ANALYST rw

REVIEWED & APPROVED
 BY [Signature] DATE 12/7/93

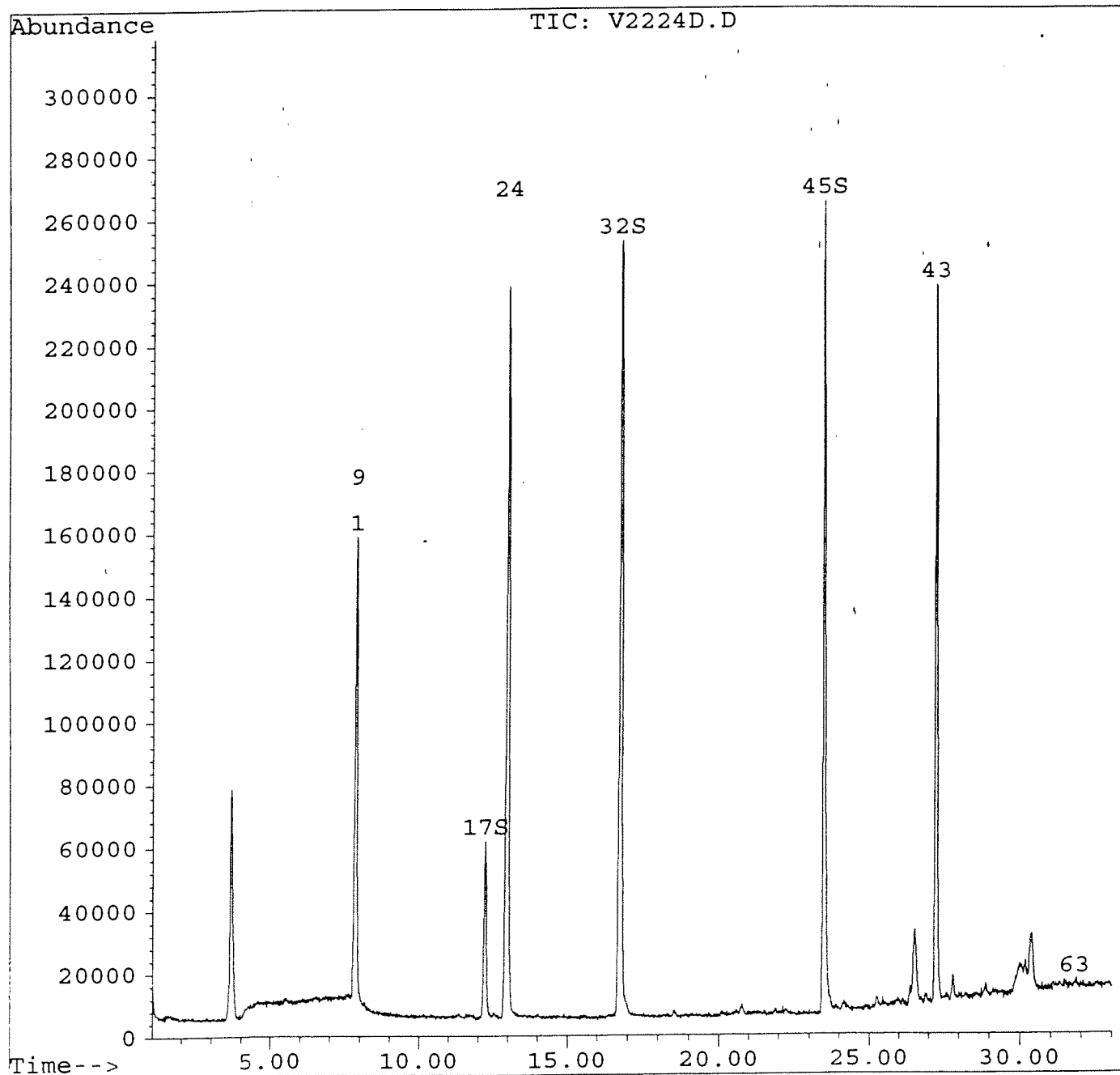
VOA. 524.2 12-275-1

Quantitation Report

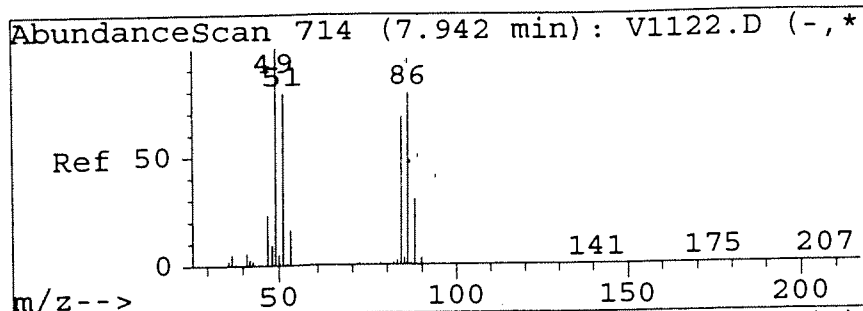
Data File : C:\HPCHEM\1\DATA\DEC3\V2224D.D
Acq Time. : 3 Dec 93 11:20 am
Sample : METHOD BLANK
Misc : MB815 / b#815 / 25ML
Quant Time: Dec 3 11:53 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

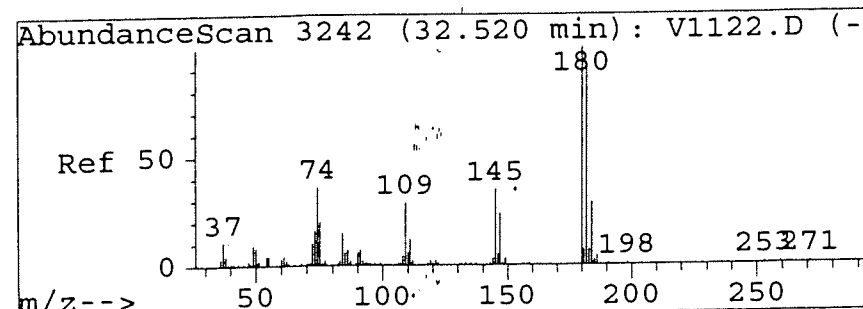
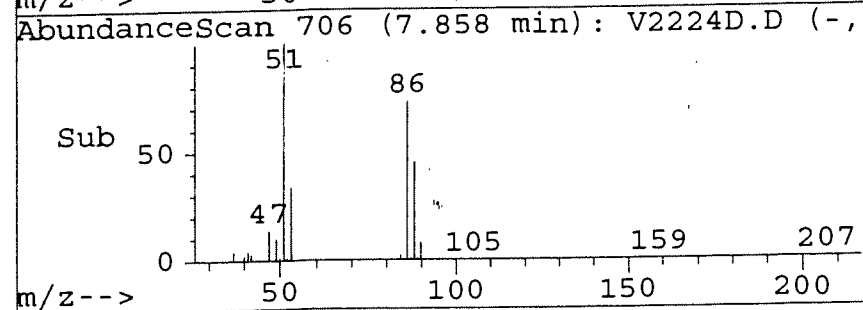
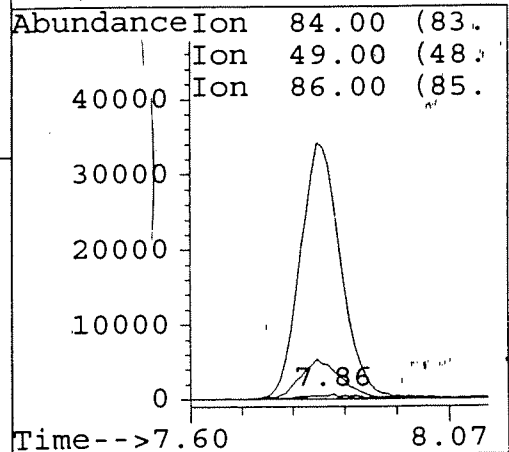
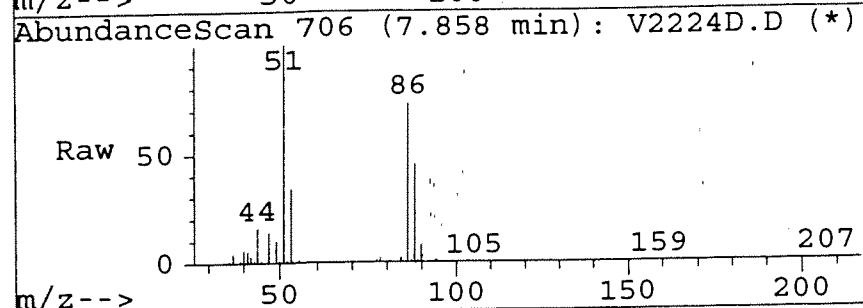


003997



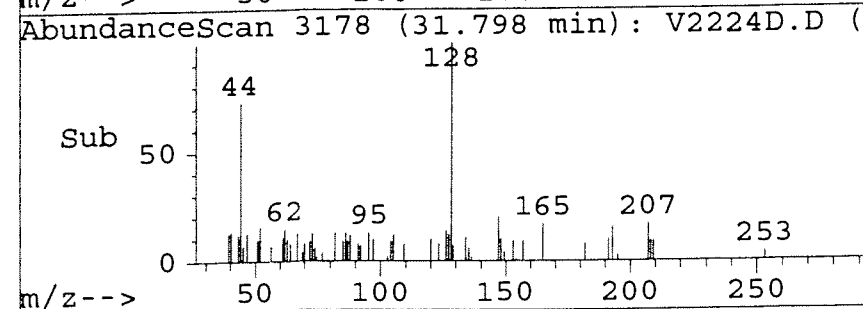
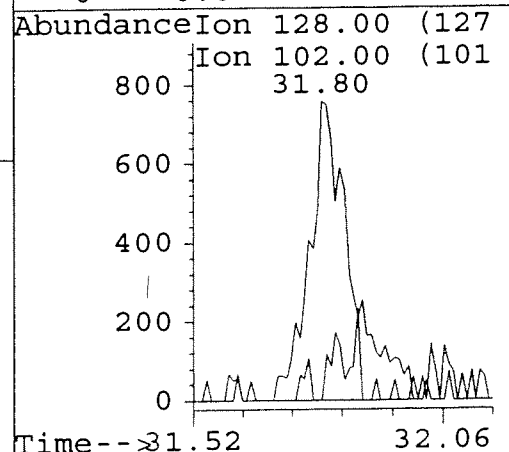
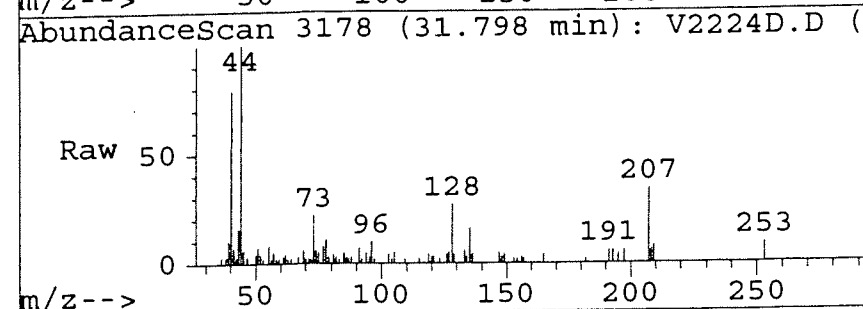
#9
Methylene Chloride
Concen: 0.24 ug/l
RT: 7.86 min Scan# 706
Delta R.T. -0.13 min
Lab File: V2224D.D
Acq: 3 Dec 93 11:20 am

Tgt Ion:	84	Resp:	3879
Ion Ratio	Lower	Upper	
84	100		
49	725.3	86.0	186.0#
86	4556.2	12.0	112.0#
0	0.0	0.0	0.0



#63
Naphthalene
Concen: 0.21 ug/l
RT: 31.80 min Scan# 3178
Delta R.T. -0.11 min
Lab File: V2224D.D
Acq: 3 Dec 93 11:20 am

Tgt Ion:	128	Resp:	4771
Ion Ratio	Lower	Upper	
128	100		
102	6.9	2.5	17.5
0	0.0	0.0	0.0
0	0.0	0.0	0.0



003998

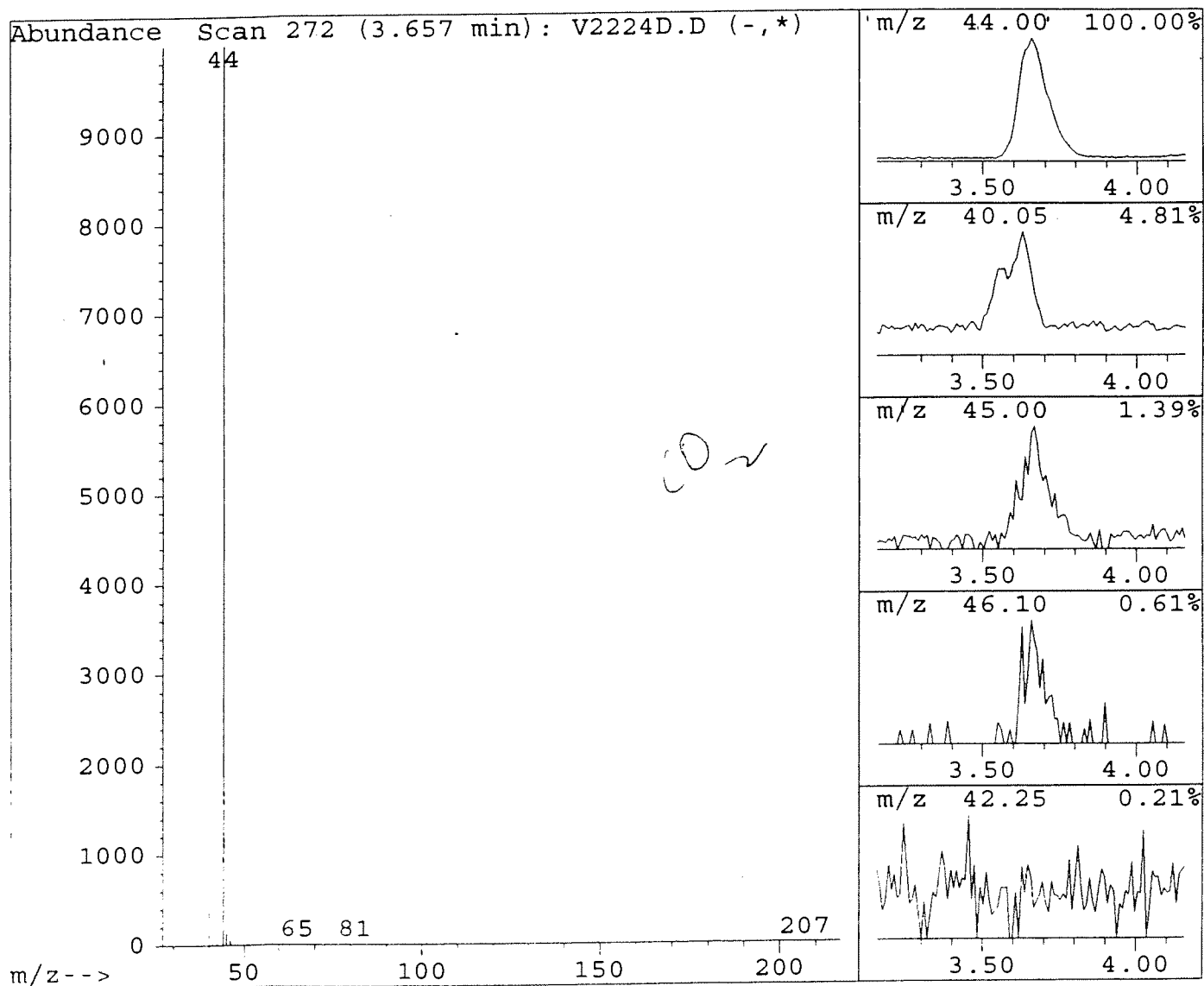
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2224D.D
Acq Time : 3 Dec 93 11:20 am
Sample : METHOD BLANK
Misc : MB815 / b#815 / 25ML

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative, to ISTD	R.T.	
3.66	6.54 ug/l	493563	Methylene Chloride-d2	7.83	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 Unknown			0	000000-00-0	0



003999

Raw Data (Chromatograms)

004000

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2225D.D
 Acq Time : 3 Dec 93 11:58 am
 Sample : G9311378*1
 Misc : GW-2 / SEACOR.SLO / b#815 / 25mL
 Quant Time: Dec 3 12:32 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.85	53	120436	10.00	ug/l	-0.07
24) Fluorobenzene	12.95	96	1032087	10.00	ug/l	-0.09
43) 1,2-Dichlorobenzene-d4	27.23	150	372085	10.00	ug/l	-0.09

System Monitoring Compounds						%Recovery
17) 1,2-Dichloroethane-d4	12.24	65	157249	9.09	ug/l	90.94%
32) Toluene-d8	16.76	98	889954	9.98	ug/l	99.81%
45) Bromofluorobenzene	23.50	95	499159	12.24	ug/l	122.44%

Target Compounds						Qvalue
9) Methylene Chloride	7.88	84	6562	0.28 ug/l	#	1
13) 1,2-Dichloroethene (cis-)	10.46	96	12457	0.40 ug/l	0.4	85
15) Chloroform	10.79	83	21668	0.33 ug/l	0.3	95
19) 1,1,1-Trichloroethane	11.65	97	25268	0.37 ug/l	0.4	96
22) Trichloroethene	13.85	130	1150039	28.53 ug/l	29	95
35) Tetrachloroethene	18.55	164	58601	1.65 ug/l	1.7	92

BATCH # 815
 DATE 12/3/93
 ANALYST [Signature]

REVIEWED & APPROVED
 BY [Signature] DATE 2/2/93

~~unt. loc. - 1.00~~

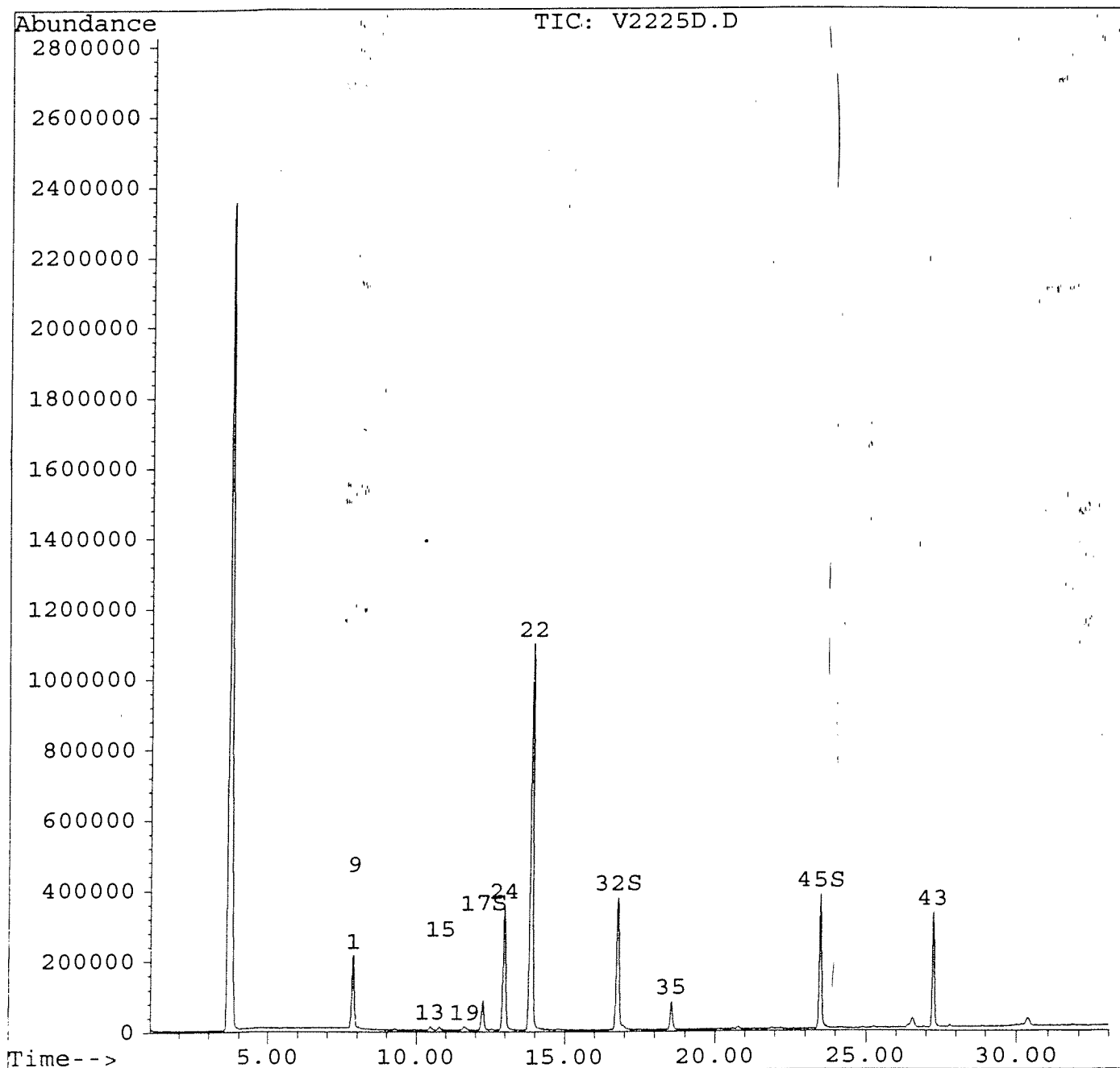
004001

Quantitation Report

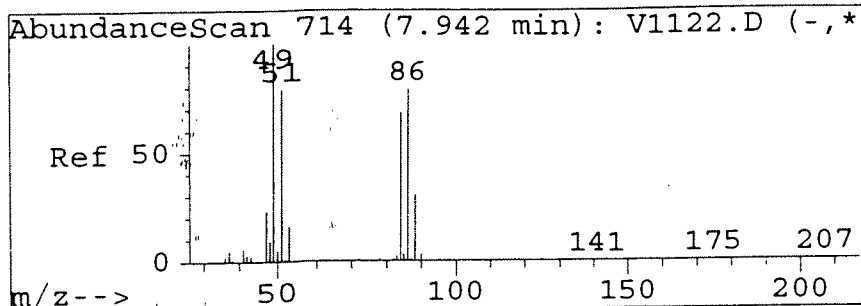
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Acq Time : 3 Dec 93 11:58 am
Sample : G9311378*1
Misc : GW-2 / SEACOR.SLO / b#815 / 25mL
Quant Time: Dec 3 12:32 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

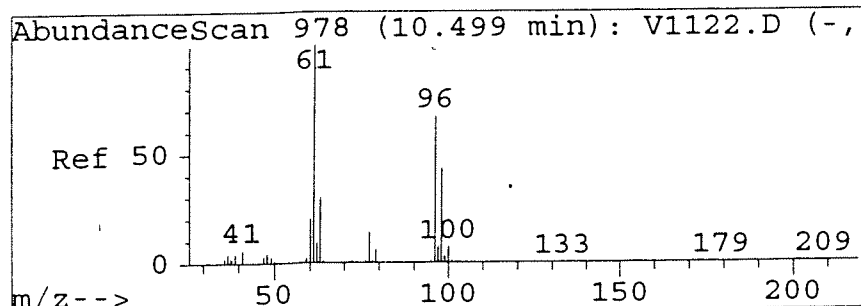
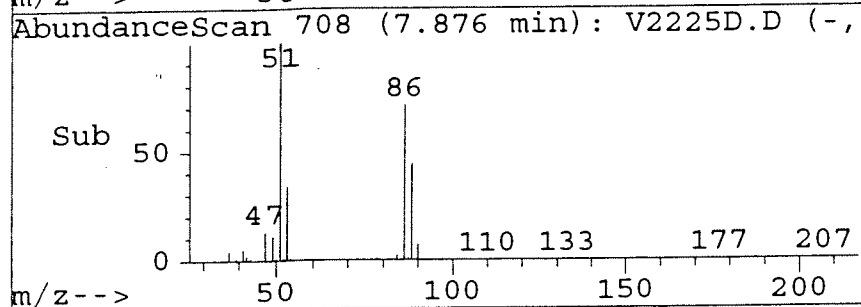
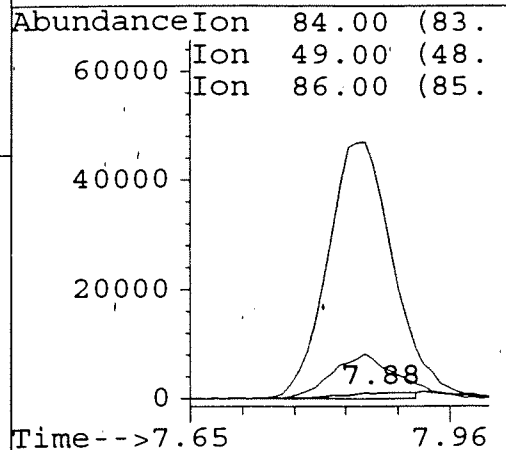
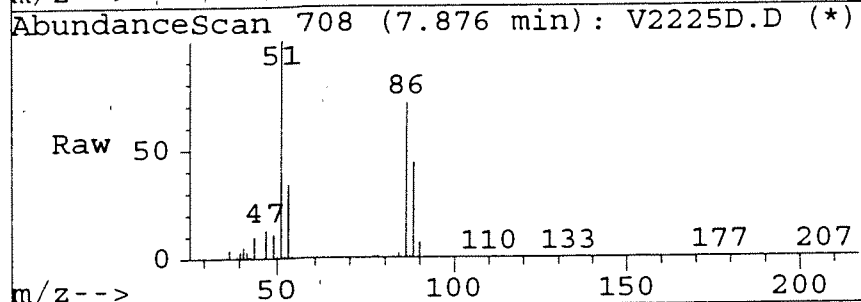


004002



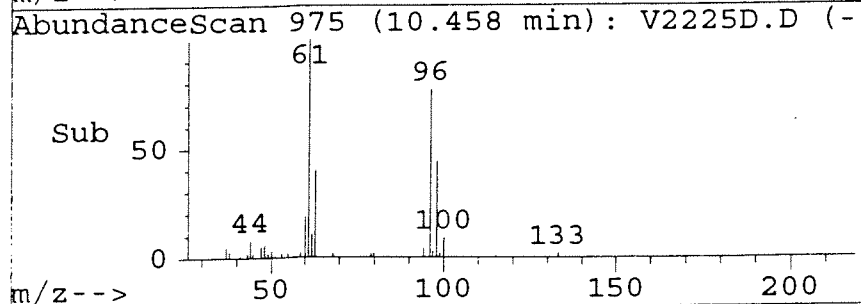
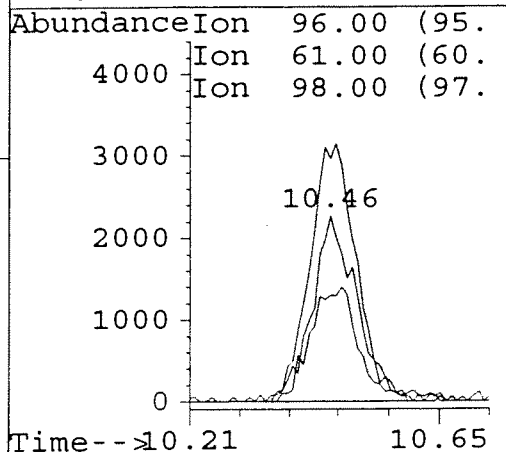
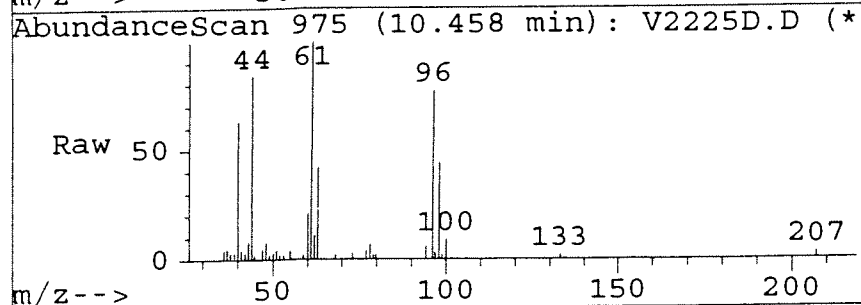
#9
Methylene Chloride
Concen: 0.28 ug/l
RT: 7.88 min Scan# 708
Delta R.T. -0.11 min
Lab File: V2225D.D
Acq: 3 Dec 93 11:58 am

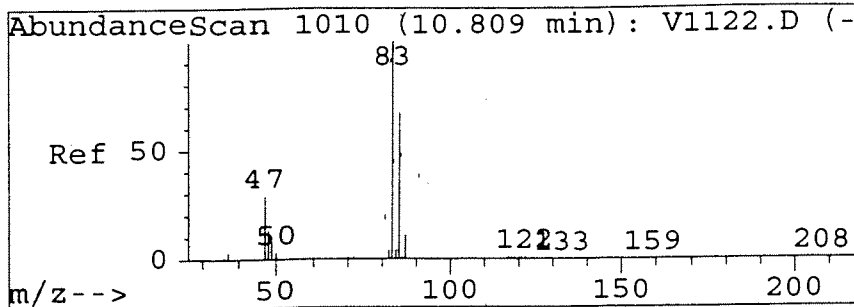
Tgt Ion: 84 Resp: 6562
Ion Ratio Lower Upper
84 100
49 694.4 86.0 186.0#
86 3842.2 12.0 112.0#
0 0.0 0.0 0.0



#13
1,2-Dichloroethene (cis-)
Concen: 0.40 ug/l
RT: 10.46 min Scan# 975
Delta R.T. -0.09 min
Lab File: V2225D.D
Acq: 3 Dec 93 11:58 am

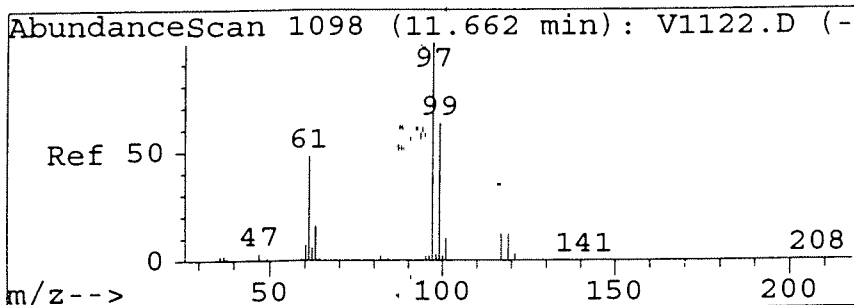
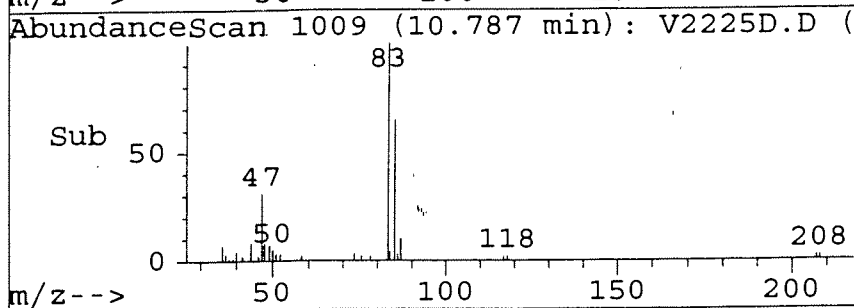
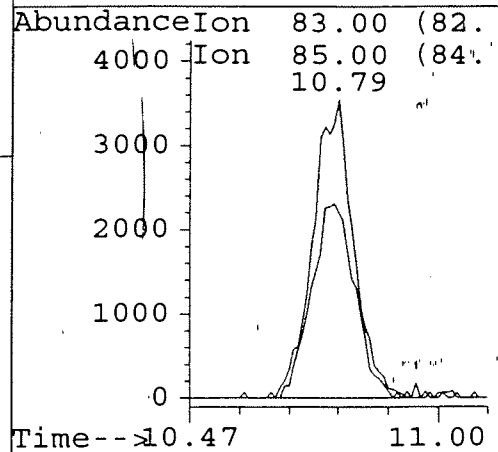
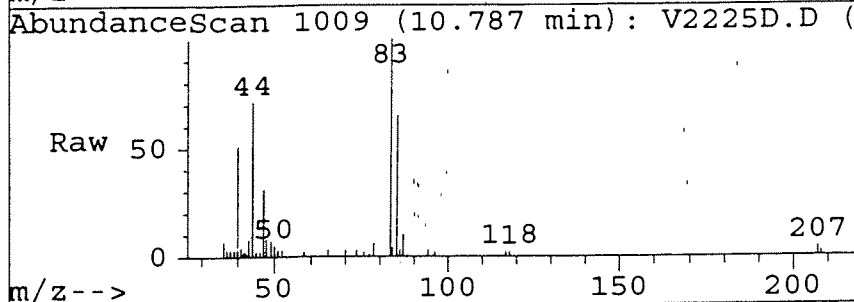
Tgt Ion: 96 Resp: 12457
Ion Ratio Lower Upper
96 100
61 147.0 61.5 184.5
98 66.9 32.5 97.5
0 0.0 0.0 0.0





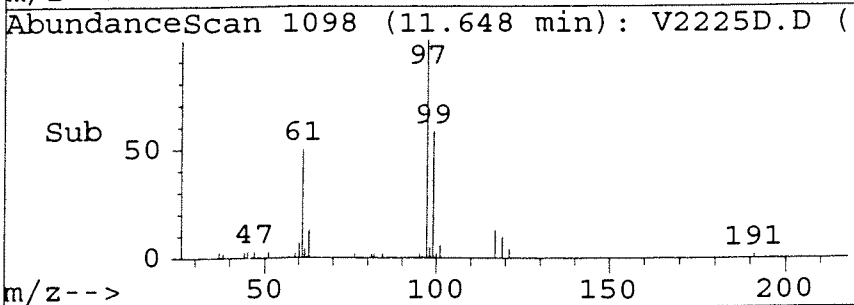
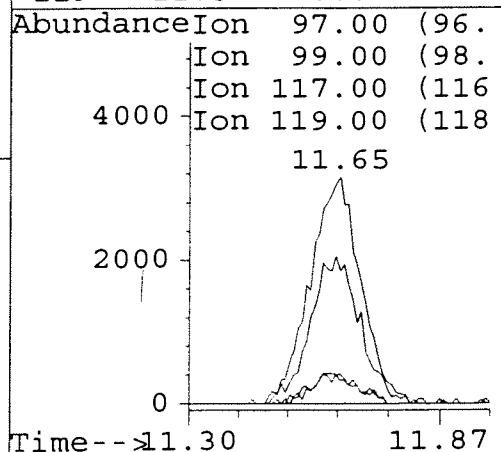
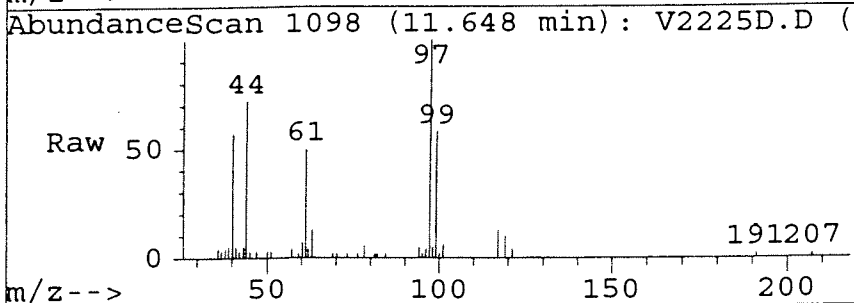
#15
Chloroform
Concen: 0.33 ug/l
RT: 10.79 min Scan# 1009
Delta R.T. -0.07 min
Lab File: V2225D.D
Acq: 3 Dec 93 11:58 am

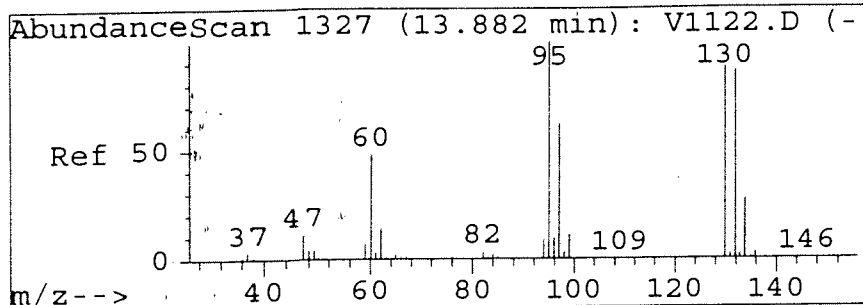
Tgt Ion:	83	Resp:	21668
Ion Ratio	Lower	Upper	
83	100		
85	69.7	15.6	115.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#19
1,1,1-Trichloroethane
Concen: 0.37 ug/l
RT: 11.65 min Scan# 1098
Delta R.T. -0.08 min
Lab File: V2225D.D
Acq: 3 Dec 93 11:58 am

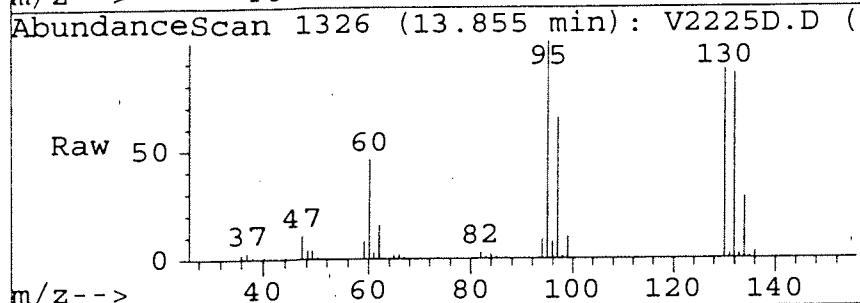
Tgt Ion:	97	Resp:	25268
Ion Ratio	Lower	Upper	
97	100		
99	64.1	15.6	115.6
117	5.5	0.0	62.3
119	11.3	0.0	62.0



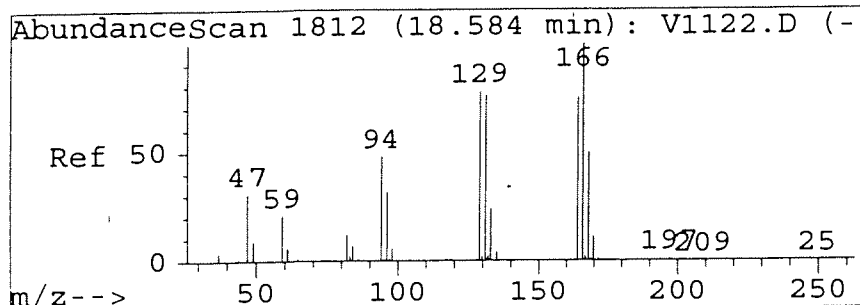
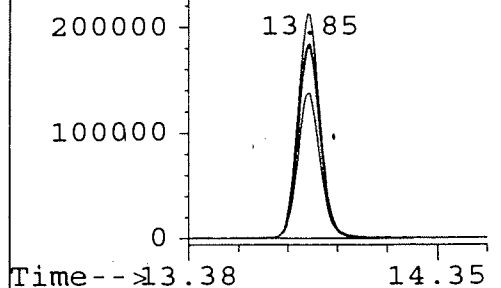
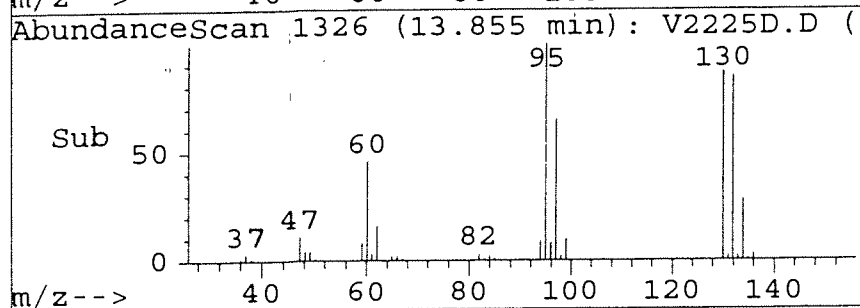


#22
Trichloroethene
Concen: 28.53 ug/l
RT: 13.85 min Scan# 1326
Delta R.T. -0.09 min
Lab File: V2225D.D
Acq: 3 Dec 93 11:58 am

Tgt Ion:	130	Resp:	1150039
Ion	Ratio	Lower	Upper
130	100		
132	97.7	48.4	148.4
95	114.5	59.0	159.0
97	74.2	17.0	117.0

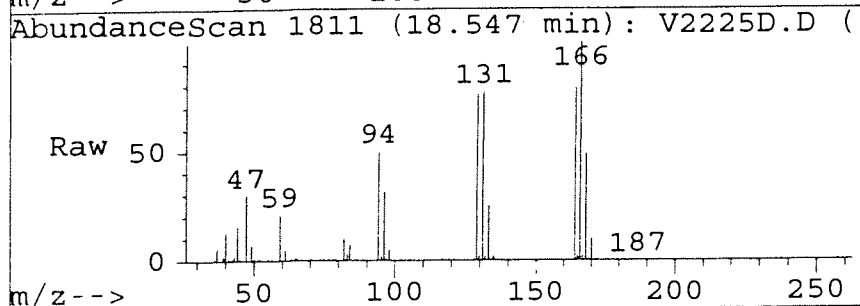


Abundance	Ion	130.00	(129
	Ion	132.00	(131
300000	Ion	95.00	(94.
	Ion	97.00	(96.

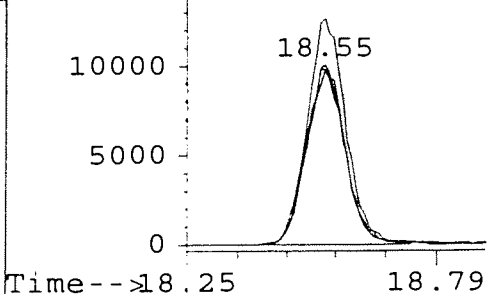
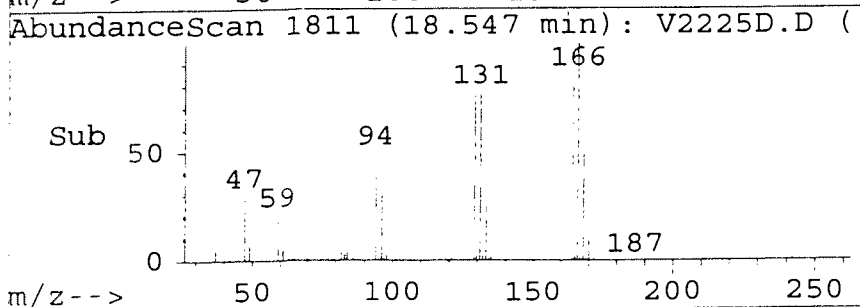


#35
Tetrachloroethene
Concen: 1.65 ug/l
RT: 18.55 min Scan# 1811
Delta R.T. -0.09 min
Lab File: V2225D.D
Acq: 3 Dec 93 11:58 am

Tgt Ion:	164	Resp:	58601
Ion	Ratio	Lower	Upper
164	100		
166	128.3	84.0	184.0
129	100.6	40.0	140.0
131	98.6	40.0	140.0



Abundance	Ion	164.00	(163
20000	Ion	166.00	(165
	Ion	129.00	(128
15000	Ion	131.00	(130



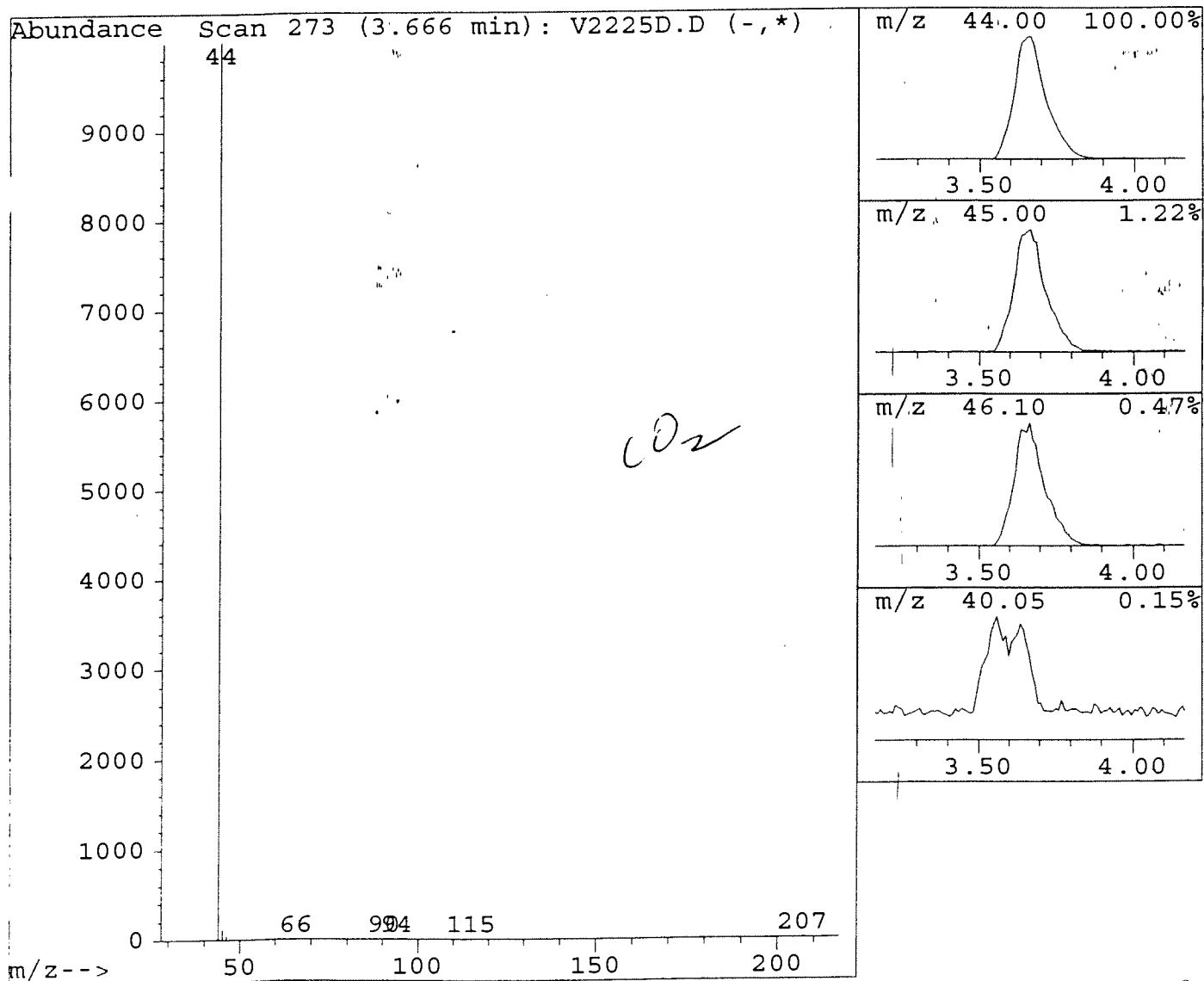
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2225D.D
Acq Time : 3 Dec 93 11:58 am
Sample : G9311378*1
Misc : GW-2 / SEACOR.SLO / b#815 / 25mL

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
3.67	158.89 ug/l	17207207	Methylene Chloride-d2	7.85	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 Unknown			0	000000-00-0	0



004006

Library Search Compound Report

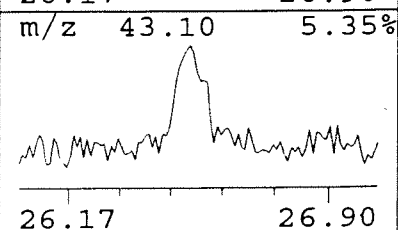
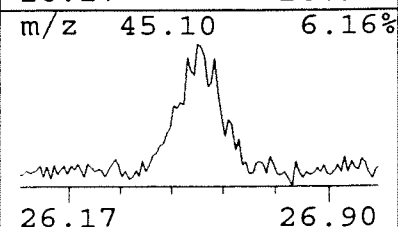
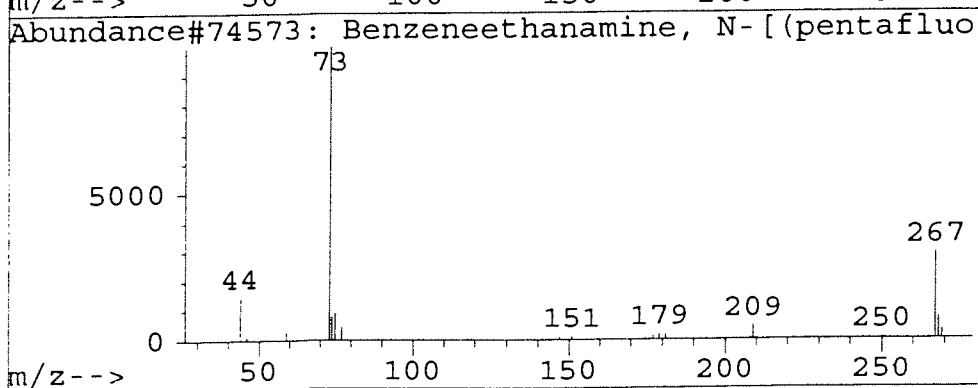
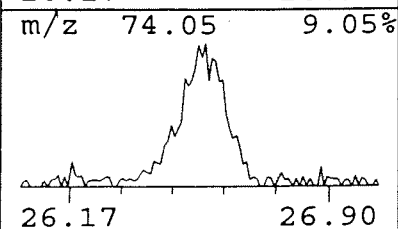
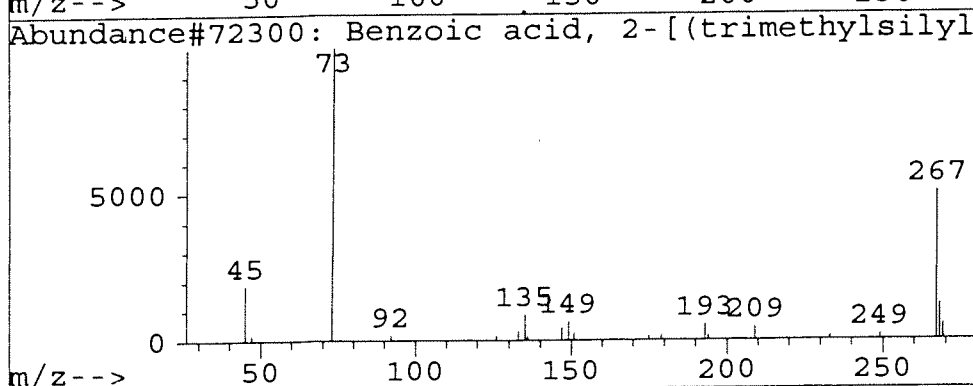
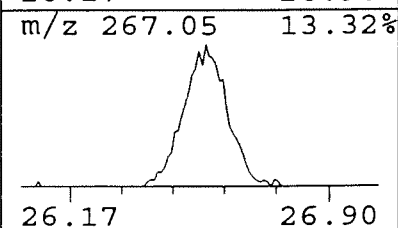
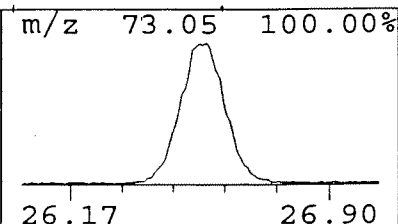
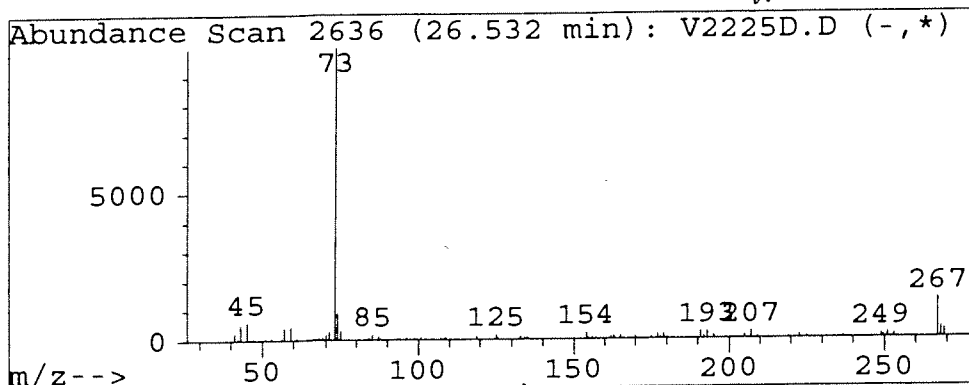
Data File : C:\HPCHEM\1\DATA\DEC3\V2225D.D
Acq Time : 3 Dec 93 11:58 am
Sample : G9311378*1
Misc : GW-2 / SEACOR.SLO / b#815 / 25mL

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.
26.53	1.44 ug/l	230020	1,2-Dichlorobenzene-d4	27.23

Hit#	of	2	Tentative ID	Ref#	CAS#	Qual
1			Benzoic acid, 2-[(trimethylsilyl)ox	72300	003789-85-3	38
2			Benzeneethanamine, N-[(pentafluorop	74573	055429-85-1	28



004007

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2228D.D

Acq Time : 3 Dec 93 1:54 pm

Sample : G9311378*1MS

Misc : GW-2MS/ SEACOR.SLO / b#815 / 25mL

Quant Time: Dec 6 9:31 1993

REVIEWED & APPROVED
DATE 12/7/93

Operator: TERRI

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M

Title : method 524.2

Last Update : Fri Dec 03 09:20:02 1993

Response via : Multiple Level Calibration

BATCH # 215

DATE 12/4/93

ANALYST TW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.84	53	127203	10.00	ug/l	-0.08
24) Fluorobenzene	12.95	96	1100751	10.00	ug/l	-0.10
43) 1,2-Dichlorobenzene-d4	27.23	150	417033	10.00	ug/l	-0.09
System Monitoring Compounds				%Recovery		
17) 1,2-Dichloroethane-d4	12.23	65	170587	9.34	ug/l	93.41%
32) Toluene-d8	16.75	98	923734	9.71	ug/l	97.14%
45) Bromofluorobenzene	23.49	95	520914	11.40	ug/l	114.00%
Target Compounds				Qvalue		
2) Chloromethane	4.55	50	56923	3.56	ug/l	91
3) Vinyl Chloride	4.73	62	86947	3.45	ug/l	# 42
4) Bromomethane	5.43	94	97788	3.78	ug/l	93
5) Chloroethane	5.54	64	61690	3.24	ug/l	87
6) Trichlorofluoromethane	6.01	101	282384	4.39	ug/l	m 0
7) 1,1-Dichloroethene	7.08	96	108590	3.88	ug/l	83
9) Methylene Chloride	7.91	84	85889	3.53	ug/l	# 45
10) 1,2-Dichloroethene (trans-)	8.48	96	132357	3.90	ug/l	87
11) 1,1-Dichloroethane	9.25	63	258904	3.83	ug/l	99
12) 2,2-Dichloropropane	10.39	77	270282	4.26	ug/l	95
13) 1,2-Dichloroethene (cis-)	10.46	96	130990	3.97	ug/l	68
14) Bromochloromethane	11.12	130	56306	3.62	ug/l	# 45
15) Chloroform	10.77	83	280911	4.06	ug/l	100
16) 1,1-Dichloropropene	11.94	75	248129	3.99	ug/l	97
18) 1,2-Dichloroethane	12.43	62	79042	3.37	ug/l	94
19) 1,1,1-Trichloroethane	11.62	97	305194	4.24	ug/l	100
20) Carbon Tetrachloride	12.21	117	288671	4.28	ug/l	97
21) Benzene	12.54	78	363347	3.76	ug/l	100
22) Trichloroethene	13.84	130	1277593	30.01	ug/l	95
23) 1,2-Dichloropropane	14.21	63	125525	3.62	ug/l	97
25) Dibromomethane	14.94	174	49409	3.56	ug/l	88
26) Bromodichloromethane	14.77	83	195188	3.48	ug/l	97
27) cis-1,3-Dichloropropene	16.09	75	72963	1.69	ug/l	99
28) trans-1,3-Dichloropropene	17.30	75	38809	1.58	ug/l	87
29) 1,3-Dichloropropane	18.31	76	92417	3.45	ug/l	95
30) Dibromochloromethane	18.99	129	92536	3.13	ug/l	95
31) Bromoform	22.90	173	46907	3.22	ug/l	98
33) Toluene	16.94	92	255717	4.00	ug/l	91
34) 1,1,2-Trichloroethane	17.69	97	53888	3.41	ug/l	96
35) Tetrachloroethene	18.54	164	218628	5.79	ug/l	92
36) 1,2-Dibromoethane	19.46	107	71453	3.60	ug/l	97
37) Chlorobenzene	20.47	112	256178	3.67	ug/l	99
38) 1,1,1,2-Tetrachloroethane	20.53	131	120047	3.59	ug/l	99
39) Ethylbenzene	20.58	106	144982	4.05	ug/l	m 73

(#) = qualifier out of range (m) = manual integration
 V2228D.D 524METH.M Mon Dec 06 09:31:34 1993

VOA3

Page 1

004008

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2228D.D
Acq Time : 3 Dec 93 1:54 pm
Sample : G9311378*1MS
Misc : GW-2MS/ SEACOR.SLO / b#815 / 25mL
Quant Time: Dec 6 9:31 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
40) m,p-Xylenes	20.77	106	369482	7.57	ug/l	64
41) o-Xylene	21.88	106	163866	3.93	ug/l	64
42) Styrene	21.98	104	234391	3.56	ug/l	75
44) Isopropylbenzene	22.85	105	579323	4.87	ug/l	93
46) Bromobenzene	24.01	77	268479	4.74	ug/l	90
47) 1,1,2,2-Tetrachloroethane	23.24	83	70342	4.15	ug/l	96
48) 1,2,3-Trichloropropane	23.62	75	42056	3.63	ug/l m	35
49) n-Propylbenzene	23.89	91	752976	4.58	ug/l	96
50) 2-Chlorotoluene	24.34	91	443021	4.10	ug/l m	98
51) 4-Chlorotoluene	24.45	91	429942	4.85	ug/l	93
52) 1,3,5-Trimethylbenzene	24.29	105	427591	4.48	ug/l	94
53) Tert-Butylbenzene	25.17	119	481946	4.71	ug/l	98
54) 1,2,4-Trimethylbenzene	25.25	105	413478	4.37	ug/l	80
55) Sec-Butylbenzene	25.67	105	725977	5.02	ug/l	96
56) 1,3-Dichlorobenzene	26.20	146	231746	4.64	ug/l	95
57) 1,4-Dichlorobenzene	26.45	146	222431	4.53	ug/l	93
58) p-Isopropyltoluene	25.99	119	546882	4.77	ug/l	98
59) 1,2-Dichlorobenzene	27.29	146	174379	4.44	ug/l	96
60) n-Butylbenzene	26.91	91	650662	5.03	ug/l	92
61) 1,2-Dibromo-3-Chloropropan	28.96	157	10897	3.71	ug/l	76
62) 1,2,4-Trichlorobenzene	31.06	180	134676	4.35	ug/l	97
63) Naphthalene	31.80	128	134852	3.72	ug/l	98
64) Hexachlorobutadiene	31.44	225	151843	4.60	ug/l m	65
65) 1,2,3-Trichlorobenzene	32.46	180	102647	4.27	ug/l	96

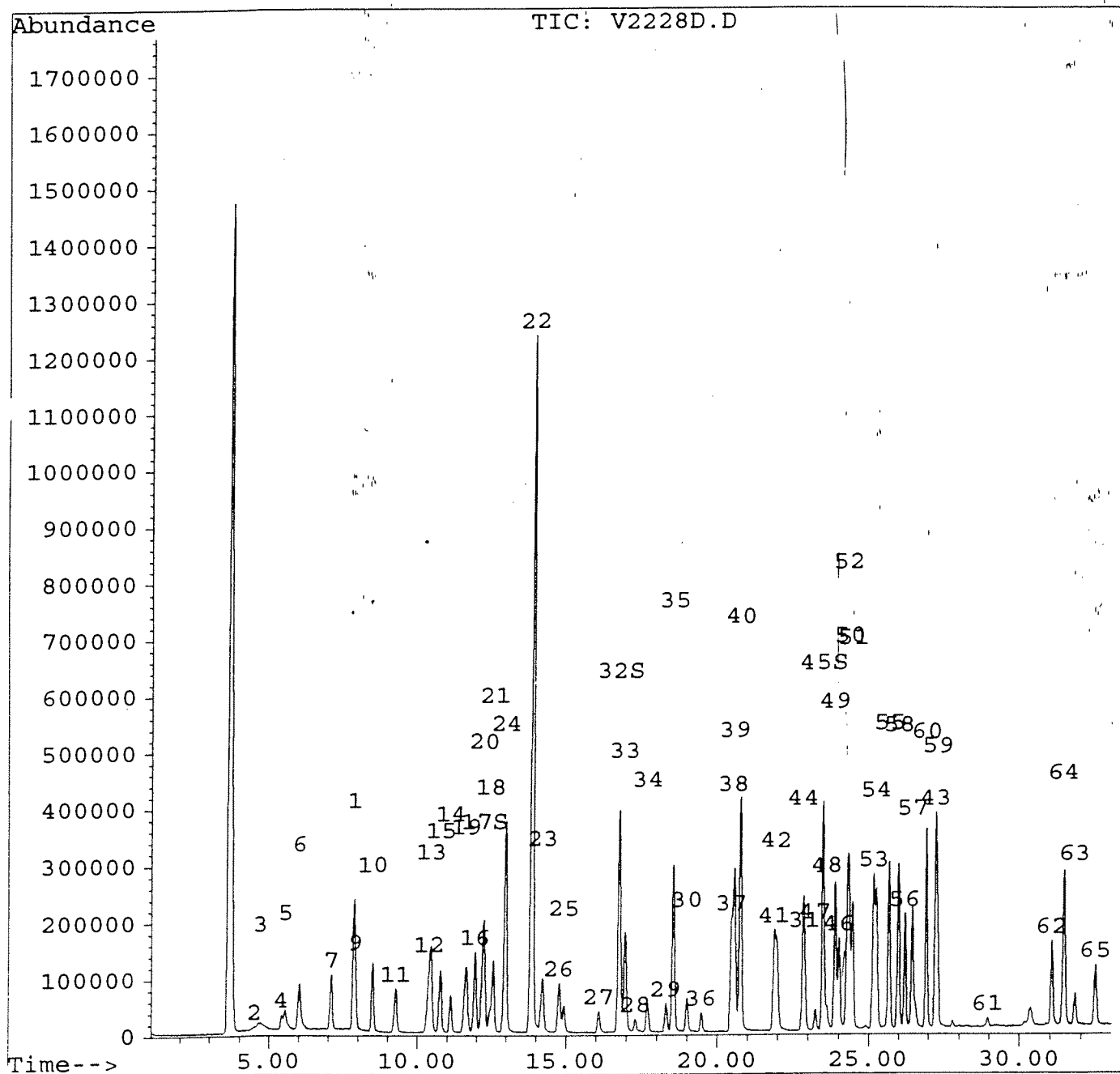
004009

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2228D.D
 Acq Time : 3 Dec 93 1:54 pm
 Sample : G9311378*1MS
 Misc : GW-2MS/ SEACOR.SLO / b#815 / 25mL
 Quant Time: Dec 6, 9:31 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration



004010

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2229D.D
 Acq Time : 3 Dec 93 2:32 pm
 Sample : G9311378*1MS
 Misc : GW-2MS/ SEACOR.SLO / b#815 / 25mL
 Quant Time: Dec 6 9:40 1993

REVIEWED & APPROVED
 BY *[Signature]* DATE *12/7/93*

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

BATCH # *815*
 DATE *12/6/93*
 ANALYST *TD*

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.84	53	139815	10.00	ug/l	-0.08
24) Fluorobenzene	12.96	96	1147677	10.00	ug/l	-0.09
43) 1,2-Dichlorobenzene-d4	27.24	150	460646	10.00	ug/l	-0.08

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.24	65	187400	9.34	ug/l	93.36%
32) Toluene-d8	16.75	98	981565	9.90	ug/l	99.00%
45) Bromofluorobenzene	23.50	95	577339	11.44	ug/l	114.39%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chloromethane	4.56	50	52626	3.00	ug/l	86
3) Vinyl Chloride	4.82	62	92667	3.34	ug/l	98
4) Bromomethane	5.41	94	108887	3.83	ug/l	94
5) Chloroethane	5.54	64	72648	3.47	ug/l	96
6) Trichlorofluoromethane	6.01	101	301452	4.26	ug/l m	0
7) 1,1-Dichloroethene	7.09	96	123360	4.01	ug/l	85
9) Methylene Chloride	7.91	84	101133	3.78	ug/l #	49
10) 1,2-Dichloroethene (trans-)	8.48	96	147628	3.96	ug/l	87
11) 1,1-Dichloroethane	9.25	63	292643	3.94	ug/l	100
12) 2,2-Dichloropropane	10.39	77	299684	4.30	ug/l	95
13) 1,2-Dichloroethene (cis-)	10.45	96	150749	4.15	ug/l	69
14) Bromochloromethane	11.12	130	66401	3.89	ug/l m	85
15) Chloroform	10.77	83	319764	4.21	ug/l	100
16) 1,1-Dichloropropene	11.94	75	271299	3.96	ug/l	98
18) 1,2-Dichloroethane	12.44	62	88832	3.45	ug/l	98
19) 1,1,1-Trichloroethane	11.63	97	343852	4.34	ug/l	99
20) Carbon Tetrachloride	12.21	117	311695	4.20	ug/l	97
21) Benzene	12.55	78	411810	3.87	ug/l	100
22) Trichloroethene	13.84	130	1583965	33.85	ug/l	96
23) 1,2-Dichloropropane	14.21	63	140982	3.70	ug/l	95
25) Dibromomethane	14.93	174	55780	3.86	ug/l	87
26) Bromodichloromethane	14.77	83	223991	3.83	ug/l	97
27) cis-1,3-Dichloropropene	16.09	75	82744	1.83	ug/l	100
28) trans-1,3-Dichloropropene	17.30	75	45660	1.79	ug/l	99
29) 1,3-Dichloropropane	18.30	76	106715	3.82	ug/l	97
30) Dibromochloromethane	19.01	129	105750	3.43	ug/l	97
31) Bromoform	22.90	173	52705	3.47	ug/l	98
33) Toluene	16.95	92	286897	4.31	ug/l	91
34) 1,1,2-Trichloroethane	17.69	97	60430	3.66	ug/l	95
35) Tetrachloroethene	18.54	164	246219	6.25	ug/l	92
36) 1,2-Dibromoethane	19.47	107	77904	3.77	ug/l	97
37) Chlorobenzene	20.48	112	286475	3.94	ug/l	99
38) 1,1,1,2-Tetrachloroethane	20.55	131	136214	3.91	ug/l	98
39) Ethylbenzene	20.59	106	156457	4.19	ug/l m	73

(#) = qualifier out of range (m) = manual integration
 V2229D.D 524METH.M Mon Dec 06 09:41:01 1993

VOA3

004011
 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2229D.D
 Acq Time : 3 Dec 93 2:32 pm
 Sample : G9311378*1MS
 Misc : GW-2MS/ SEACOR.SLO / b#815 / 25mL
 Quant Time: Dec 6 9:40 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

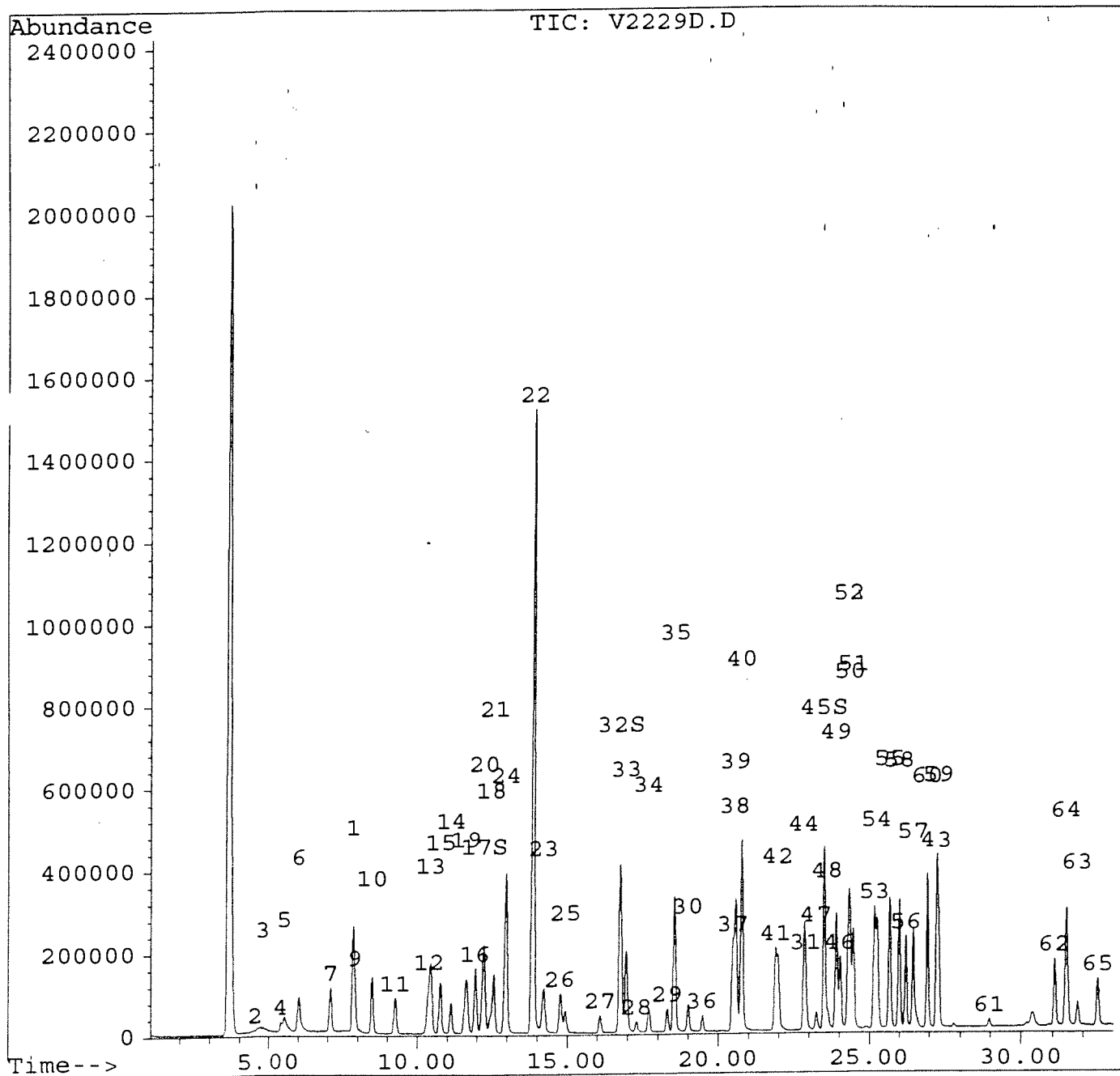
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
40) m,p-Xylenes	20.77	106	409560	8.04	ug/l	61
41) o-Xylene	21.90	106	180593	4.16	ug/l	63
42) Styrene	21.98	104	261969	3.82	ug/l	76
44) Isopropylbenzene	22.85	105	632214	4.82	ug/l	93
46) Bromobenzene	24.02	77	299268	4.78	ug/l	91
47) 1,1,2,2-Tetrachloroethane	23.24	83	79665	4.26	ug/l	96
48) 1,2,3-Trichloropropane	23.62	75	46230	3.61	ug/l m	35
49) n-Propylbenzene	23.89	91	820965	4.52	ug/l	95
50) 2-Chlorotoluene	24.35	91	483563	4.05	ug/l m	97
51) 4-Chlorotoluene	24.46	91	466940	4.77	ug/l	94
52) 1,3,5-Trimethylbenzene	24.29	105	467344	4.43	ug/l	95
53) Tert-Butylbenzene	25.17	119	525042	4.65	ug/l	97
54) 1,2,4-Trimethylbenzene	25.25	105	456637	4.37	ug/l	81
55) Sec-Butylbenzene	25.67	105	779878	4.89	ug/l	96
56) 1,3-Dichlorobenzene	26.22	146	256638	4.66	ug/l	95
57) 1,4-Dichlorobenzene	26.45	146	247103	4.56	ug/l	91
58) p-Isopropyltoluene	25.99	119	589884	4.66	ug/l	100
59) 1,2-Dichlorobenzene	27.30	146	191655	4.41	ug/l	95
60) n-Butylbenzene	26.93	91	701064	4.91	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	28.97	157	12685	3.91	ug/l #	73
62) 1,2,4-Trichlorobenzene	31.07	180	148163	4.33	ug/l	97
63) Naphthalene	31.81	128	143429	3.58	ug/l	98
64) Hexachlorobutadiene	31.45	225	177466	4.87	ug/l	93
65) 1,2,3-Trichlorobenzene	32.47	180	113535	4.28	ug/l	96

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2229D.D
 Acq Time : 3 Dec 93 2:32 pm
 Sample : G9311378*1MS
 Misc : GW-2MS/ SEACOR.SLO / b#815 / 25mL
 Quant Time: Dec 6 9:40 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration



004013

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2230D.D
 Acq Time : 3 Dec 93 3:11 pm
 Sample : G9311378*4
 Misc : GW-5 / SEACOR.SLO / b#815 / 25mL
 Quant Time: Dec 3 15:44 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.85	53	119936	10.00	ug/l	-0.07
24) Fluorobenzene	12.96	96	1037255	10.00	ug/l	-0.09
43) 1,2-Dichlorobenzene-d4	27.23	150	374034	10.00	ug/l	-0.09
System Monitoring Compounds				%Recovery		
17) 1,2-Dichloroethane-d4	12.24	65	161986	9.41	ug/l	94.07%
32) Toluene-d8	16.76	98	887931	9.91	ug/l	99.09%
45) Bromofluorobenzene	23.50	95	501983	12.25	ug/l	122.49%
Target Compounds				Qvalue		
9) Methylene Chloride	7.90	84	5070	0.22 ug/l	#	1
13) 1,2-Dichloroethene (cis-)	10.45	96	19483	0.63 ug/l	0.6	92
15) Chloroform	10.78	83	24174	0.37 ug/l	0.4	98
22) Trichloroethene	13.85	130	31152	0.78 ug/l	0.8	91
35) Tetrachloroethene	18.55	164	34586	0.97 ug/l	1.0	94
61) 1,2-Dibromo-3-Chloropropan	28.99	157	837	0.32 ug/l	#	60
63) Naphthalene	31.81	128	14763	0.45 ug/l	0.5	97
65) 1,2,3-Trichlorobenzene	32.47	180	5444	0.25 ug/l	0.3	94

BATCH # 815
 BATCH # 12/3/93
 DATE 12/3/93
 ANALYST 12

REVIEWED & APPROVED
 BY 12 DATE 12/3/93

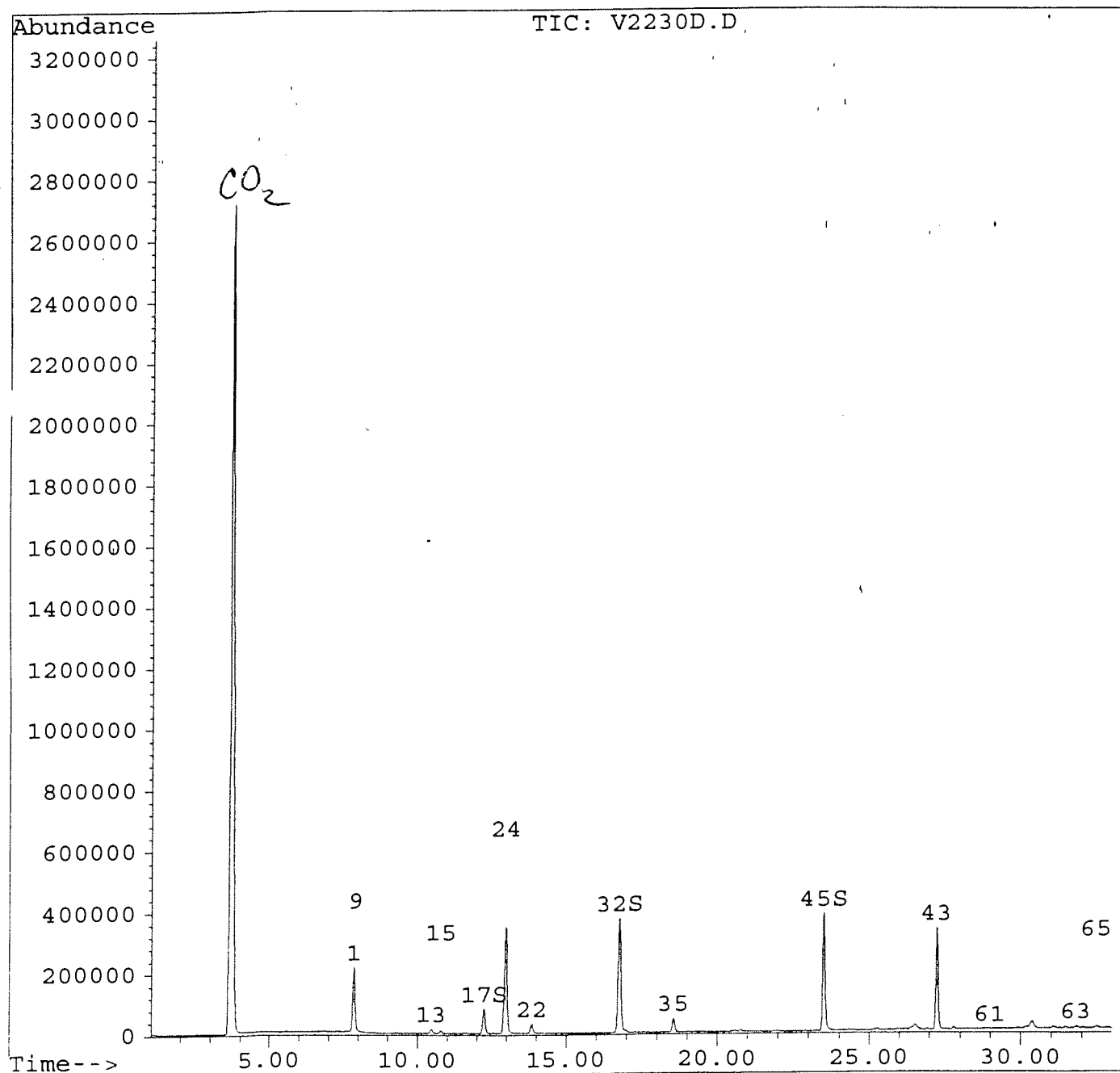
004014

Quantitation Report

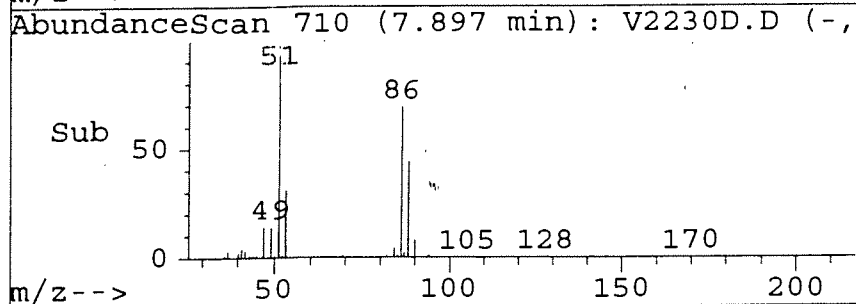
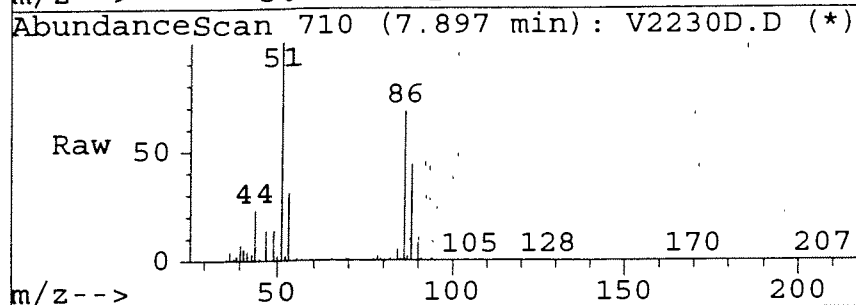
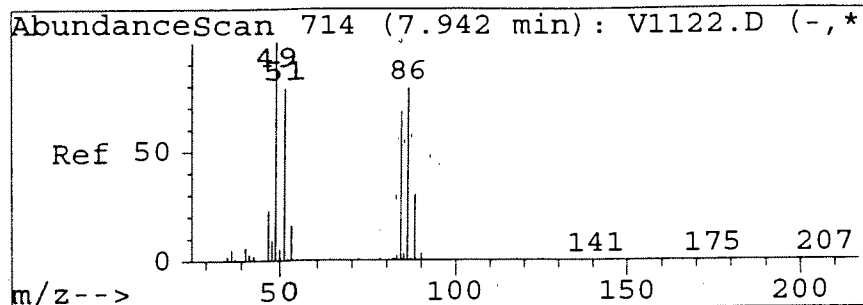
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Acq Time : 3 Dec 93 3:11 pm
Sample : G9311378*4
Misc : GW-5 / SEACOR.SLO / b#815 / 25mL
Quant Time: Dec 3 15:44 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

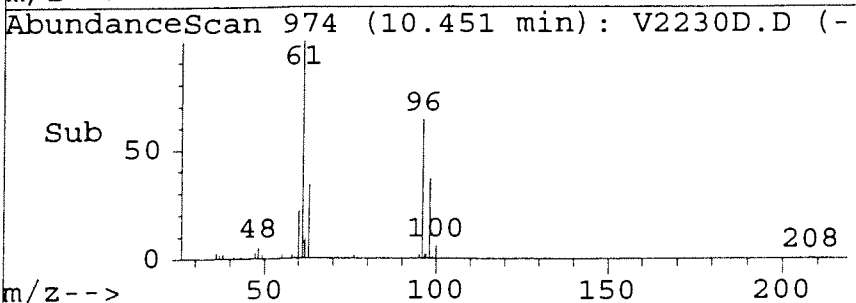
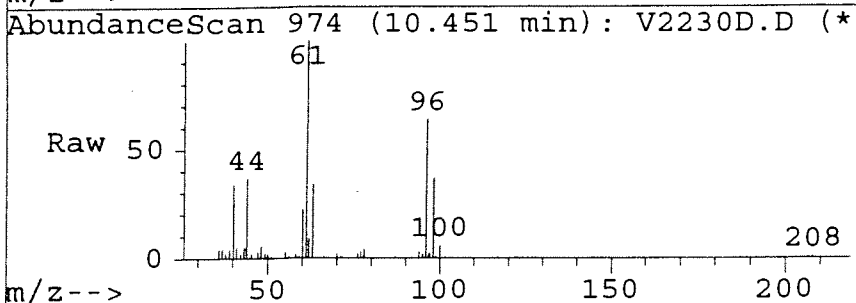
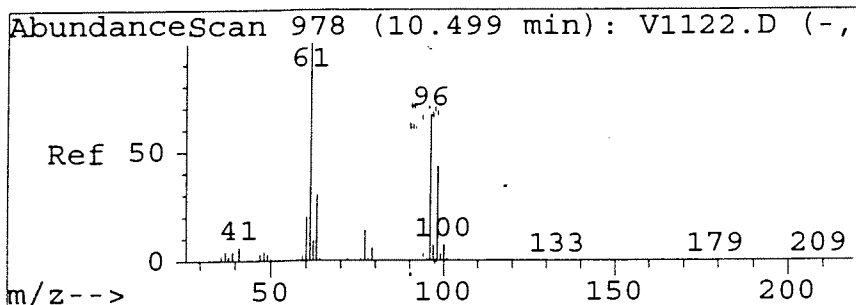
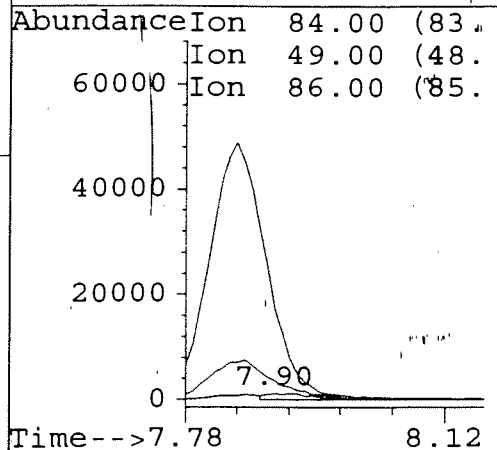


004015



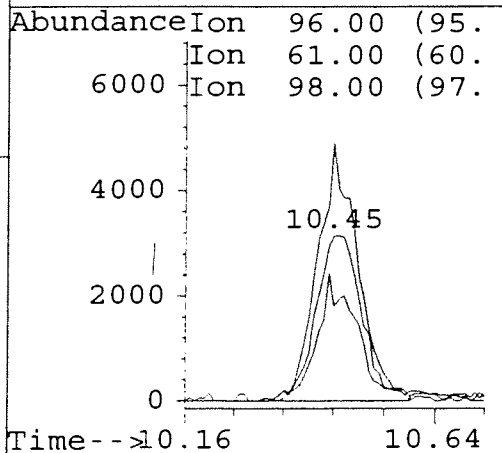
#9
Methylene Chloride
Concen: 0.22 ug/l
RT: 7.90 min Scan# 710
Delta R.T. -0.09 min
Lab File: V2230D.D
Acq: 3 Dec 93 3:11 pm

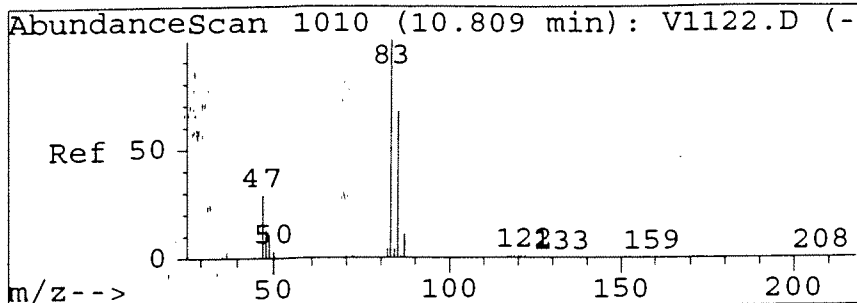
Tgt Ion:84	Resp:	5070
Ion Ratio	Lower	Upper
84	100	
49	0.0	86.0 186.0#
86	0.0	12.0 112.0#
0	0.0	0.0 0.0



#13
1,2-Dichloroethene (cis-)
Concen: 0.63 ug/l
RT: 10.45 min Scan# 974
Delta R.T. -0.10 min
Lab File: V2230D.D
Acq: 3 Dec 93 3:11 pm

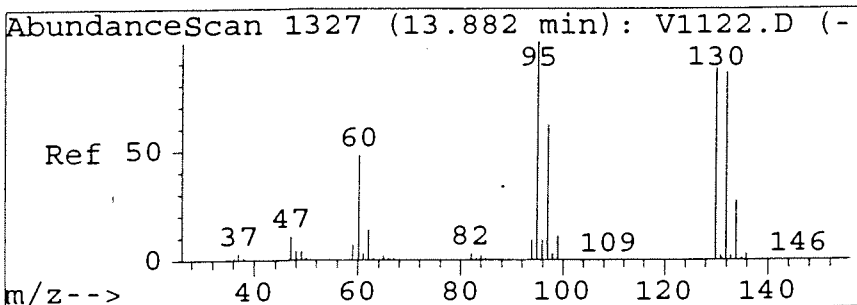
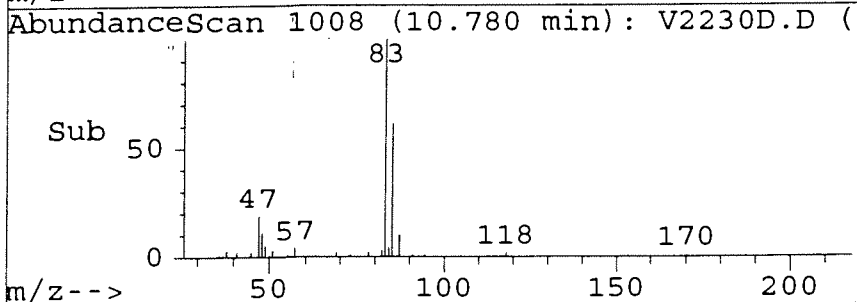
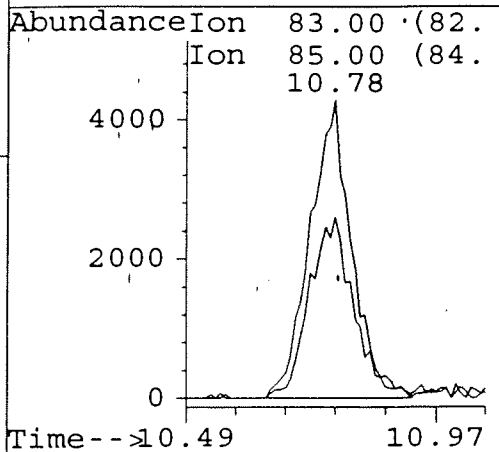
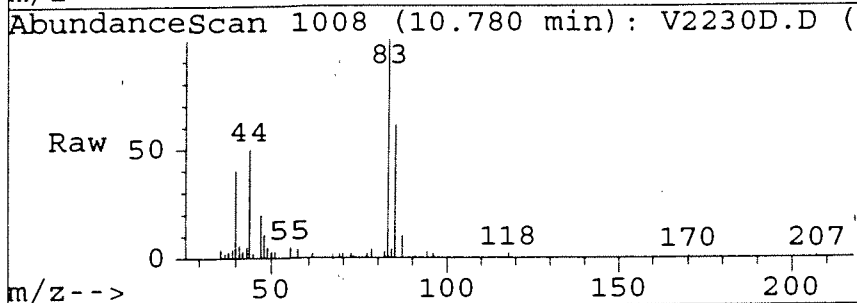
Tgt Ion:96	Resp:	19483
Ion Ratio	Lower	Upper
96	100	
61	136.0	61.5 184.5
98	65.5	32.5 97.5
0	0.0	0.0 0.0





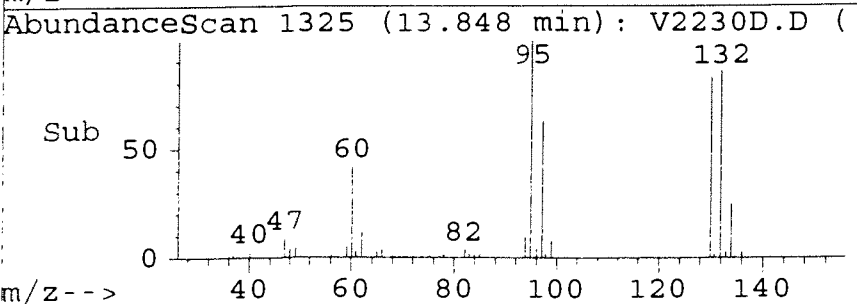
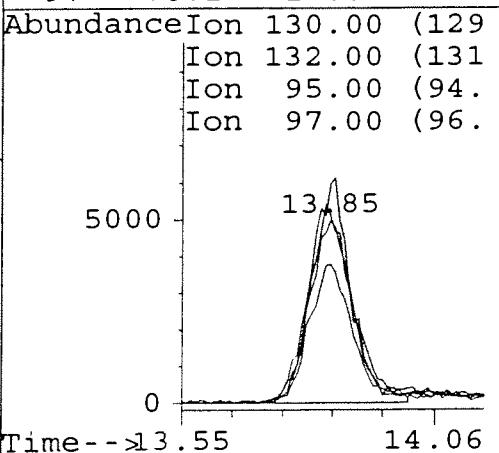
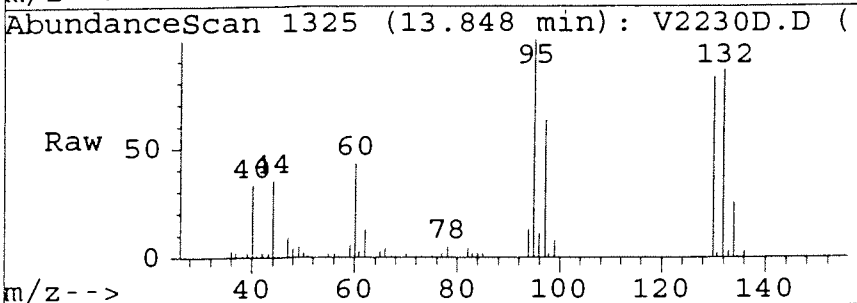
#15
Chloroform
Concen: 0.37 ug/l
RT: 10.78 min Scan# 1008
Delta R.T. -0.08 min
Lab File: V2230D.D
Acq: 3 Dec 93 3:11 pm

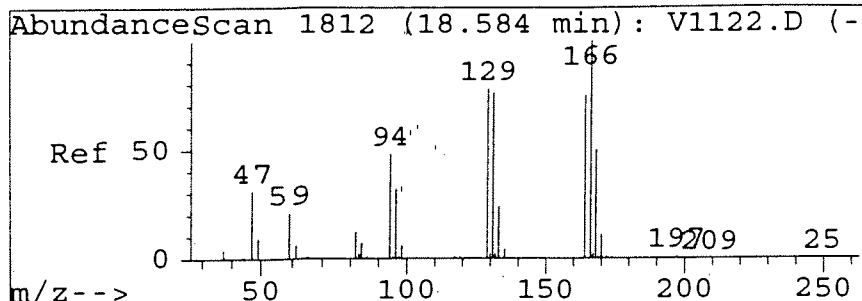
Tgt Ion:83	Resp:	24174
Ion Ratio	Lower	Upper
83 100		
85 64.1	15.6	115.6
0 0.0	0.0	0.0
0 0.0	0.0	0.0



#22
Trichloroethene
Concen: 0.78 ug/l
RT: 13.85 min Scan# 1325
Delta R.T. -0.09 min
Lab File: V2230D.D
Acq: 3 Dec 93 3:11 pm

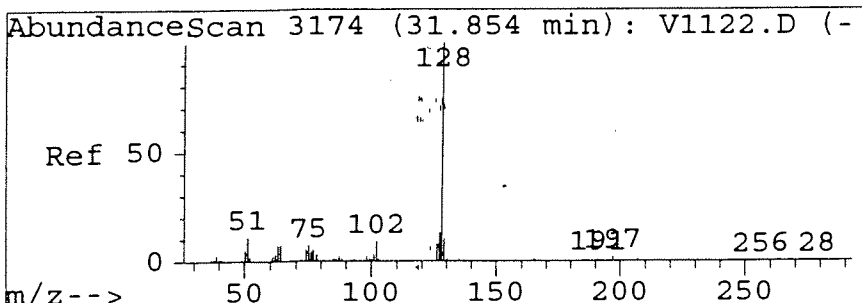
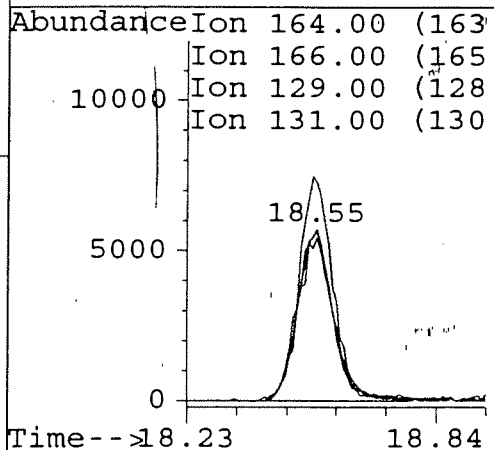
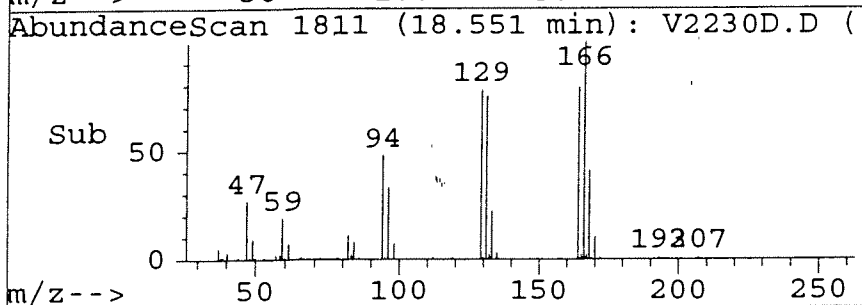
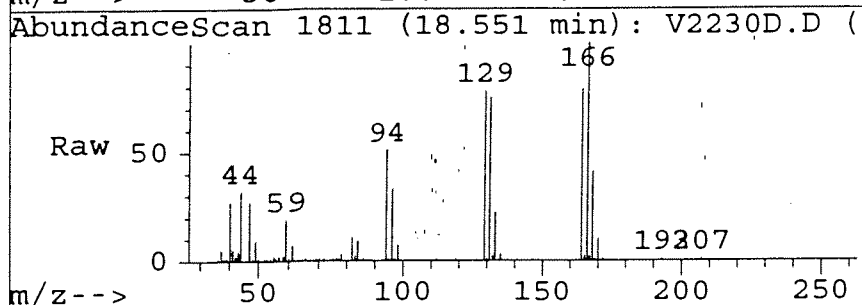
Tgt Ion:130	Resp:	31152
Ion Ratio	Lower	Upper
130 100		
132 101.7	48.4	148.4
95 123.6	59.0	159.0
97 76.1	17.0	117.0





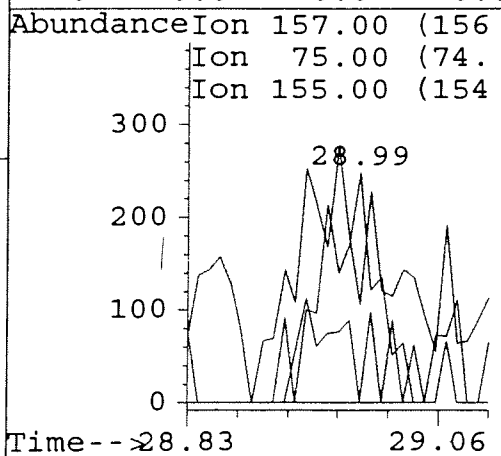
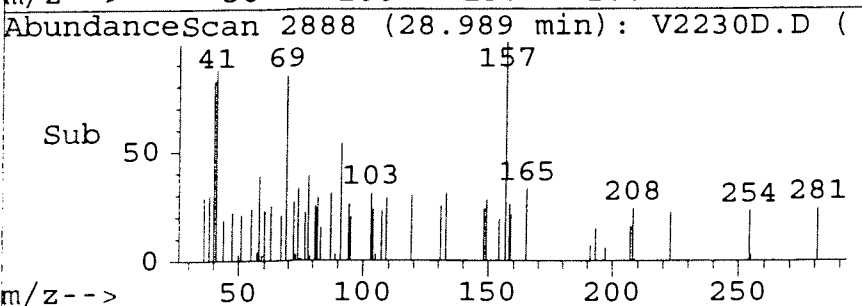
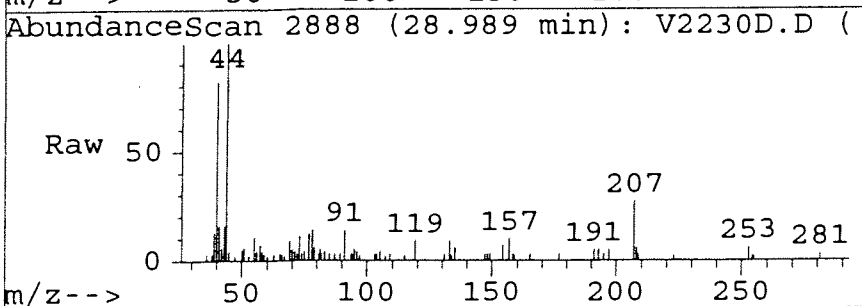
#35
Tetrachloroethene
Concen: 0.97 ug/l
RT: 18.55 min Scan# 1811
Delta R.T. -0.09 min
Lab File: V2230D.D
Acq: 3 Dec 93 3:11 pm

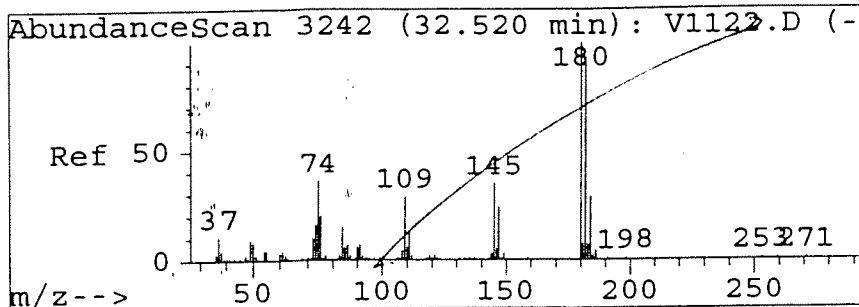
Tgt Ion:	164	Resp:	34586
Ion Ratio	Lower	Upper	
164	100		
166	126.6	84.0	184.0
129	96.4	40.0	140.0
131	93.5	40.0	140.0



#61
1,2-Dibromo-3-Chloropropane
Concen: 0.32 ug/l
RT: 28.99 min Scan# 2888
Delta R.T. -0.06 min
Lab File: V2230D.D
Acq: 3 Dec 93 3:11 pm

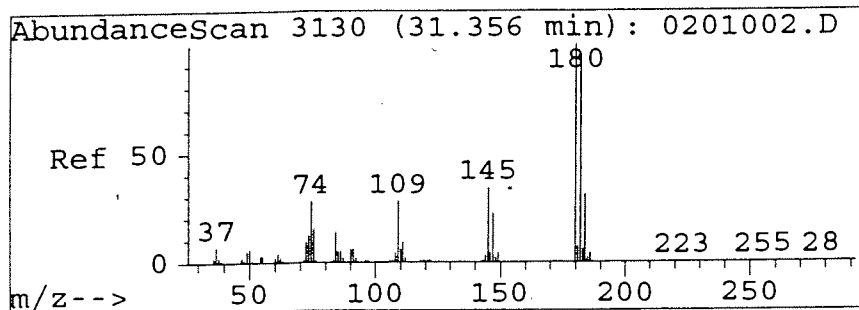
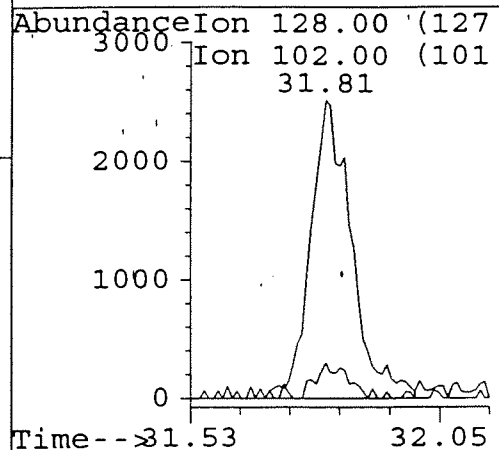
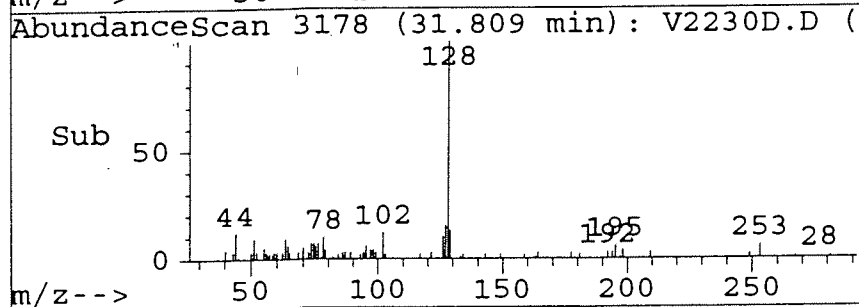
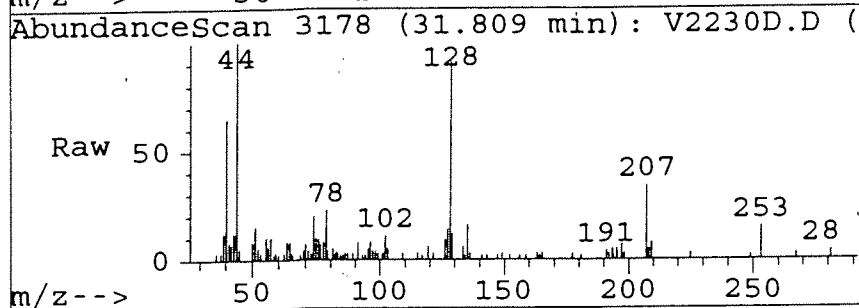
Tgt Ion:	157	Resp:	837
Ion Ratio	Lower	Upper	
157	100		
75	110.4	40.0	120.0
155	32.7	35.0	105.0#
0	0.0	0.0	0.0





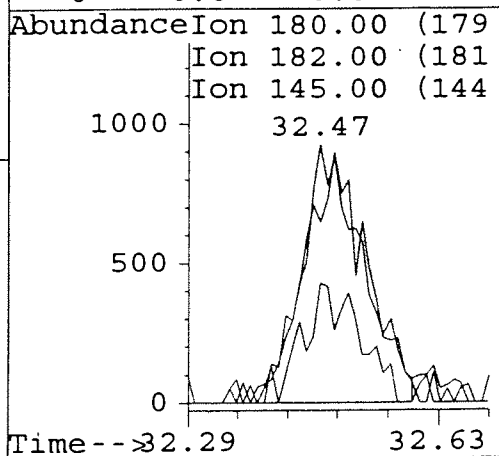
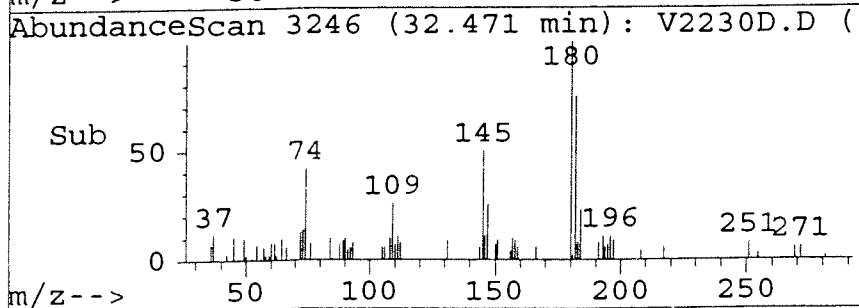
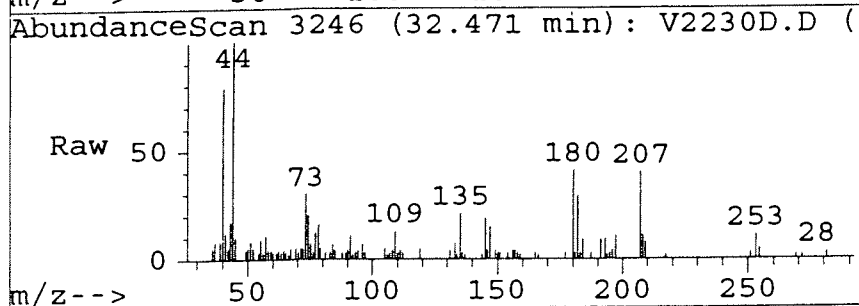
#63
Naphthalene
Concen: 0.45 ug/l
RT: 31.81 min Scan# 3178
Delta R.T. -0.10 min
Lab File: V2230D.D
Acq: 3 Dec 93 3:11 pm

Tgt Ion:128	Resp:	14763
Ion Ratio	Lower	Upper
128 100		
102 9.0	2.5	17.5
0 0.0	0.0	0.0
0 0.0	0.0	0.0



#65
1,2,3-Trichlorobenzene
Concen: 0.25 ug/l
RT: 32.47 min Scan# 3246
Delta R.T. -0.13 min
Lab File: V2230D.D
Acq: 3 Dec 93 3:11 pm

Tgt Ion:180	Resp:	5444
Ion Ratio	Lower	Upper
180 100		
182 99.1	49.0	147.0
145 22.6	17.0	51.0
0 0.0	0.0	0.0



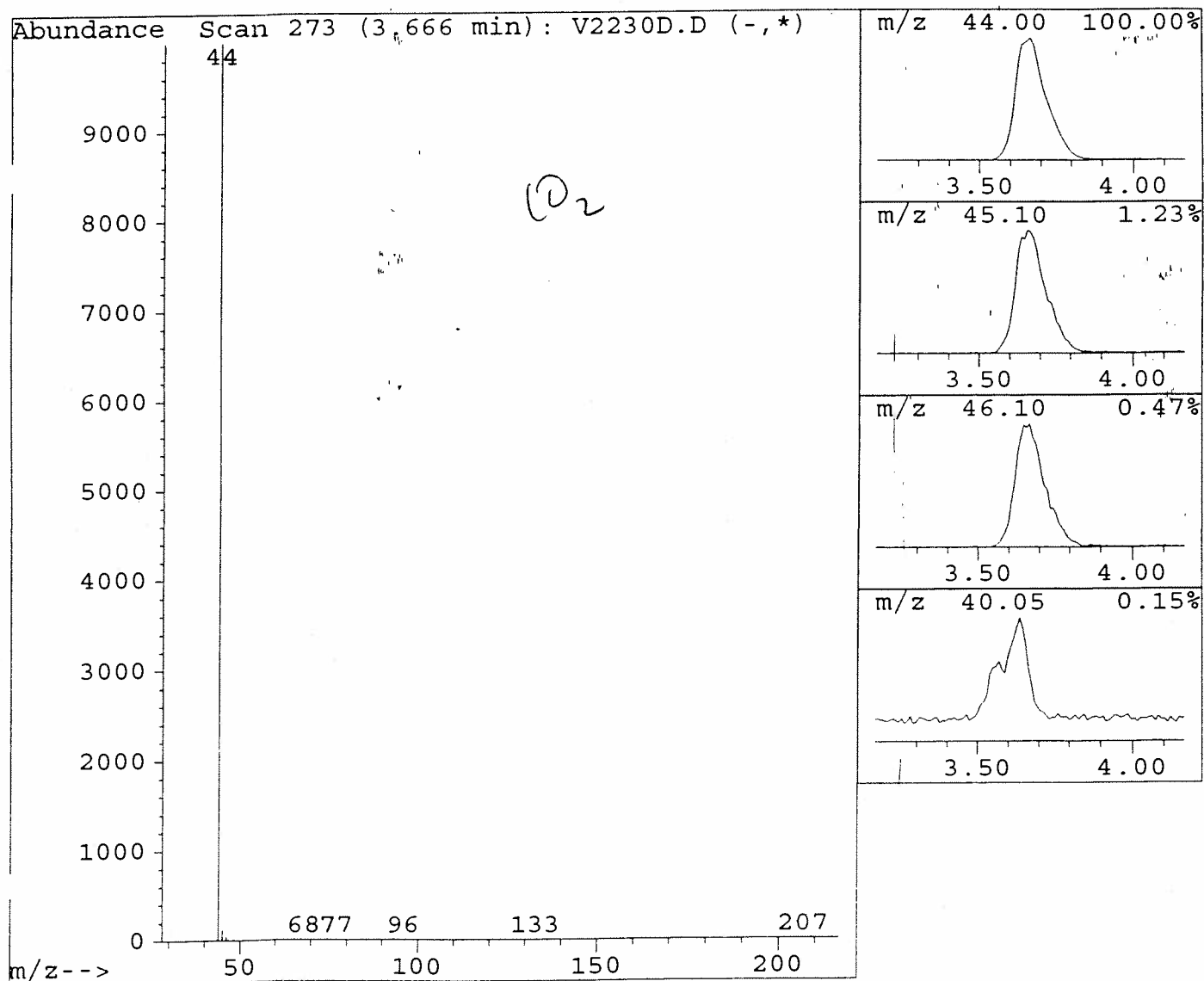
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2230D.D
Acq Time : 3 Dec 93 3:11 pm
Sample : G9311378*4
Misc : GW-5 / SEACOR.SLO / b#815 / 25mL

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD		R.T.
3.67	173.58 ug/l	19170017	Methylene Chloride-d2		7.85
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 Unknown			0 000000-00-0		0



Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2231D
 Acq Time : 3 Dec 93 3:49 pm
 Sample : LAB CONTOL SAMPLE
 Misc : LCS815 / SEACOR.SLO / b#815 / 25mL
 Quant Time: Dec 6 10:26 1993

REVIEWED & APPROVED
 BY [Signature] DATE 12/8/93

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

BATCH # 85
 DATE 12/6/93
 ANALYST [Signature]

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.86	53	141818	10.00	ug/l	-0.06
24) Fluorobenzene	12.96	96	1250793	10.00	ug/l	-0.09
43) 1,2-Dichlorobenzene-d4	27.22	150	487588	10.00	ug/l	-0.10

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.24	65	192437	9.45	ug/l	94.51%
32) Toluene-d8	16.75	98	1070082	9.90	ug/l	99.03%
45) Bromofluorobenzene	23.49	95	610435	11.43	ug/l	114.26%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chloromethane	4.52	50	51570	2.90	ug/l	85
3) Vinyl Chloride	4.81	62	87476	3.11	ug/l	98
4) Bromomethane	5.43	94	102547	3.55	ug/l	95
5) Chloroethane	5.55	64	68060	3.20	ug/l	94
6) Trichlorofluoromethane	6.02	101	292052	4.07	ug/l m	0
7) 1,1-Dichloroethene	7.08	96	111139	3.57	ug/l	84
9) Methylene Chloride	7.92	84	90565	3.34	ug/l #	45
10) 1,2-Dichloroethene (trans-)	8.49	96	137731	3.64	ug/l	87
11) 1,1-Dichloroethane	9.26	63	267036	3.54	ug/l	100
12) 2,2-Dichloropropane	10.38	77	277559	3.92	ug/l	96
13) 1,2-Dichloroethene (cis-)	10.45	96	130430	3.54	ug/l	67
14) Bromochloromethane	11.13	130	62278	3.59	ug/l #	47
15) Chloroform	10.77	83	278848	3.62	ug/l	99
16) 1,1-Dichloropropene	11.94	75	253741	3.66	ug/l	97
18) 1,2-Dichloroethane	12.44	62	84536	3.23	ug/l	97
19) 1,1,1-Trichloroethane	11.64	97	293896	3.66	ug/l	99
20) Carbon Tetrachloride	12.21	117	278022	3.69	ug/l	97
21) Benzene	12.56	78	380478	3.53	ug/l	100
22) Trichloroethene	13.84	130	171848	3.62	ug/l	95
23) 1,2-Dichloropropane	14.22	63	135470	3.51	ug/l	99
25) Dibromomethane	14.94	174	54273	3.44	ug/l	88
26) Bromodichloromethane	14.79	83	207425	3.25	ug/l	98
27) cis-1,3-Dichloropropene	16.10	75	78863	1.60	ug/l	98
28) trans-1,3-Dichloropropene	17.30	75	41949	1.51	ug/l	97
29) 1,3-Dichloropropane	18.31	76	98508	3.23	ug/l	92
30) Dibromochloromethane	19.00	129	100383	2.99	ug/l	96
31) Bromoform	22.92	173	49586	3.00	ug/l	99
33) Toluene	16.96	92	259979	3.58	ug/l	90
34) 1,1,2-Trichloroethane	17.71	97	58326	3.25	ug/l	96
35) Tetrachloroethene	18.56	164	166368	3.87	ug/l	94
36) 1,2-Dibromoethane	19.48	107	77215	3.43	ug/l	97
37) Chlorobenzene	20.47	112	270311	3.41	ug/l	99
38) 1,1,1,2-Tetrachloroethane	20.54	131	128185	3.37	ug/l	98
39) Ethylbenzene	20.59	106	145553	3.58	ug/l m	76

(#) = qualifier out of range (m) = manual integration
 V2231D.D 524METH.M Mon Dec 06 10:27:02 1993

VOA3

004021
 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2231D.D
 Acq Time : 3 Dec 93 3:49 pm
 Sample : LAB CONTOL SAMPLE
 Misc : LCS815 / SEACOR.SLO / b#815 / 25mL
 Quant Time: Dec 6 10:26 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

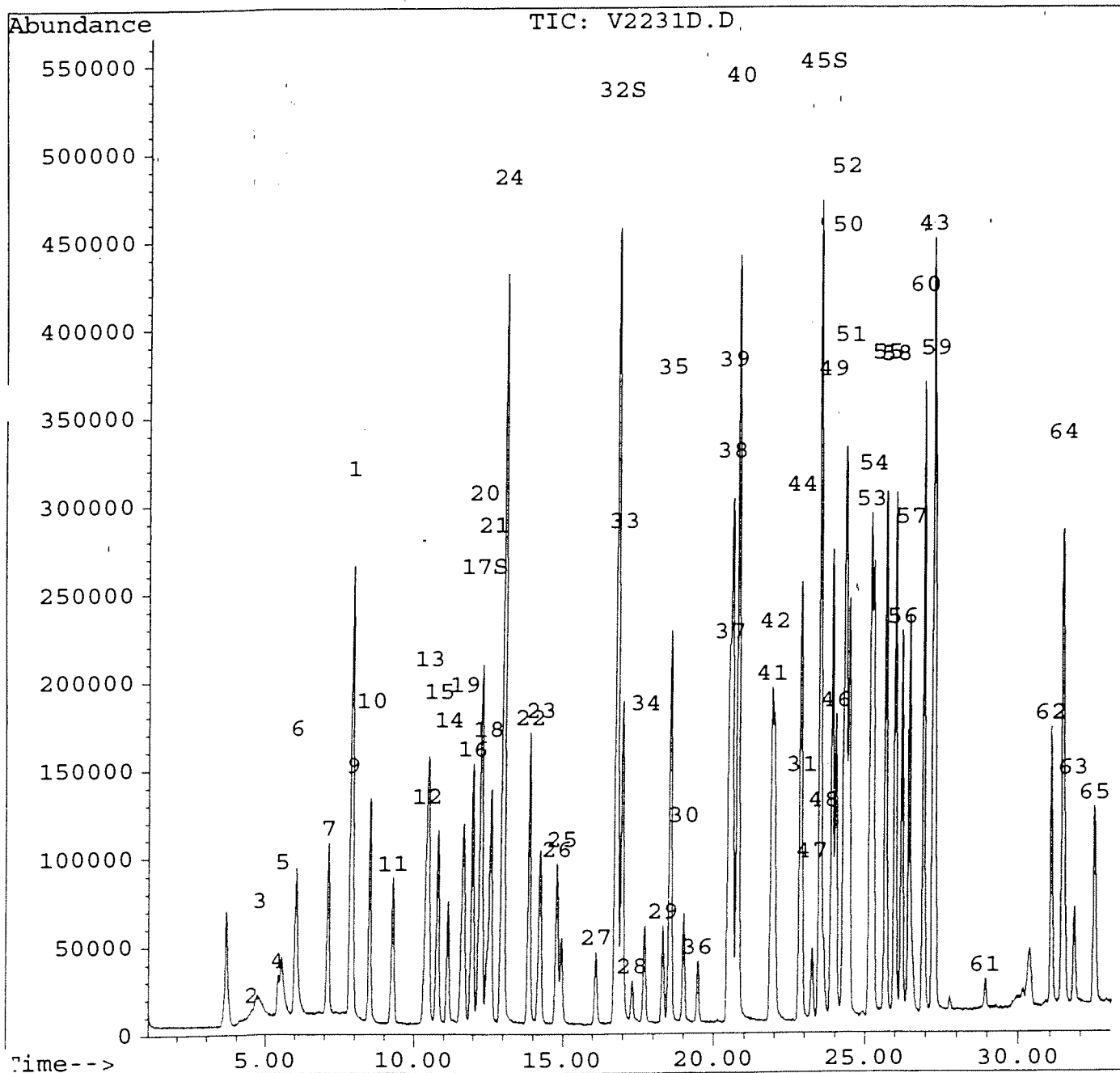
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
40) m,p-Xylenes	20.77	106	386242	6.96	ug/l	65
41) o-Xylene	21.90	106	171579	3.63	ug/l	66
42) Styrene	21.99	104	252406	3.38	ug/l	77
44) Isopropylbenzene	22.86	105	596484	4.29	ug/l	92
46) Bromobenzene	24.02	77	287868	4.35	ug/l	90
47) 1,1,2,2-Tetrachloroethane	23.25	83	75767	3.82	ug/l	96
48) 1,2,3-Trichloropropane	23.62	75	43375	3.20	ug/l	98
49) n-Propylbenzene	23.90	91	776894	4.04	ug/l	95
50) 2-Chlorotoluene	24.34	91	480400	3.80	ug/l m	99
51) 4-Chlorotoluene	24.45	91	466529	4.50	ug/l	92
52) 1,3,5-Trimethylbenzene	24.29	105	437749	3.92	ug/l	95
53) Tert-Butylbenzene	25.16	119	494469	4.14	ug/l	96
54) 1,2,4-Trimethylbenzene	25.26	105	426811	3.86	ug/l	82
55) Sec-Butylbenzene	25.66	105	743979	4.40	ug/l	96
56) 1,3-Dichlorobenzene	26.20	146	246054	4.22	ug/l	95
57) 1,4-Dichlorobenzene	26.44	146	238092	4.15	ug/l	92
58) p-Isopropyltoluene	25.98	119	553723	4.13	ug/l	98
59) 1,2-Dichlorobenzene	27.28	146	187133	4.07	ug/l	96
60) n-Butylbenzene	26.91	91	665820	4.40	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	28.95	157	11834	3.44	ug/l	73
62) 1,2,4-Trichlorobenzene	31.04	180	143717	3.97	ug/l	97
63) Naphthalene	31.78	128	137925	3.25	ug/l	97
64) Hexachlorobutadiene	31.43	225	167420	4.34	ug/l	94
65) 1,2,3-Trichlorobenzene	32.46	180	110160	3.92	ug/l	96

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2231D.D
 Acq Time : 3 Dec 93 3:49 pm
 Sample : LAB CONTOL SAMPLE
 Misc : LCS815 / SEACOR.SLO / b#815 / 25mL
 Quant Time: Dec 6 10:26 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration



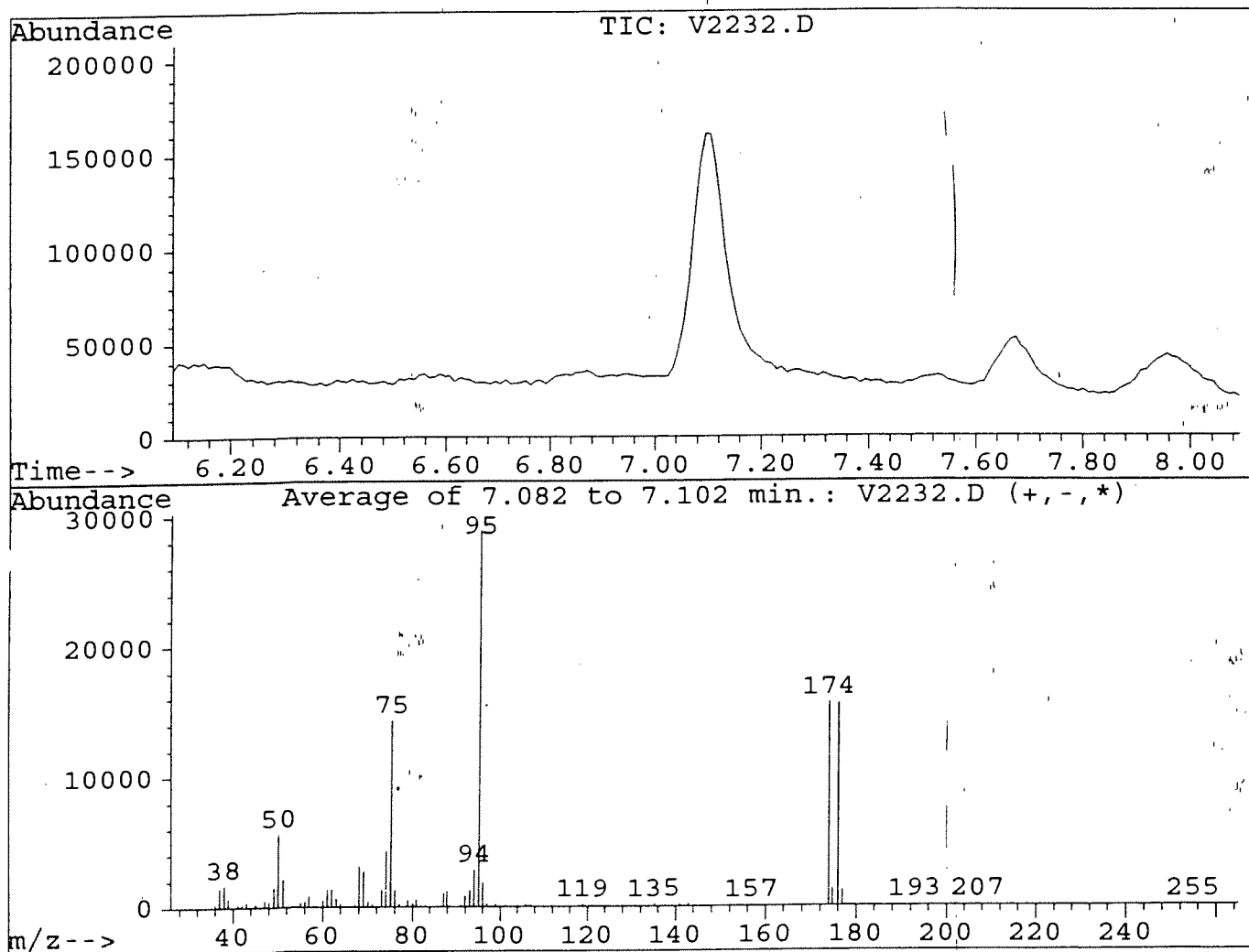
004023

BFB

Data File : C:\HPCHEM\1\DATA\DEC6\V2232.D
Acq Time : 6 Dec 93 8:48 am
Sample : 25 NG BFB / 5ML
Misc : LOT#VO9308016

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
Title :



Peak Apex is scan: 233

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.3	5569	PASS
75	95	30	60	49.5	14294	PASS
95	95	100	100	100.0	28858	PASS
96	95	5	9	6.3	1815	PASS
173	174	0	2	0.0	4	PASS
174	95	50	100	54.0	15591	PASS
175	174	5	9	8.0	1245	PASS
176	174	95	101	99.6	15533	PASS
177	176	5	9	7.6	1175	PASS

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2233.D
 Acq Time : 6 Dec 93 9:17 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML
 Quant Time: Dec 6 9:55 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

BATCH # 816
 DATE 12/6/93
 ANALYST TJ

REVIEWED & APPROVED
 By AMS Date 12/14/93

Internal Standards	R.T.	QIon	Response	Conc Units	Dev (Min)
1) Methylene Chloride-d2	7.83	53	130352	10.00 ug/l	-0.10
24) Fluorobenzene	12.93	96	1150094	10.00 ug/l	-0.12
43) 1,2-Dichlorobenzene-d4	27.23	150	503539	10.00 ug/l	-0.09

System Monitoring Compounds	R.T.	QIon	Response	Conc Units	%Recovery
17) 1,2-Dichloroethane-d4	12.21	65	176378	9.42 ug/l	94.25%
32) Toluene-d8	16.74	98	971740	9.78 ug/l	97.80%
45) Bromofluorobenzene	23.48	95	558821	10.13 ug/l	101.29%

Target Compounds	R.T.	QIon	Response	Conc Units	Qvalue
2) Chloromethane	4.51	50	117888	7.20 ug/l m	92
3) Vinyl Chloride	4.71	62	281983	10.91 ug/l	99
4) Bromomethane	5.40	94	191597	7.22 ug/l	95
5) Chloroethane	5.52	64	210210	10.76 ug/l	95
6) Trichlorofluoromethane	5.99	101	621804	9.43 ug/l m	0
7) 1,1-Dichloroethene	7.06	96	336865	11.76 ug/l	83
8) Freon 113	6.80	101	640250	11.87 ug/l	91
9) Methylene Chloride	7.88	84	209266	8.39 ug/l #	59
10) 1,2-Dichloroethene (trans-	8.47	96	389857	11.22 ug/l	87
11) 1,1-Dichloroethane	9.24	63	642971	9.28 ug/l	100
12) 2,2-Dichloropropane	10.36	77	736873	11.33 ug/l	96
13) 1,2-Dichloroethene (cis-)	10.43	96	319176	9.44 ug/l	68
14) Bromochloromethane	11.10	130	166173	10.43 ug/l #	51
15) Chloroform	10.75	83	688907	9.72 ug/l	99
16) 1,1-Dichloropropene	11.92	75	689709	10.81 ug/l	98
18) 1,2-Dichloroethane	12.41	62	219620	9.14 ug/l	96
19) 1,1,1-Trichloroethane	11.61	97	730222	9.89 ug/l	99
20) Carbon Tetrachloride	12.19	117	778099	11.25 ug/l	97
21) Benzene	12.53	78	1066457	10.76 ug/l	100
22) Trichloroethene	13.82	130	476834	10.93 ug/l	94
23) 1,2-Dichloropropane	14.18	63	337997	9.52 ug/l	100
25) Dibromomethane	14.91	174	141236	9.75 ug/l	88
26) Bromodichloromethane	14.75	83	559765	9.55 ug/l	97
27) cis-1,3-Dichloropropene	16.07	75	413417	9.14 ug/l	99
28) trans-1,3-Dichloropropene	17.27	75	228108	8.91 ug/l	98
29) 1,3-Dichloropropane	18.28	76	266973	9.53 ug/l	96
30) Dibromochloromethane	18.98	129	283336	9.17 ug/l	97
31) Bromoform	22.89	173	145073	9.54 ug/l	98
33) Toluene	16.93	92	694578	10.41 ug/l	92
34) 1,1,2-Trichloroethane	17.68	97	153710	9.30 ug/l	99
35) Tetrachloroethene	18.52	164	431312	10.92 ug/l	93
36) 1,2-Dibromoethane	19.45	107	205209	9.90 ug/l	100
37) Chlorobenzene	20.45	112	685643	9.41 ug/l	100
38) 1,1,1,2-Tetrachloroethane	20.52	131	352564	10.09 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2233.D
 Acq Time : 6 Dec 93 9:17 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML
 Quant Time: Dec 6 9:55 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

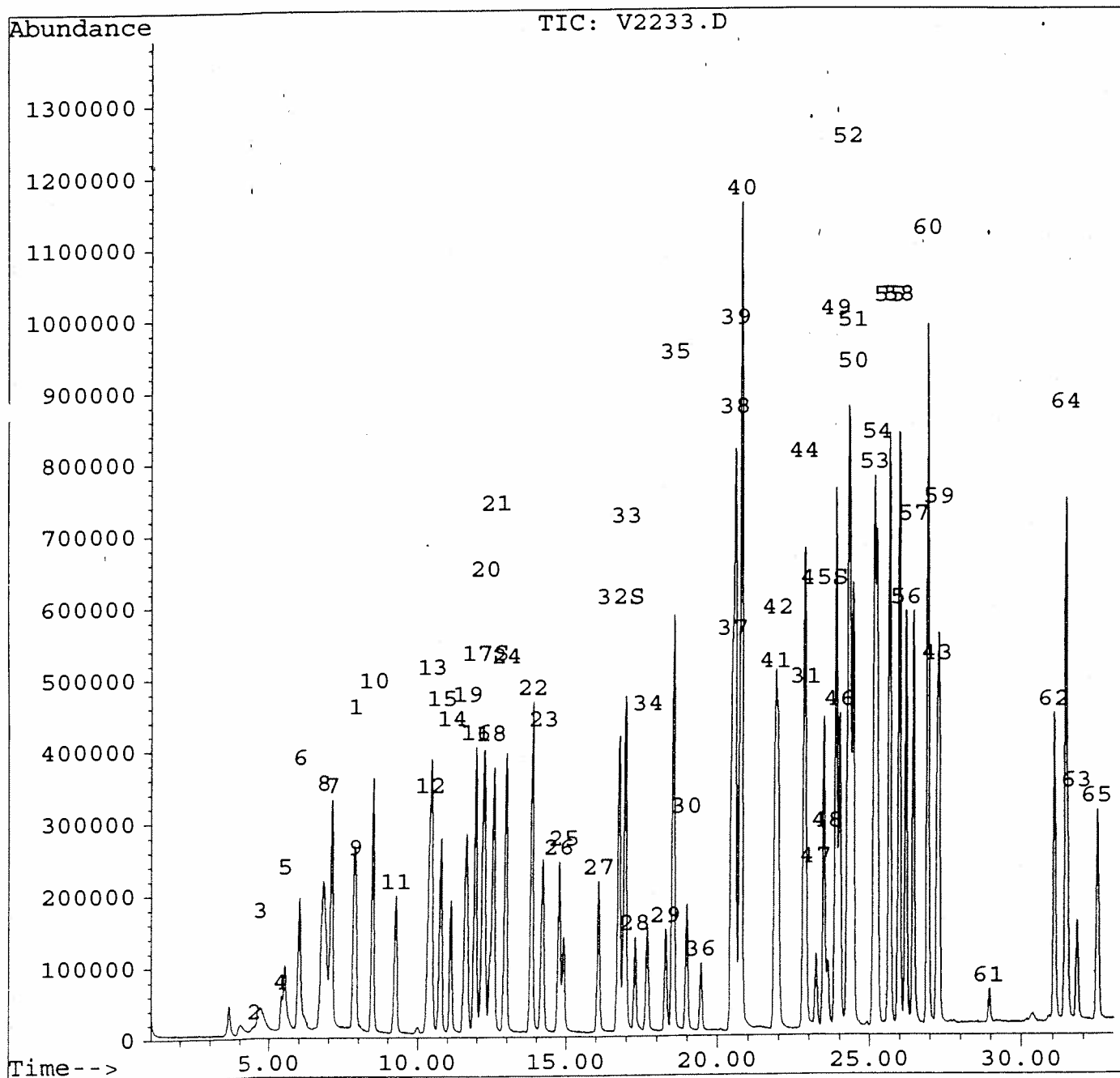
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Ethylbenzene	20.57	106	397348	10.62	ug/l m	74
40) m,p-Xylenes	20.75	106	1029831	20.18	ug/l	64
41) o-Xylene	21.87	106	448455	10.31	ug/l	65
42) Styrene	21.97	104	655830	9.54	ug/l	77
44) Isopropylbenzene	22.84	105	1615083	11.26	ug/l	93
46) Bromobenzene	24.01	77	726658	10.63	ug/l	91
47) 1,1,2,2-Tetrachloroethane	23.23	83	195700	9.57	ug/l	97
48) 1,2,3-Trichloropropane	23.62	75	125877	9.00	ug/l	91
49) n-Propylbenzene	23.88	91	2190107	11.03	ug/l	95
50) 2-Chlorotoluene	24.44	91	1166818	8.94	ug/l	97
51) 4-Chlorotoluene	24.44	91	1166818	10.91	ug/l	93
52) 1,3,5-Trimethylbenzene	24.28	105	1242944	10.78	ug/l	94
53) Tert-Butylbenzene	25.15	119	1350782	10.94	ug/l	96
54) 1,2,4-Trimethylbenzene	25.25	105	1139001	9.98	ug/l	81
55) Sec-Butylbenzene	25.66	105	2051481	11.76	ug/l	96
56) 1,3-Dichlorobenzene	26.19	146	652978	10.84	ug/l	95
57) 1,4-Dichlorobenzene	26.44	146	631094	10.65	ug/l	92
58) p-Isopropyltoluene	25.98	119	1568894	11.34	ug/l	99
59) 1,2-Dichlorobenzene	27.28	146	491920	10.37	ug/l	97
60) n-Butylbenzene	26.91	91	1822674	11.67	ug/l	92
61) 1,2-Dibromo-3-Chloropropan	28.95	157	34717	9.78	ug/l	79
62) 1,2,4-Trichlorobenzene	31.05	180	390154	10.43	ug/l	97
63) Naphthalene	31.79	128	360261	8.23	ug/l	98
64) Hexachlorobutadiene	31.44	225	455583	11.43	ug/l	92
65) 1,2,3-Trichlorobenzene	32.46	180	293263	10.11	ug/l	96

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2233.D
 Acq Time : 6 Dec 93 9:17 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML
 Quant Time: Dec 6 9:55 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration



004027

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2233.D
 Acq Time : 6 Dec 93 9:17 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Post
12/16/93

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
1	Methylene Chloride-d2	1.000	1.000	0.0	114	-0.10
2	Chloromethane	1.256	0.904	28.0#	86	-0.06
3	Vinyl Chloride	1.983	2.163	-9.1	120	-0.08
4	Bromomethane	2.035	1.470	27.8#	89	-0.09
5	Chloroethane	1.499	1.613	-7.6	125	-0.10
6	Trichlorofluoromethane	5.061	4.770	5.7	104	-0.10
7	1,1-Dichloroethene	2.198	2.584	-17.6	132	-0.10
8	Freon 113	4.138	4.912	-18.7	132	-0.07
9	Methylene Chloride	1.913	1.605	16.1	107	-0.10
10	1,2-Dichloroethene (trans-)	2.666	2.991	-12.2	128	-0.10
11	1,1-Dichloroethane	5.315	4.933	7.2	110	-0.11
12	2,2-Dichloropropane	4.990	5.653	-13.3	124	-0.11
13	1,2-Dichloroethene (cis-)	2.595	2.449	5.6	113	-0.12
14	Bromochloromethane	1.222	1.275	-4.3	120	-0.12
	Chloroform	5.435	5.285	2.8	115	-0.11
	1,1-Dichloropropene	4.894	5.291	-8.1	121	-0.12
17 S	1,2-Dichloroethane-d4	1.436	1.353	5.8	105	-0.13
18	1,2-Dichloroethane	1.843	1.685	8.6	110	-0.12
19	1,1,1-Trichloroethane	5.663	5.602	1.1	114	-0.12
20	Carbon Tetrachloride	5.308	5.969	-12.5	123	-0.11
21	Benzene	7.602	8.181	-7.6	125	-0.12
22	Trichloroethene	3.347	3.658	-9.3	122	-0.12
23	1,2-Dichloropropane	2.723	2.593	4.8	113	-0.13
24	Fluorobenzene	1.000	1.000	0.0	114	-0.12
25	Dibromomethane	0.126	0.123	2.5	117	-0.13
26	Bromodichloromethane	0.510	0.487	4.5	116	-0.13
27	cis-1,3-Dichloropropene	0.393	0.359	8.6	110	-0.12
28	trans-1,3-Dichloropropene	0.223	0.198	10.9	111	-0.11
29	1,3-Dichloropropane	0.244	0.232	4.7	113	-0.12
30	Dibromochloromethane	0.269	0.246	8.3	112	-0.12
31	Bromoform	0.132	0.126	4.6	111	-0.12
32 S	Toluene-d8	0.864	0.845	2.2	111	-0.12
33	Toluene	0.580	0.604	-4.1	124	-0.11
34	1,1,2-Trichloroethane	0.144	0.134	7.0	115	-0.11
35	Tetrachloroethene	0.343	0.375	-9.2	124	-0.12
36	1,2-Dibromoethane	0.180	0.178	1.0	117	-0.11
37	Chlorobenzene	0.634	0.596	5.9	114	-0.12
38	1,1,1,2-Tetrachloroethane	0.304	0.307	-0.9	117	-0.11
39	Ethylbenzene	0.325	0.345	-6.2	122	-0.11
	m,p-Xylenes	0.444	0.448	-0.9	120	-0.11
	o-Xylene	0.378	0.390	-3.1	121	-0.14

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2233.D
 Acq Time : 6 Dec 93 9:17 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev (Min)
42	Styrene	0.598	0.570	4.6	116	-0.13
43	1,2-Dichlorobenzene-d4	1.000	1.000	0.0	113	-0.09
44	Isopropylbenzene	2.850	3.207	-12.6	124	-0.11
45 S	Bromofluorobenzene	1.096	1.110	-1.3	112	-0.11
46	Bromobenzene	1.358	1.443	-6.3	121	-0.11
47	1,1,2,2-Tetrachloroethane	0.406	0.389	4.3	115	-0.12
48	1,2,3-Trichloropropane	0.278	0.250	10.0	110	-0.10
49	n-Propylbenzene	3.944	4.349	-10.3	123	-0.11
50	2-Chlorotoluene	2.591	2.317	10.6	105	0.00
51	4-Chlorotoluene	2.125	2.317	-9.1	124	-0.11
52	1,3,5-Trimethylbenzene	2.290	2.468	-7.8	122	-0.10
53	Tert-Butylbenzene	2.451	2.683	-9.4	123	-0.10
54	1,2,4-Trimethylbenzene	2.267	2.262	0.2	117	-0.10
	Sec-Butylbenzene	3.466	4.074	-17.6	128	-0.11
	1,3-Dichlorobenzene	1.197	1.297	-8.4	119	-0.10
57	1,4-Dichlorobenzene	1.177	1.253	-6.5	122	-0.10
58	p-Isopropyltoluene	2.748	3.116	-13.4	127	-0.09
59	1,2-Dichlorobenzene	0.942	0.977	-3.7	118	-0.09
60	n-Butylbenzene	3.102	3.620	-16.7	129	-0.09
61	1,2-Dibromo-3-Chloropropane	0.070	0.069	2.2	120	-0.10
62	1,2,4-Trichlorobenzene	0.743	0.775	-4.3	118	-0.12
63	Naphthalene	0.870	0.715	17.7	93	-0.13
64	Hexachlorobutadiene	0.791	0.905	-14.3	123	-0.12
65	1,2,3-Trichlorobenzene	0.576	0.582	-1.1	104	-0.14

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2235.D
 Acq Time : 6 Dec 93 10:34 am
 Sample : METHOD BLANK
 Misc : MB81~~86~~ / b#81~~86~~ / 25ML
 Quant Time: Dec 6 11:07 1993
12/6/93

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.84	53	82102	10.00	ug/l	-0.08
24) Fluorobenzene	12.96	96	691032	10.00	ug/l	-0.09
43) 1,2-Dichlorobenzene-d4	27.23	150	268384	10.00	ug/l	-0.09
System Monitoring Compounds				%Recovery		
17) 1,2-Dichloroethane-d4	12.23	65	112570	9.55	ug/l	95.50%
32) Toluene-d8	16.76	98	597619	10.01	ug/l	100.10%
45) Bromofluorobenzene	23.49	95	348635	11.86	ug/l	118.56%
Target Compounds				Qvalue		
2) Chloromethane	4.68	50	4287	0.42	ug/l #	45
48) 1,2,3-Trichloropropane	23.50	75	168321	22.58	ug/l #	35

BATCH # 816
 DATE 12/16/93
 ANALYST TR

REVIEWED & APPROVED
 BY AMS DATE 12/14/93

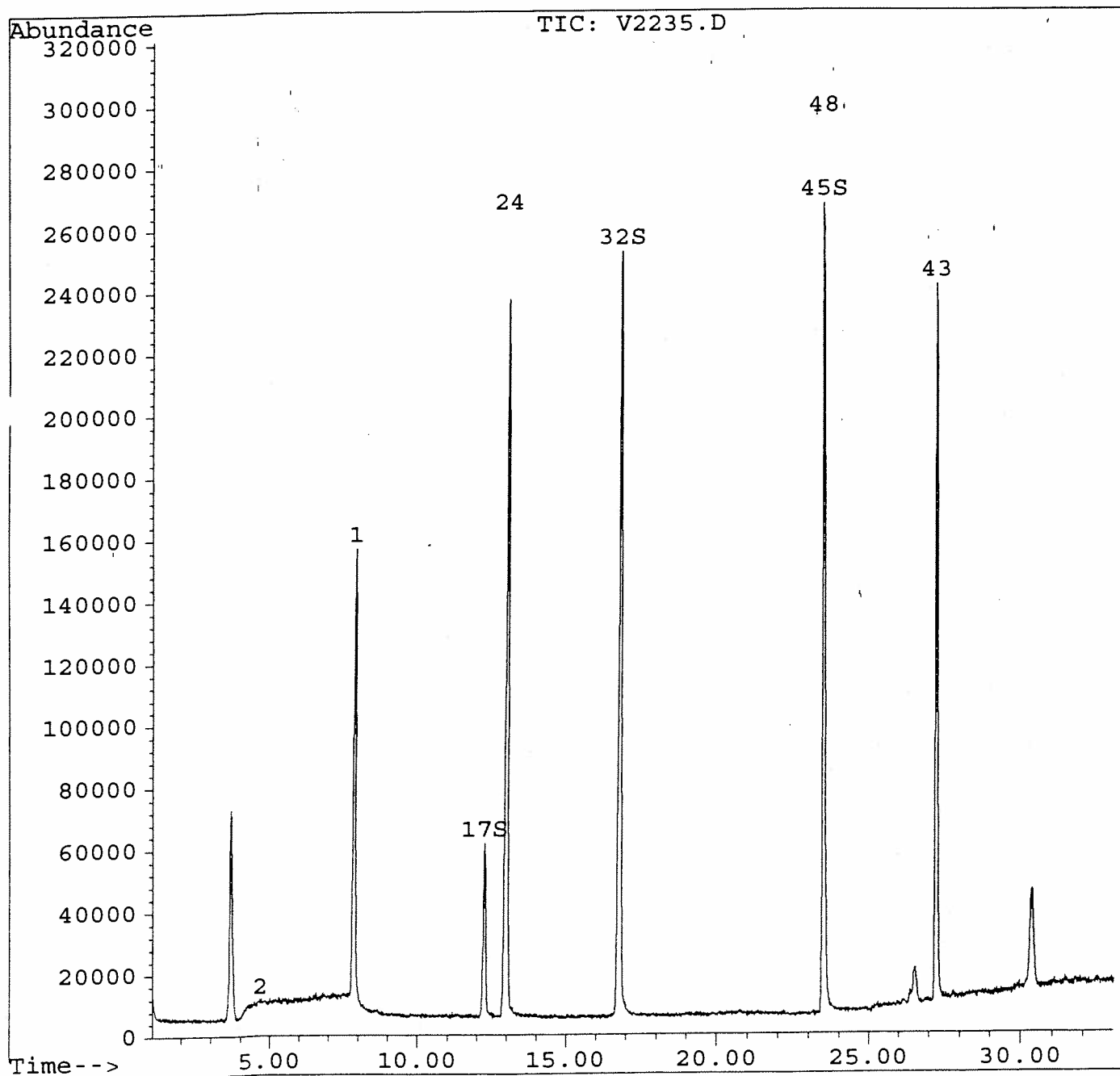
VOA-524.2 12-378-1

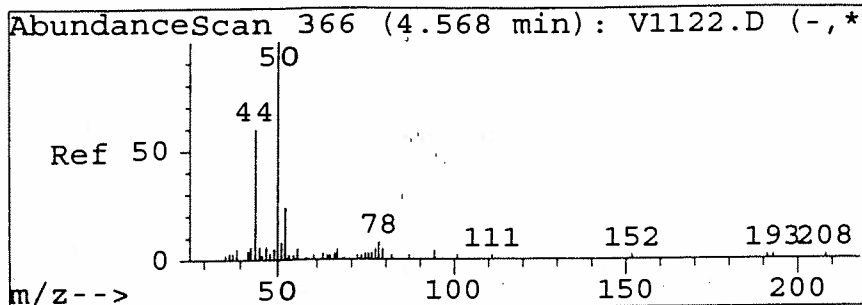
Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2235.D
Acq Time : 6 Dec 93 10:34 am
Sample : METHOD BLANK
Misc : MB815 / b#815 / 25ML
Quant Time: Dec 6 11:07 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

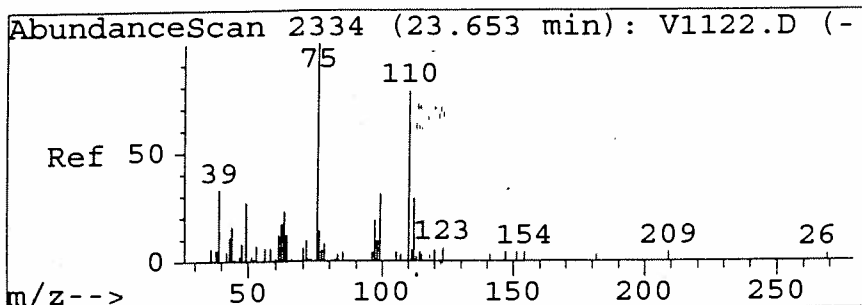
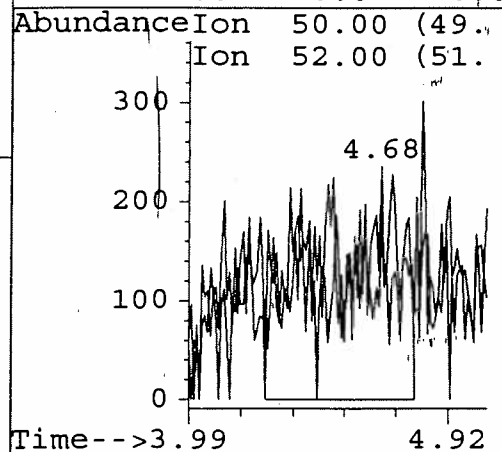
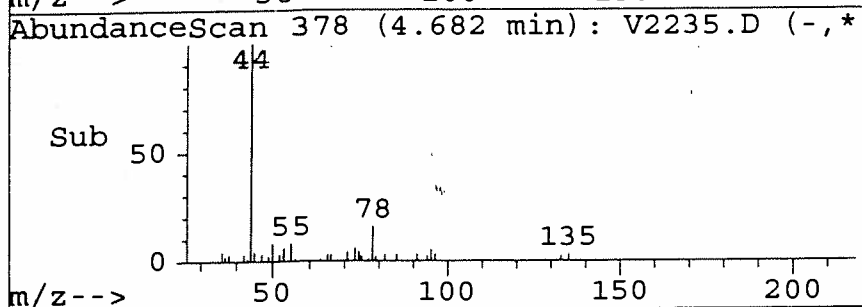
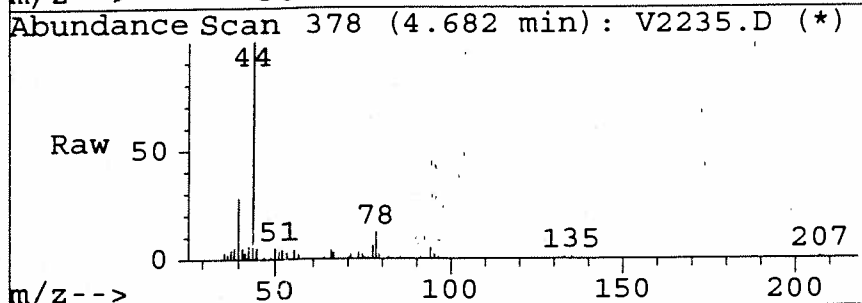
Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration





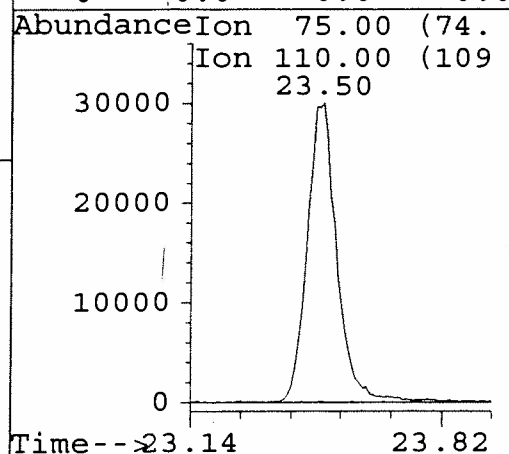
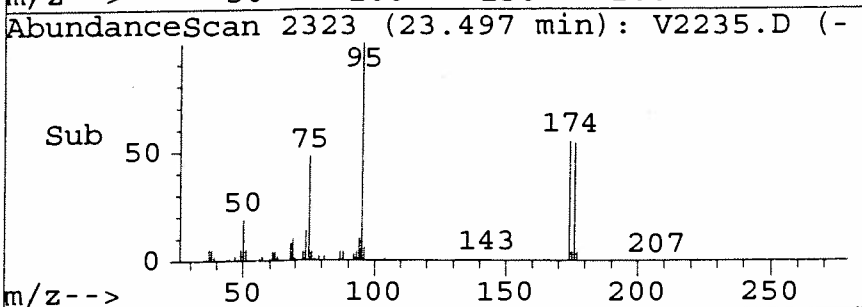
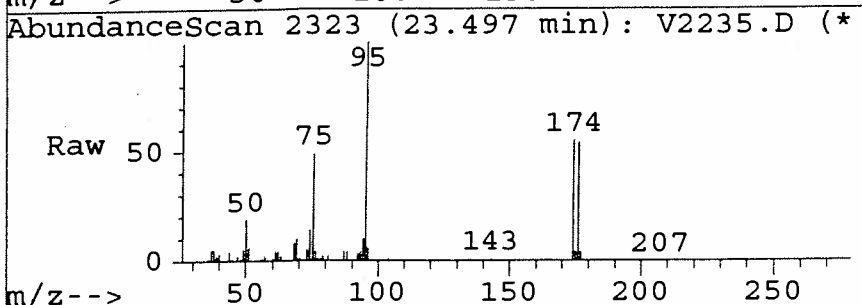
#2
Chloromethane
Concen: 0.42 ug/l
RT: 4.68 min Scan# 378
Delta R.T. 0.12 min
Lab File: V2235.D
Acq: 6 Dec 93 10:34 am

Tgt Ion:	50	Resp:	4287
Ion Ratio	Lower	Upper	
50	100		
52	0.0	10.0	50.0#
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#48
1,2,3-Trichloropropane
Concen: 22.58 ug/l
RT: 23.50 min Scan# 2323
Delta R.T. -0.22 min
Lab File: V2235.D
Acq: 6 Dec 93 10:34 am

Tgt Ion:	75	Resp:	168321
Ion Ratio	Lower	Upper	
75	100		
110	0.0	20.0	60.0#
0	0.0	0.0	0.0
0	0.0	0.0	0.0



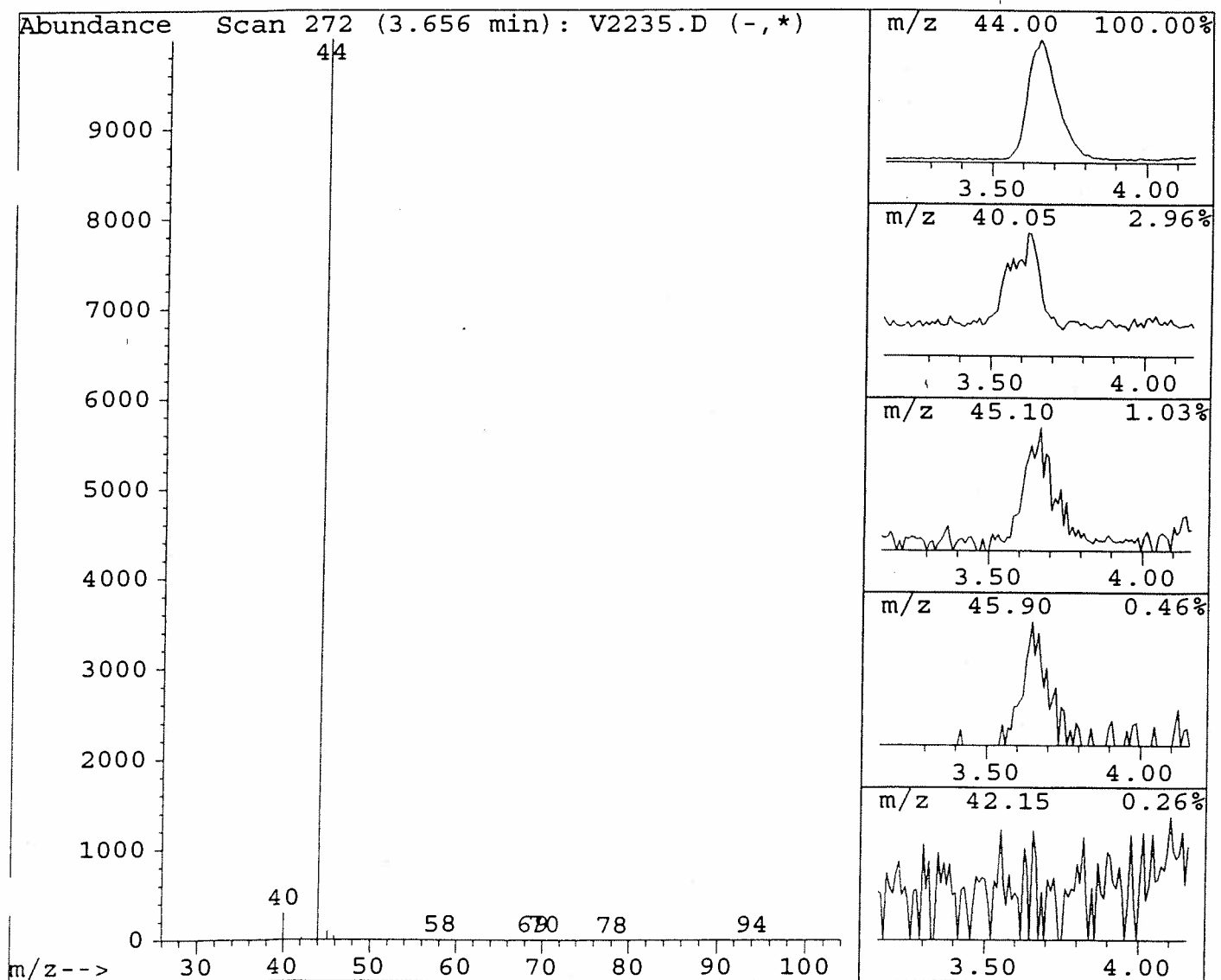
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2235.D
Acq Time : 6 Dec 93 10:34 am
Sample : METHOD BLANK
Misc : MB815 / b#815 / 25ML

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
3.66	6.10 ug/l	449860	Methylene Chloride-d2	7.84	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 Unknown			0	000000-00-0	0



Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2236.D
 Acq Time : 6 Dec 93 11:12 am
 Sample : G9311378*2
 Misc : GW-3 / SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 6 11:45 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.84	53	123024	10.00	ug/l	-0.08
24) Fluorobenzene	12.95	96	1110069	10.00	ug/l	-0.10
43) 1,2-Dichlorobenzene-d4	27.22	150	385827	10.00	ug/l	-0.09
System Monitoring Compounds				%Recovery		
17) 1,2-Dichloroethane-d4	12.23	65	164030	9.29	ug/l	92.87%
32) Toluene-d8	16.75	98	935541	9.76	ug/l	97.55%
45) Bromofluorobenzene	23.48	95	513536	12.15	ug/l	121.48%
Target Compounds				Qvalue		
7) 1,1-Dichloroethene	7.07	96	10138	0.37 ug/l	0.4	87
9) Methylene Chloride	7.85	84	6224	0.26 ug/l	# 1.5	1
15) Chloroform	10.75	83	20967	0.31 ug/l	0.3	99
19) 1,1,1-Trichloroethane	11.63	97	39120	0.56 ug/l	0.6	95
22) Trichloroethene	13.84	130	619638	15.05 ug/l	15	95
30) Dibromochloromethane	18.54	129	57112	1.92 ug/l	#	12
33) Toluene	16.95	92	13672	0.21 ug/l	0.2	91
35) Tetrachloroethene	18.54	164	60281	1.58 ug/l	1.6	93

BATCH # 816
 DATE 12/16/93
 ANALYST RV

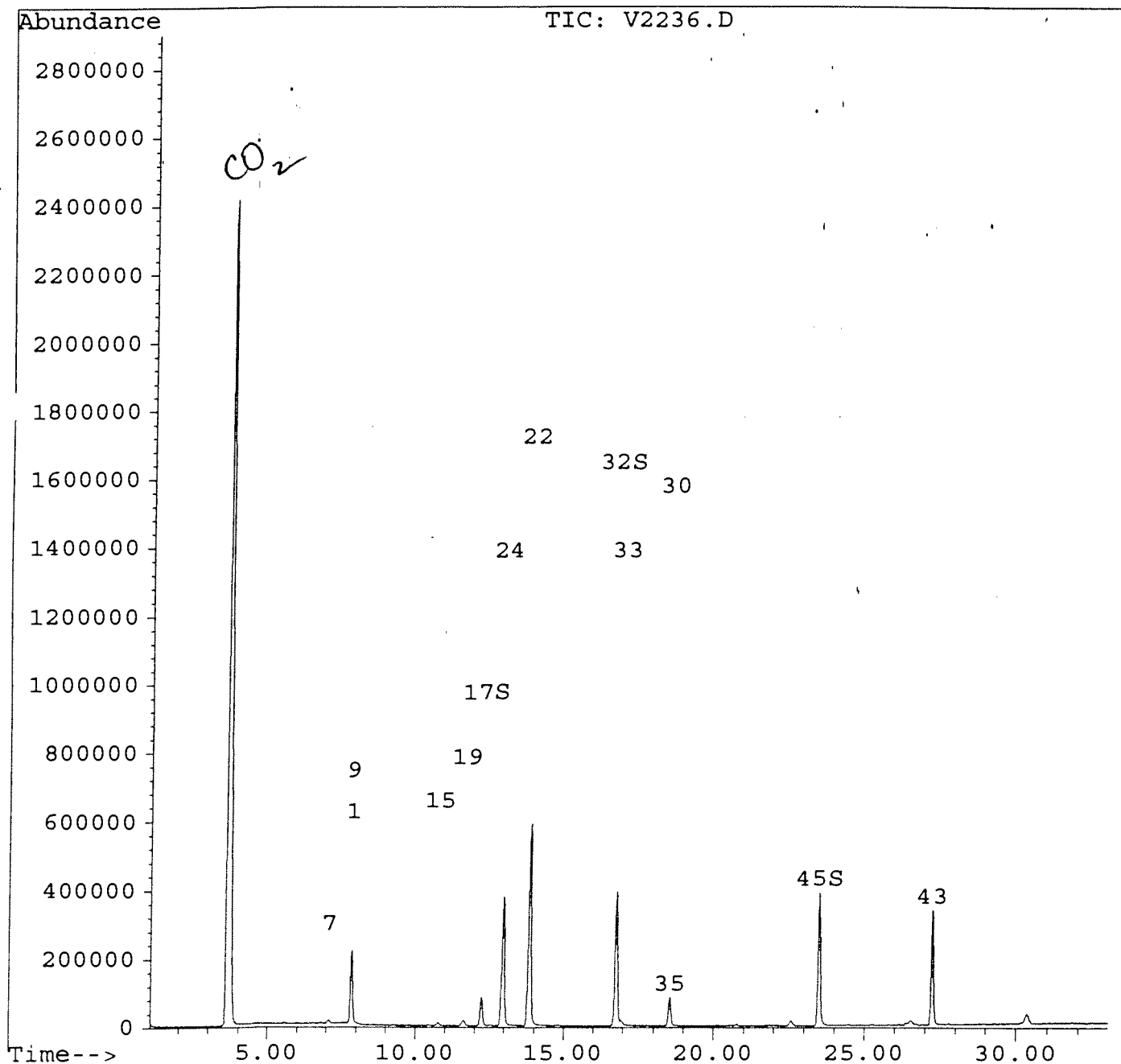
REVIEWED & APPROVED
 BY AMS DATE 12/14/93

Quantitation Report

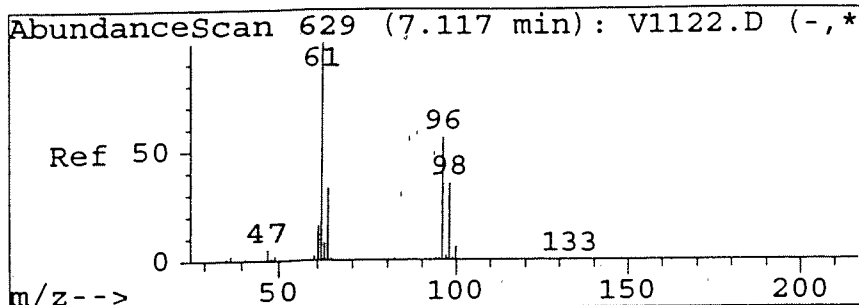
Data File : C:\HPCHEM\1\DATA\DEC3\V2236.D
Acq Time : 6 Dec 93 11:12 am
Sample : G9311378*2
Misc : GW-3 / SEACOR.SLO / b#816 / 25mL
Quant Time: Dec 6 11:45 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

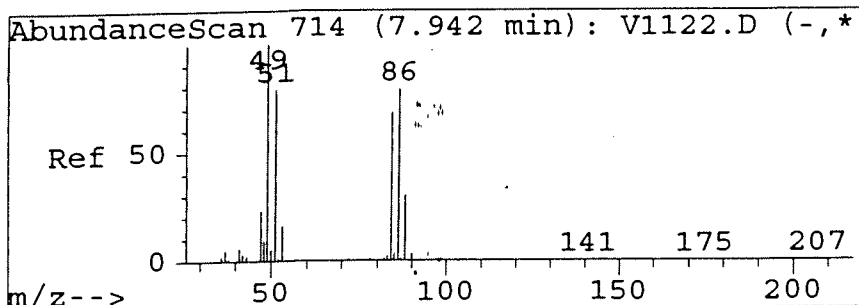
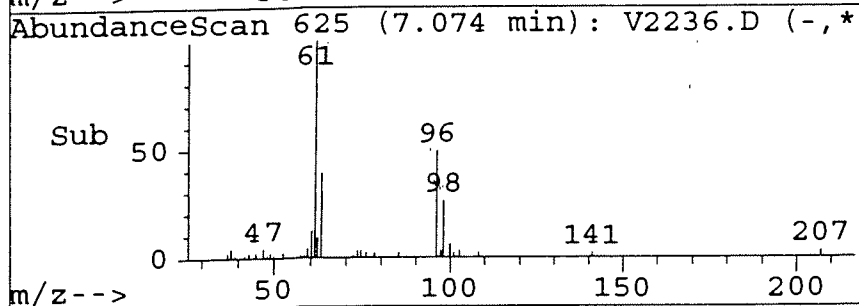
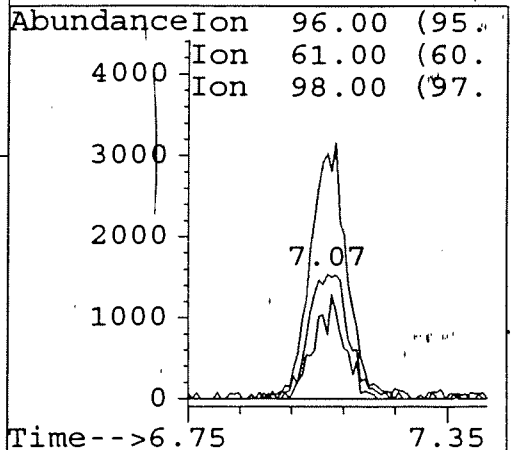
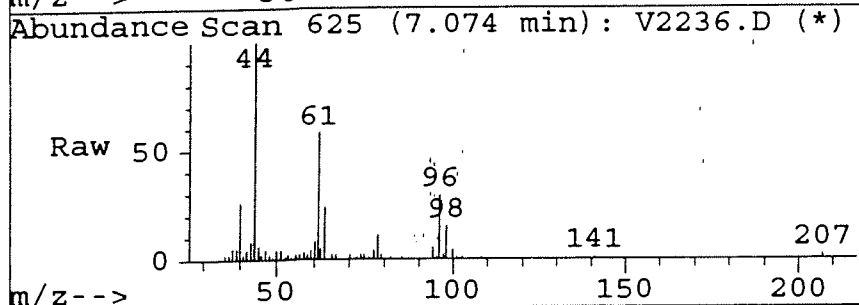


004035



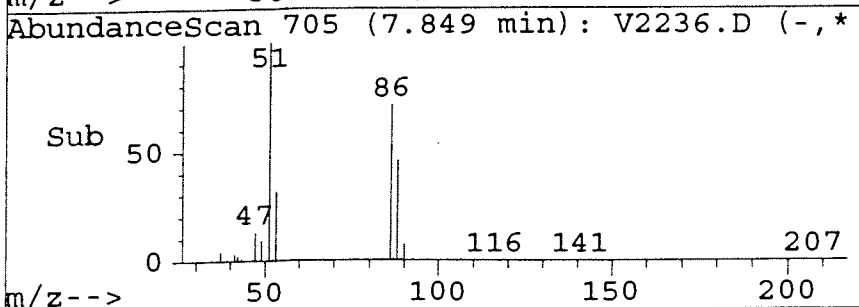
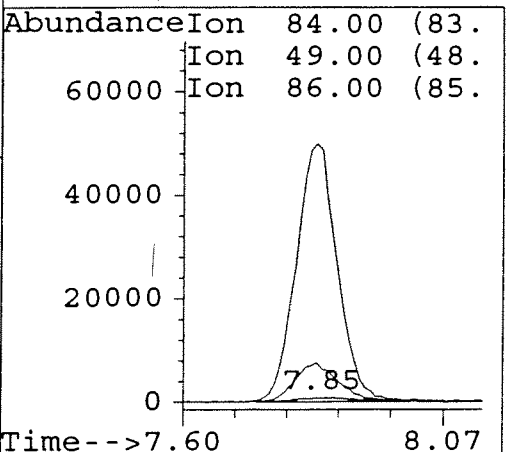
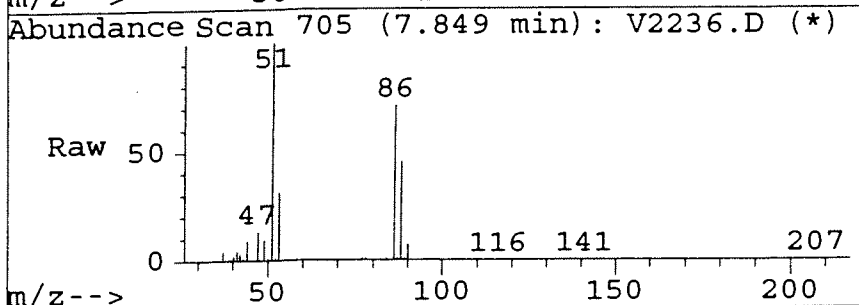
#7
1,1-Dichloroethene
Concen: 0.37 ug/l
RT: 7.07 min Scan# 625
Delta R.T. -0.08 min
Lab File: V2236.D
Acq: 6 Dec 93 11:12 am

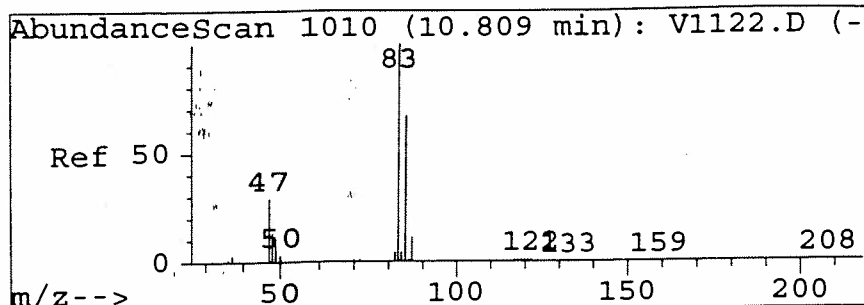
Tgt Ion:	96	Resp:	10138
Ion Ratio	Lower	Upper	
96	100		
61	180.1	110.0	210.0
98	61.2	18.0	118.0
0	0.0	0.0	0.0



#9
Methylene Chloride
Concen: 0.26 ug/l
RT: 7.85 min Scan# 705
Delta R.T. -0.14 min
Lab File: V2236.D
Acq: 6 Dec 93 11:12 am

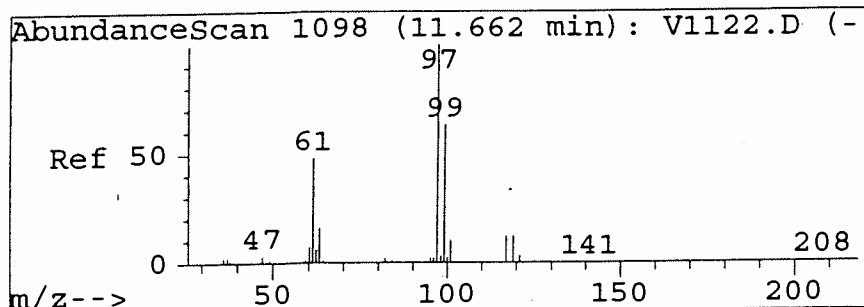
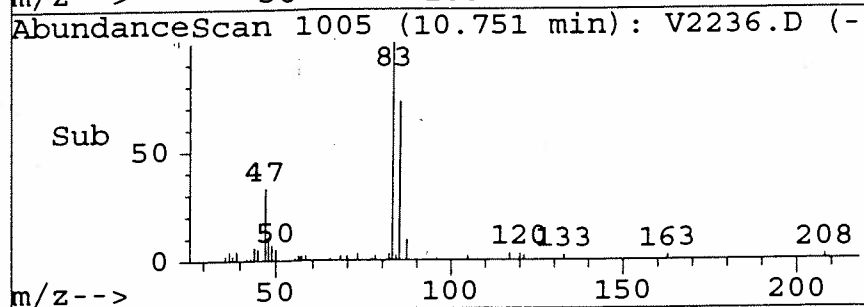
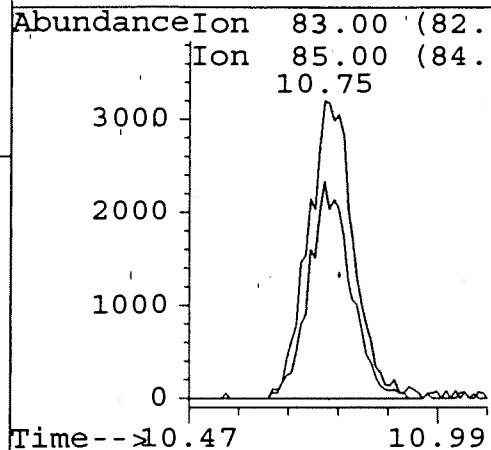
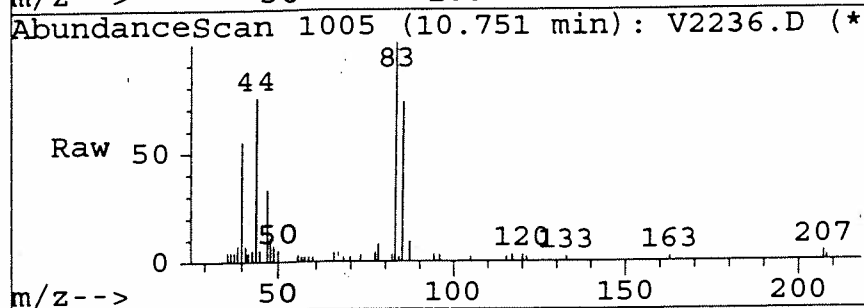
Tgt Ion:	84	Resp:	6224
Ion Ratio	Lower	Upper	
84	100		
49	668.2	86.0	186.0#
86	4134.0	12.0	112.0#
0	0.0	0.0	0.0





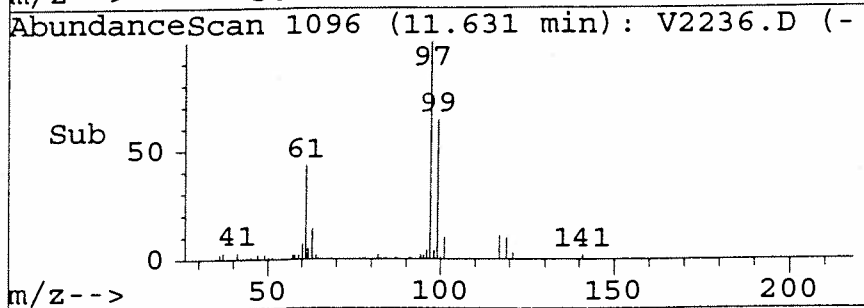
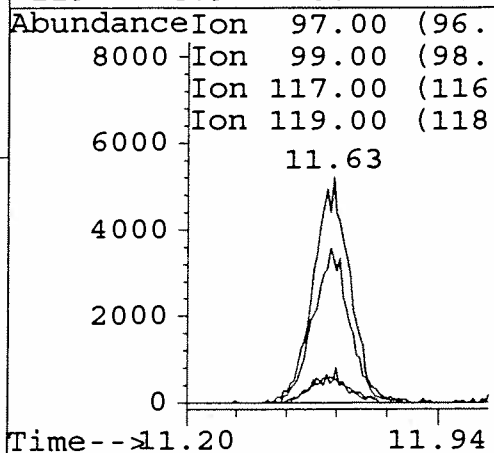
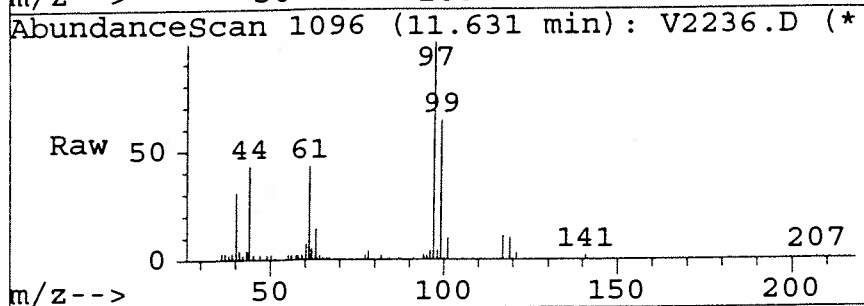
#15
Chloroform
Concen: 0.31 ug/l
RT: 10.75 min Scan# 1005
Delta R.T. -0.11 min
Lab File: V2236.D
Acq: 6 Dec 93 11:12 am

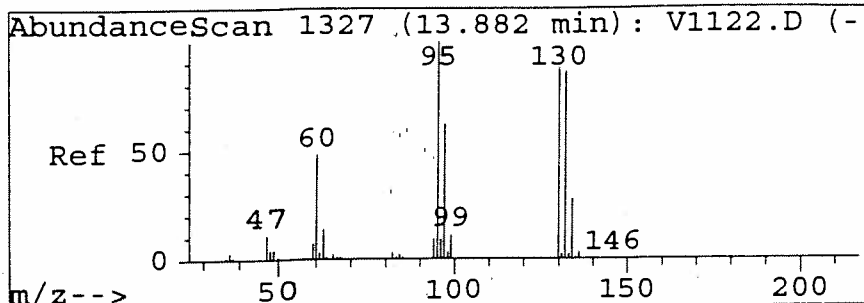
Tgt Ion:83	Resp:	20967
Ion Ratio	Lower	Upper
83 100		
85 66.7	15.6	115.6
0 0.0	0.0	0.0
0 0.0	0.0	0.0



#19
1,1,1-Trichloroethane
Concen: 0.56 ug/l
RT: 11.63 min Scan# 1096
Delta R.T. -0.10 min
Lab File: V2236.D
Acq: 6 Dec 93 11:12 am

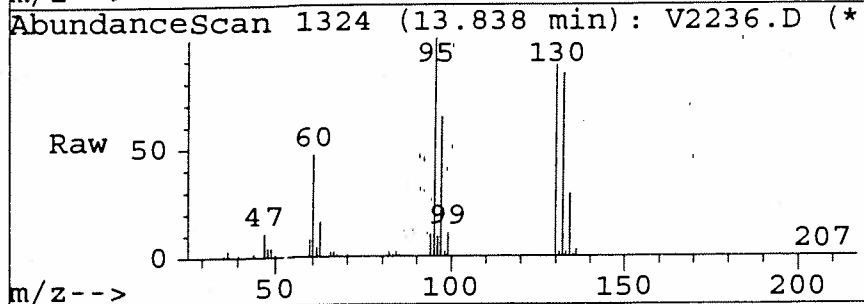
Tgt Ion:97	Resp:	39120
Ion Ratio	Lower	Upper
97 100		
99 67.7	15.6	115.6
117 11.4	0.0	62.3
119 4.9	0.0	62.0



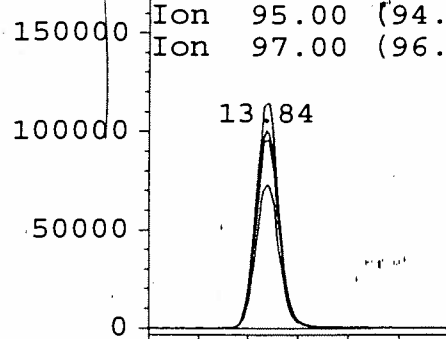


#22
Trichloroethene
Concen: 15.05 ug/l
RT: 13.84 min Scan# 1324
Delta R.T. -0.10 min
Lab File: V2236.D
Acq: 6 Dec 93 11:12 am

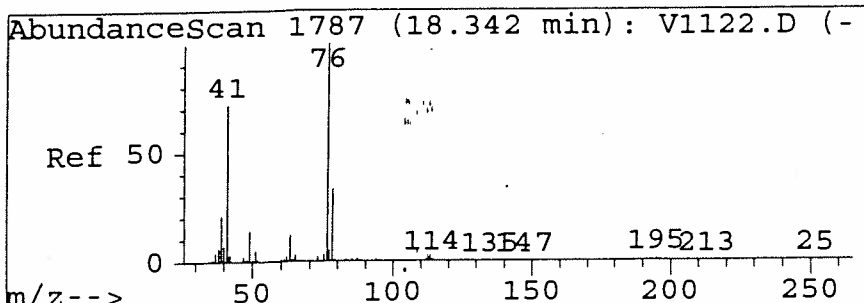
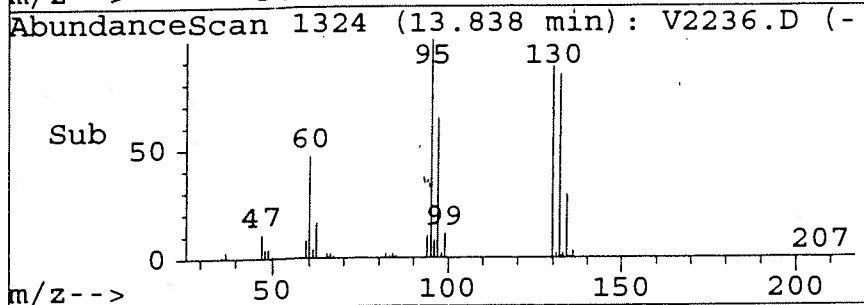
Tgt Ion:	130	Resp:	619638
Ion	Ratio	Lower	Upper
130	100		
132	97.2	48.4	148.4
95	115.4	59.0	159.0
97	74.5	17.0	117.0



Abundance	Ion	130.00	(129
	Ion	132.00	(131
	Ion	95.00	(94.
	Ion	97.00	(96.

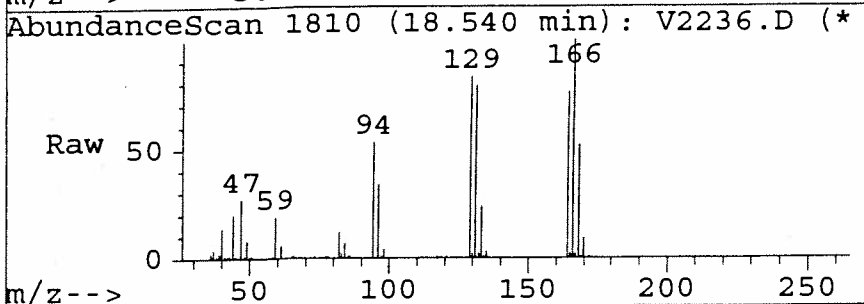


Time--> 13.38 14.34

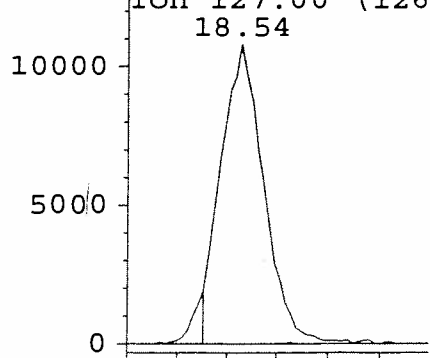


#30
Dibromochloromethane
Concen: 1.92 ug/l
RT: 18.54 min Scan# 1810
Delta R.T. -0.56 min
Lab File: V2236.D
Acq: 6 Dec 93 11:12 am

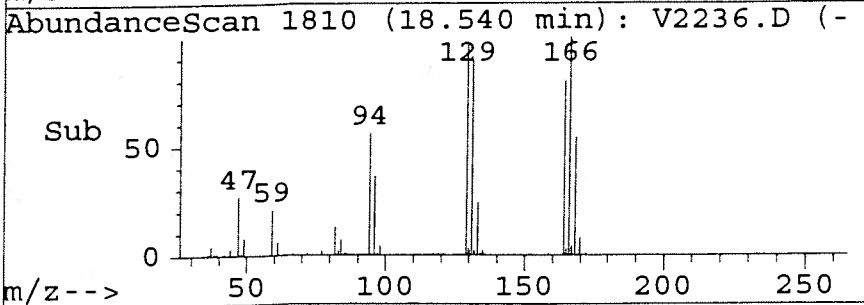
Tgt Ion:	129	Resp:	57112
Ion	Ratio	Lower	Upper
129	100		
127	0.0	25.0	125.0#
0	0.0	0.0	0.0
0	0.0	0.0	0.0



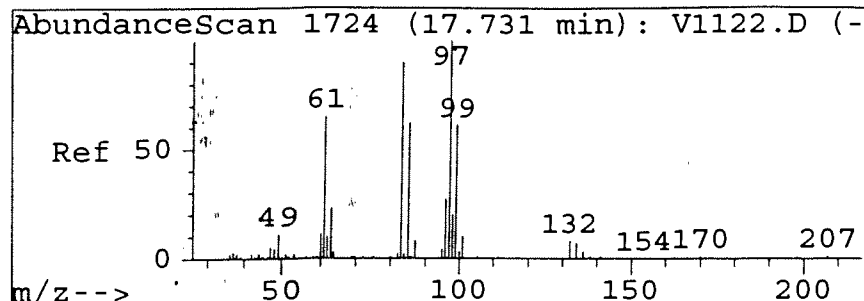
Abundance	Ion	129.00	(128
	Ion	127.00	(126



Time--> 18.34 18.78

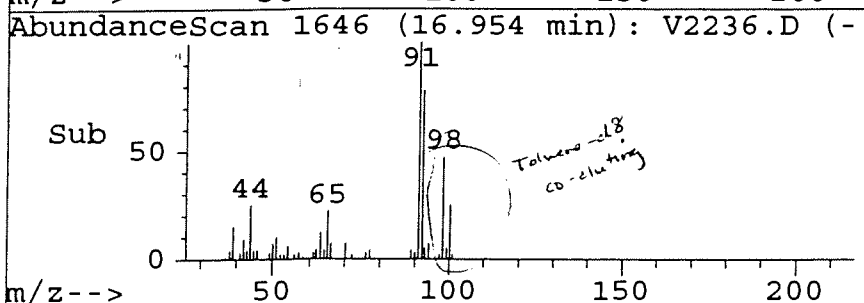
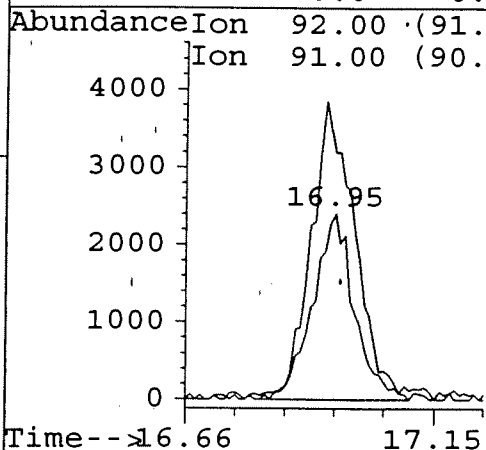
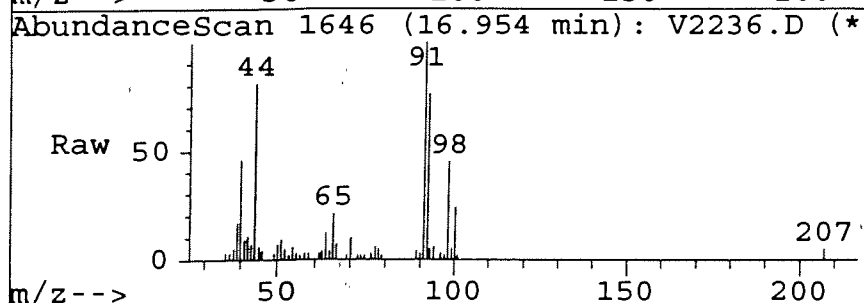


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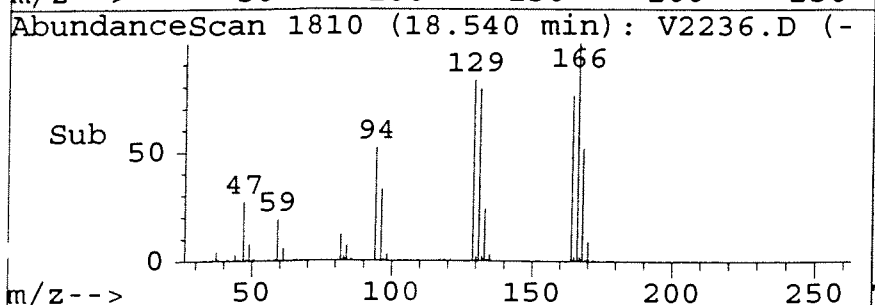
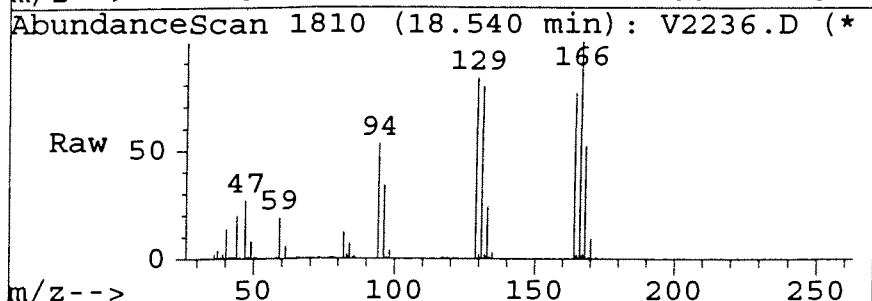
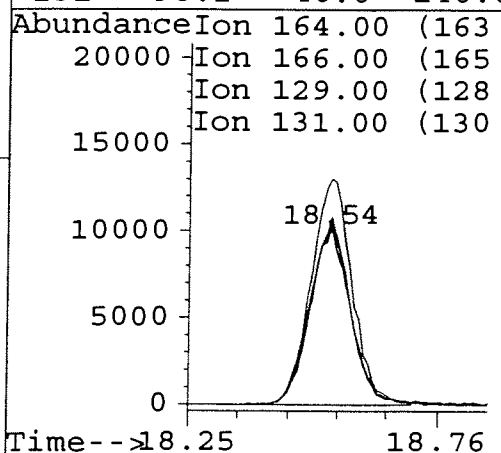
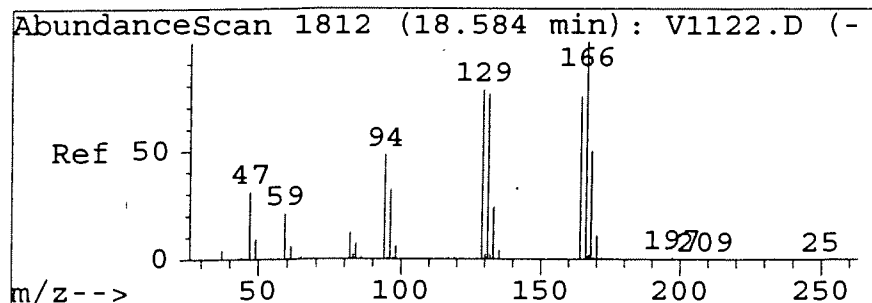
#33
Toluene
Concen: 0.21 ug/l
RT: 16.95 min Scan# 1646
Delta R.T. -0.09 min
Lab File: V2236.D
Acq: 6 Dec 93 11:12 am

Tgt Ion:92	Resp:	13672
Ion Ratio	Lower	Upper
92 100		
91 172.3	110.8	210.8
0 0.0	0.0	0.0
0 0.0	0.0	0.0



#35
Tetrachloroethene
Concen: 1.58 ug/l
RT: 18.54 min Scan# 1810
Delta R.T. -0.10 min
Lab File: V2236.D
Acq: 6 Dec 93 11:12 am

Tgt Ion:164	Resp:	60281
Ion Ratio	Lower	Upper
164 100		
166 128.6	84.0	184.0
129 99.7	40.0	140.0
131 98.1	40.0	140.0



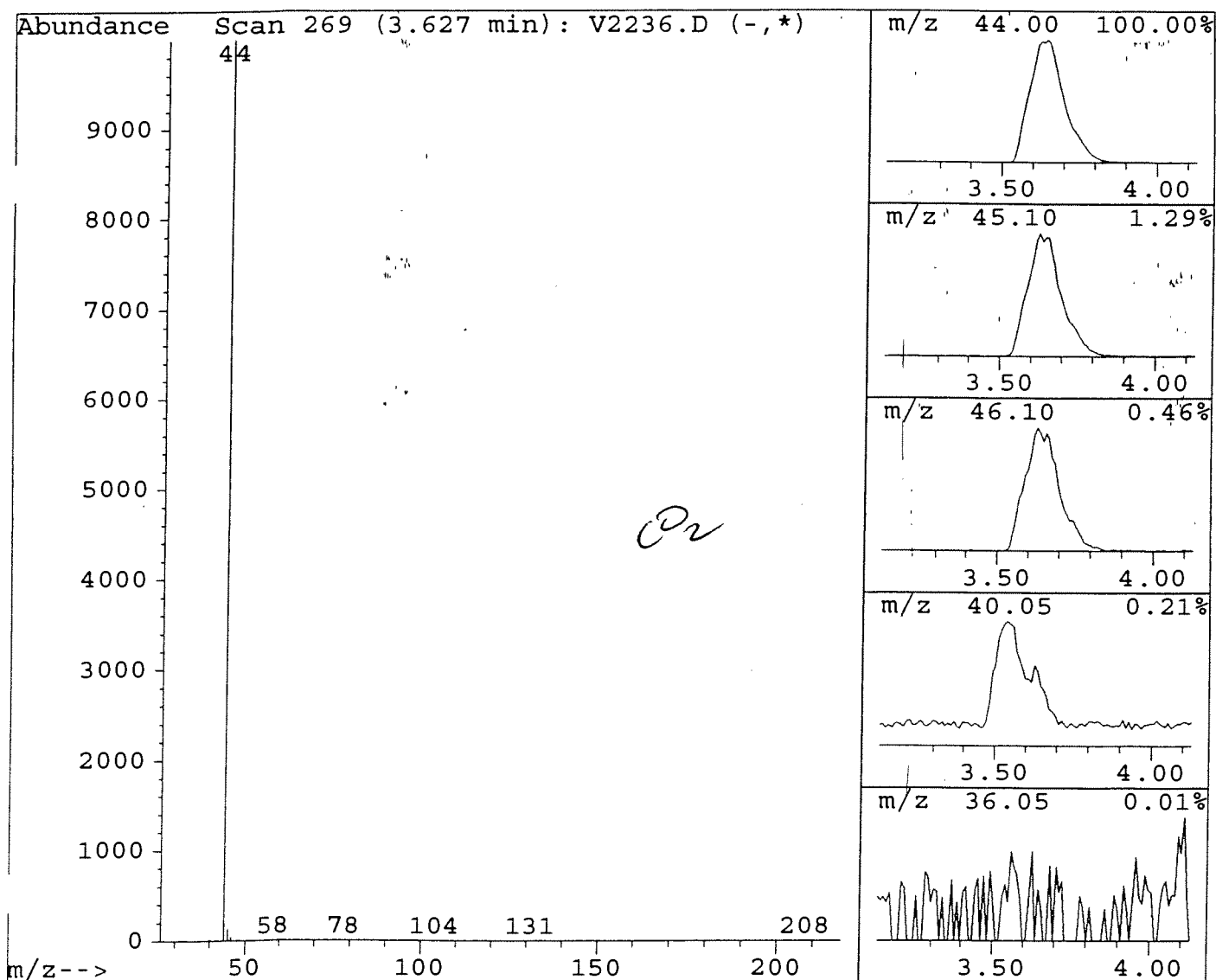
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2236.D
Acq Time : 6 Dec 93 11:12 am
Sample : G9311378*2
Misc : GW-3 / SEACOR.SLO / b#816 / 25mL

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
3.63	79.82 ug/l	8983478	Methylene Chloride-d2	7.84	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 Unknown			0 000000-00-0		0



004040

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2237.D
 Acq Time : 6 Dec 93 11:51 am
 Sample : G9311378*3
 Misc : GW-4 / SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 6 12:24 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.85	53	125965	10.00	ug/l	-0.07
24) Fluorobenzene	12.95	96	1117161	10.00	ug/l	-0.09
43) 1,2-Dichlorobenzene-d4	27.24	150	413839	10.00	ug/l	-0.08

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.23	65	174286	9.64	ug/l	96.37%
32) Toluene-d8	16.76	98	955930	9.90	ug/l	99.05%
45) Bromofluorobenzene	23.49	95	543011	11.98	ug/l	119.76%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
9) Methylene Chloride	7.85	84	7294	0.30	ug/l	# 15 1
15) Chloroform	10.78	83	18603	0.27	ug/l	0.3 95
22) Trichloroethene	13.85	130	25997	0.62	ug/l	0.4 91
30) Dibromochloromethane	<u>18.56</u>	129	10857	0.36	ug/l	# 12
35) Tetrachloroethene	<u>18.55</u>	164	10788	0.28	ug/l	0.3 90

BATCH # 416
 DATE 12/6/93
 ANALYST ms

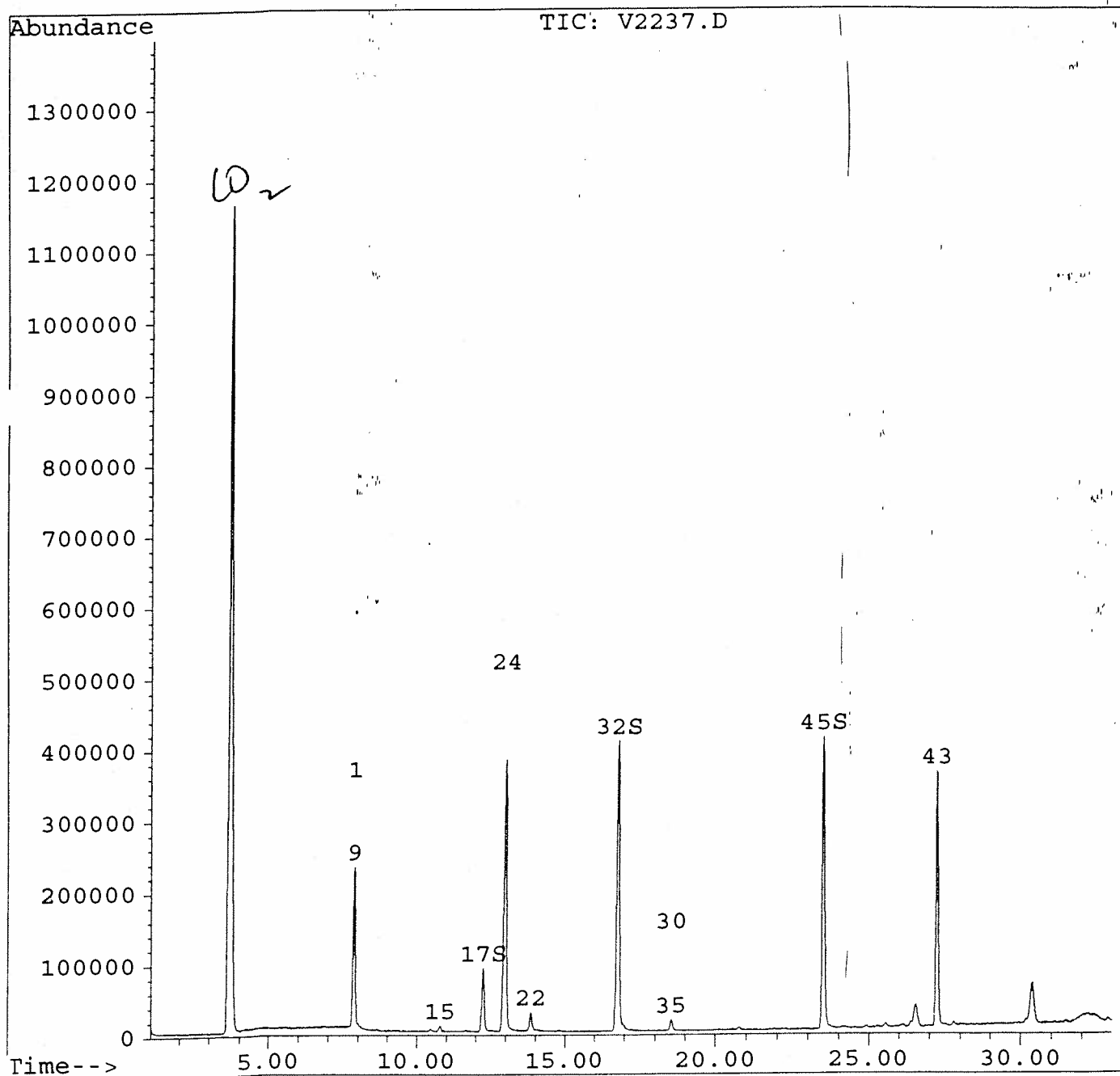
REVIEWED & APPROVED
 BY AMS DATE 12/14/93

Quantitation Report

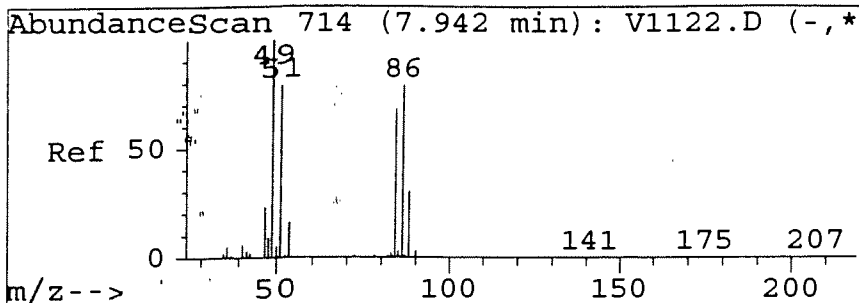
Data File : C:\HPCHEM\1\DATA\DEC3\V2237.D
Acq Time : 6 Dec 93 11:51 am
Sample : G9311378*3
Misc : GW-4 / SEACOR.SLO / b#816 / 25mL
Quant Time: Dec 6 12:24 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

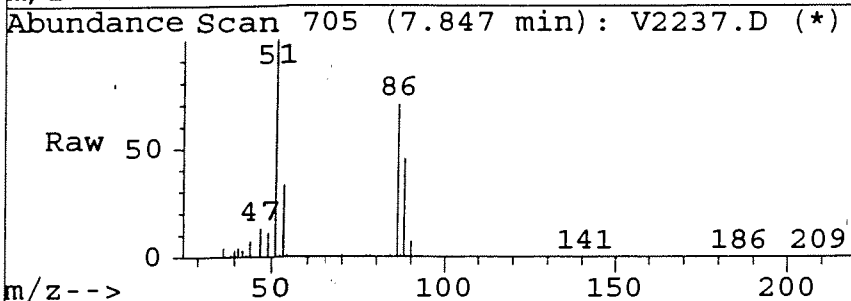


004042

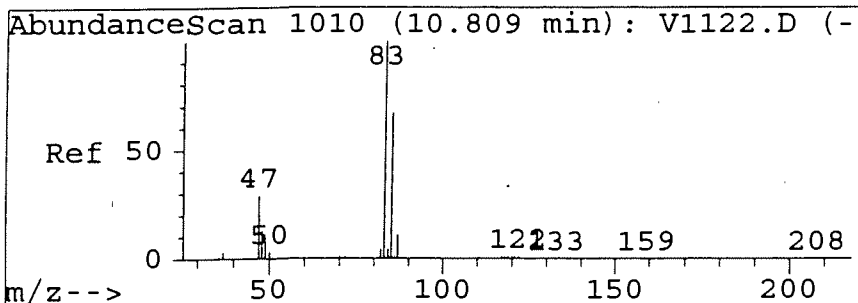
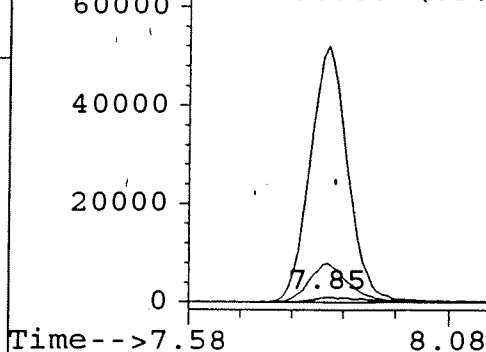
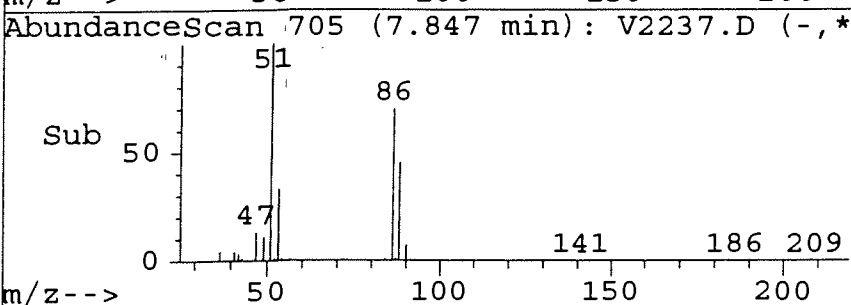


#9
Methylene Chloride
Concen: 0.30 ug/l
RT: 7.85 min Scan# 705
Delta R.T. -0.14 min
Lab File: V2237.D
Acq: 6 Dec 93 11:51 am

Tgt Ion: 84 Resp: 7294
Ion Ratio Lower Upper
84 100
49 597.3 86.0 186.0#
86 3700.2 12.0 112.0#
0 0.0 0.0 0.0

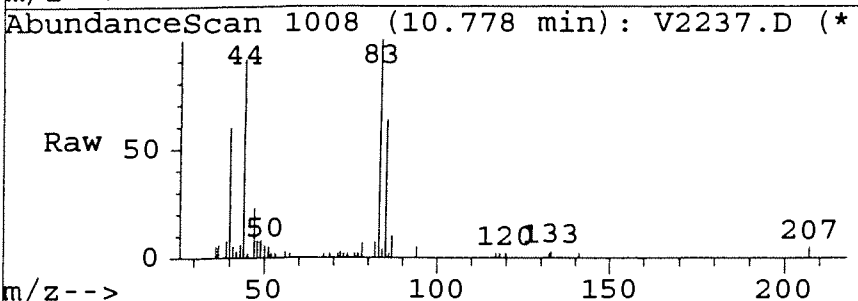


AbundanceIon 84.00 (83.
Ion 49.00 (48.
Ion 86.00 (85.

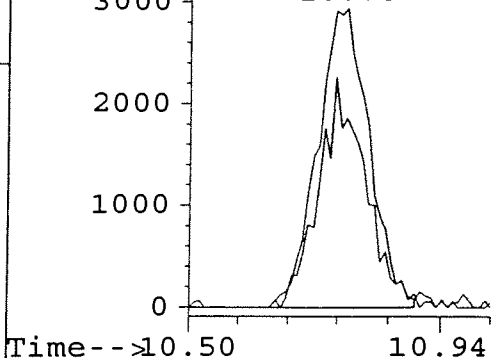
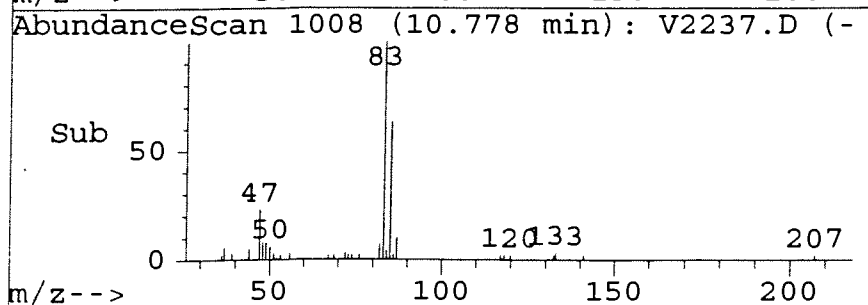


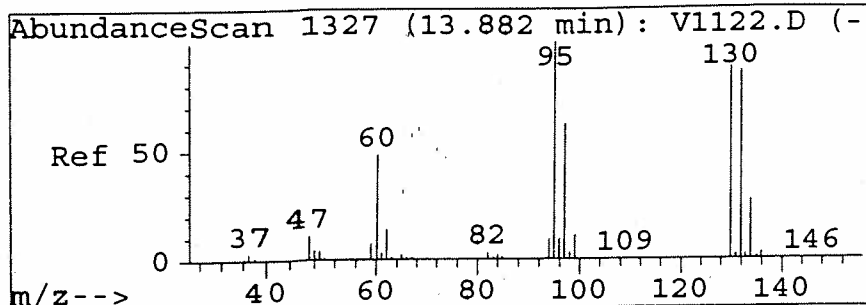
#15
Chloroform
Concen: 0.27 ug/l
RT: 10.78 min Scan# 1008
Delta R.T. -0.08 min
Lab File: V2237.D
Acq: 6 Dec 93 11:51 am

Tgt Ion: 83 Resp: 18603
Ion Ratio Lower Upper
83 100
85 69.3 15.6 115.6
0 0.0 0.0 0.0
0 0.0 0.0 0.0



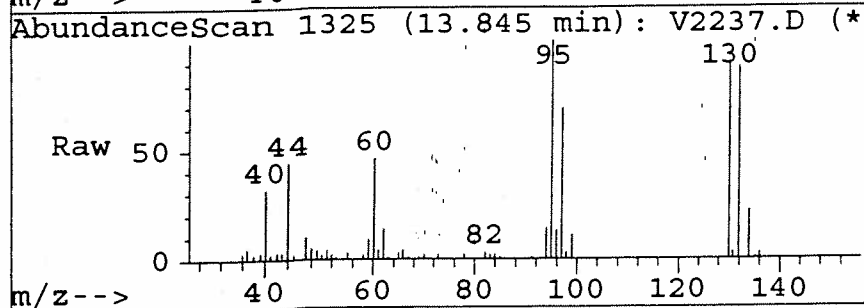
AbundanceIon 83.00 (82.
Ion 85.00 (84.
10.78



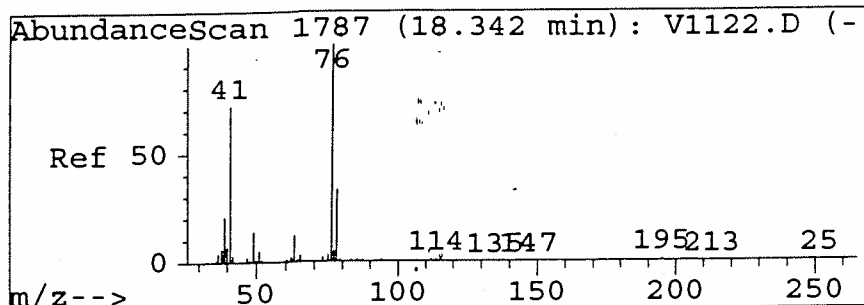
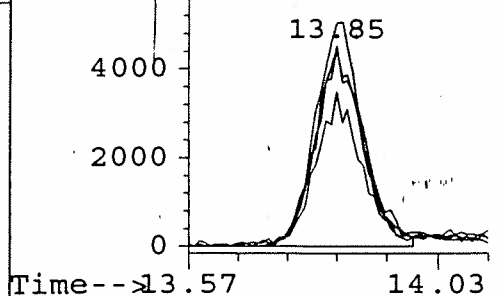
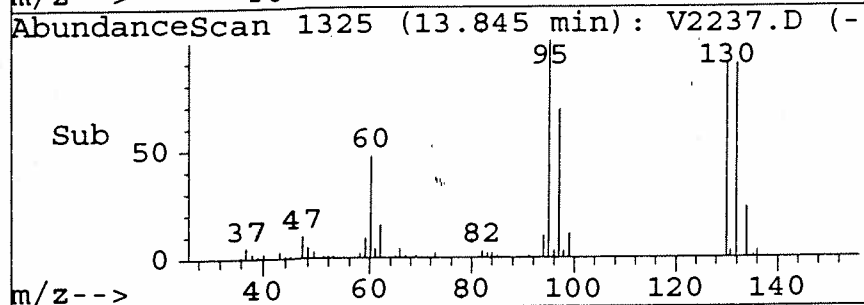


#22
Trichloroethene
Concen: 0.62 ug/l
RT: 13.85 min Scan# 1325
Delta R.T. -0.09 min
Lab File: V2237.D
Acq: 6 Dec 93 11:51 am

Tgt Ion:	130	Resp:	25997
Ion	Ratio	Lower	Upper
130	100		
132	106.2	48.4	148.4
95	119.9	59.0	159.0
97	74.7	17.0	117.0

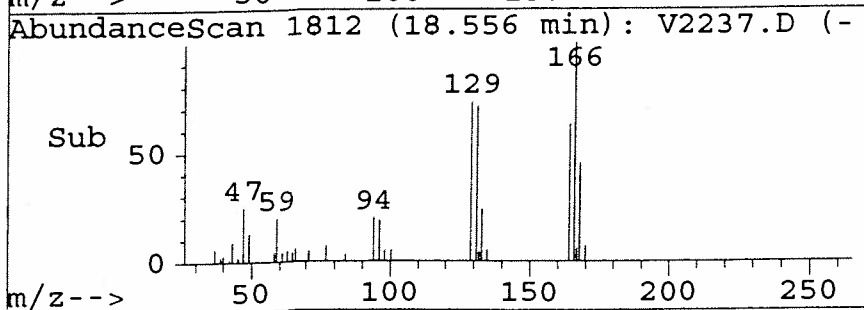
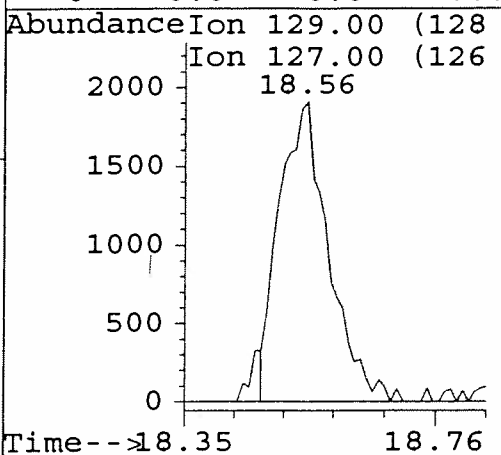
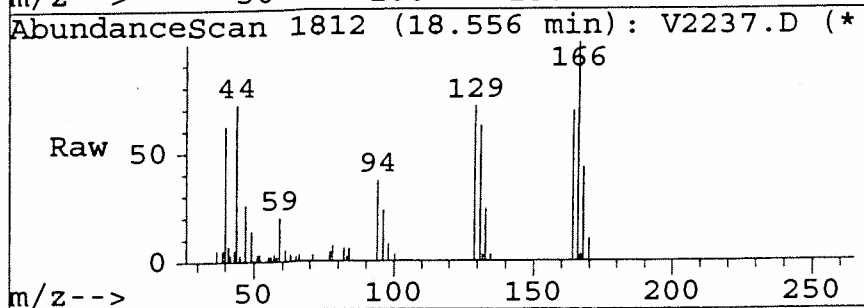


Abundance	Ion	130.00	(129
8000	Ion	132.00	(131
	Ion	95.00	(94.
6000	Ion	97.00	(96.

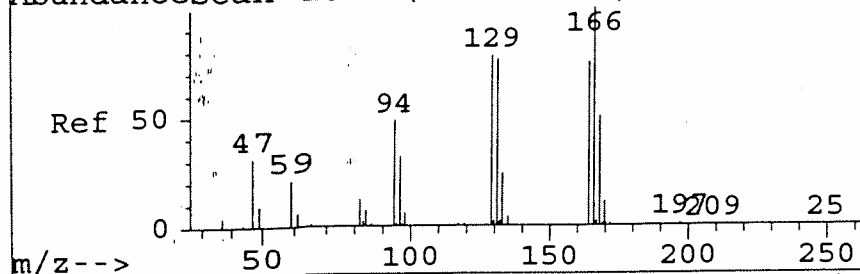


#30
Dibromochloromethane
Concen: 0.36 ug/l
RT: 18.56 min Scan# 1812
Delta R.T. -0.54 min
Lab File: V2237.D
Acq: 6 Dec 93 11:51 am

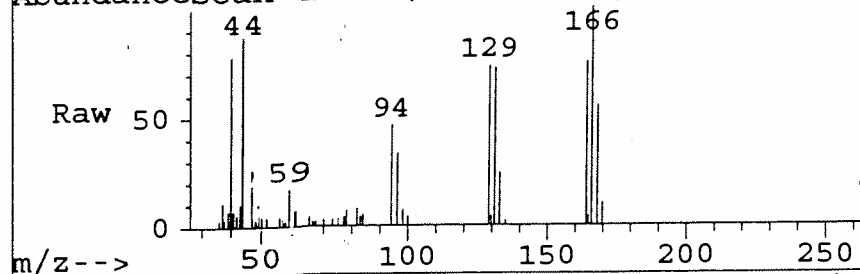
Tgt Ion:	129	Resp:	10857
Ion	Ratio	Lower	Upper
129	100		
127	0.0	25.0	125.0#
0	0.0	0.0	0.0
0	0.0	0.0	0.0



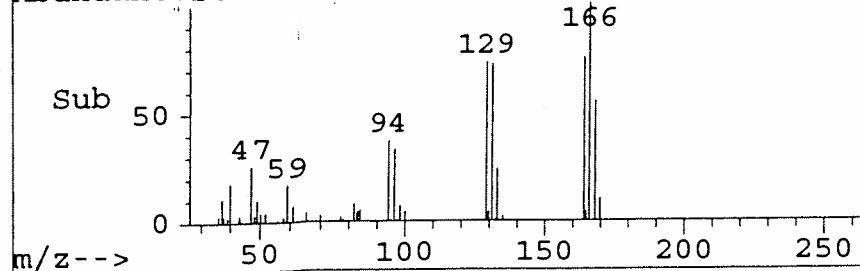
AbundanceScan 1812 (18.584 min): V1122.D (-



AbundanceScan 1811 (18.546 min): V2237.D (*



AbundanceScan 1811 (18.546 min): V2237.D (-



#35

Tetrachloroethene

Concen: 0.28 ug/l

RT: 18.55 min Scan# 1811

Delta R.T. -0.10 min

Lab File: V2237.D

Acq: 6 Dec 93 11:51 am

Tgt Ion:164 Resp: 10788

Ion Ratio Lower Upper

164 100

166 138.7 84.0 184.0

129 105.3 40.0 140.0

131 100.6 40.0 140.0

AbundanceIon 164.00 (163

4000 Ion 166.00 (165

Ion 129.00 (128

Ion 131.00 (130

3000

2000

18.55

1000

0

Time-->18.29 18.76

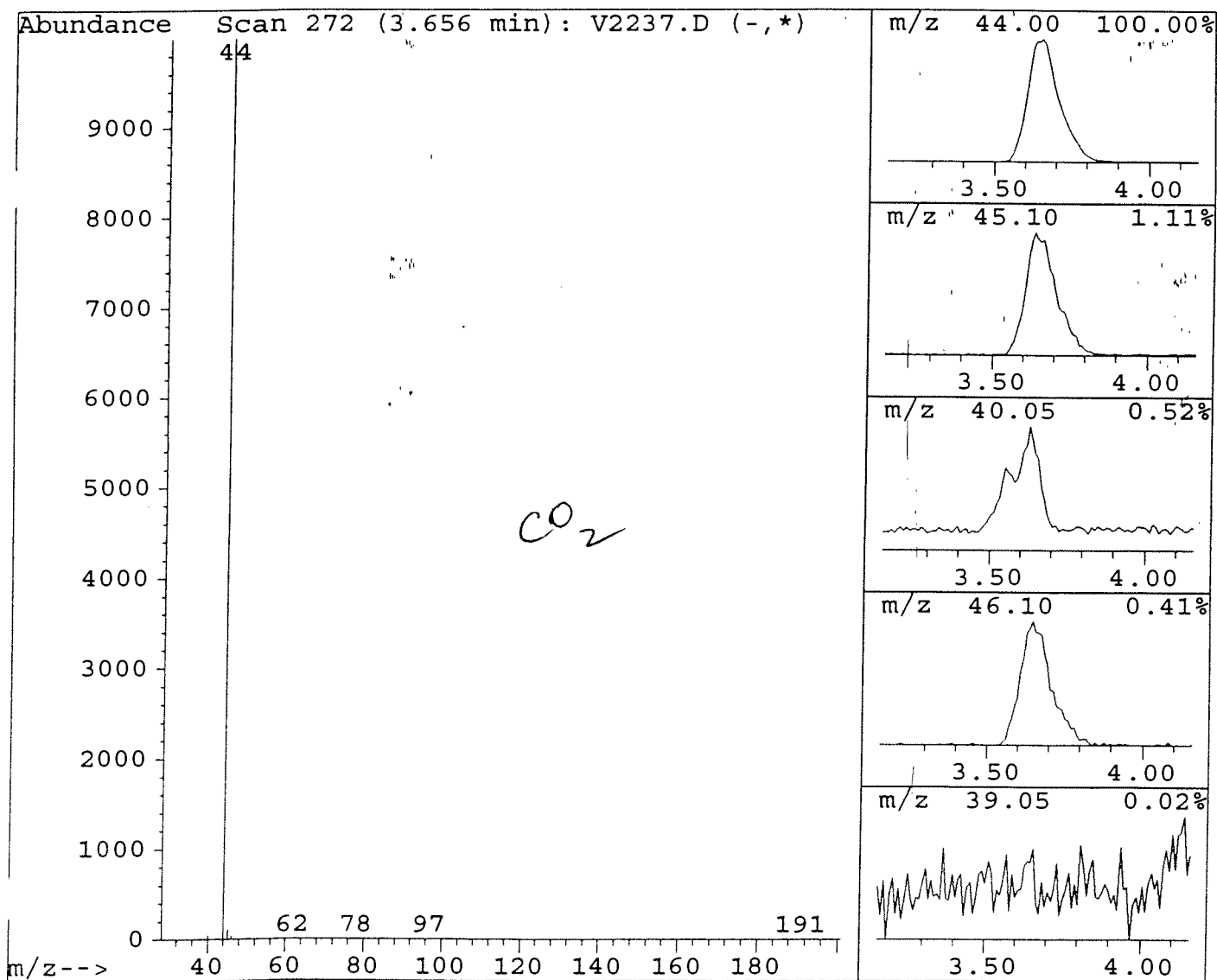
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2237.D
Acq Time : 6 Dec 93 11:51 am
Sample : G9311378*3
Misc : GW-4 / SEACOR.SLO / b#816 / 25mL

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
3.66	74.10 ug/l	8417708	Methylene Chloride-d2	7.85	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 Unknown			0 000000-00-0		0



004046

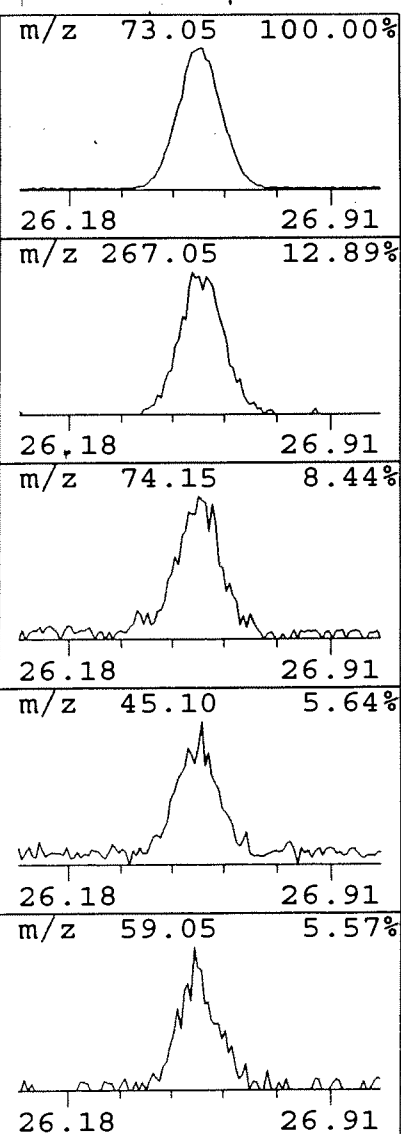
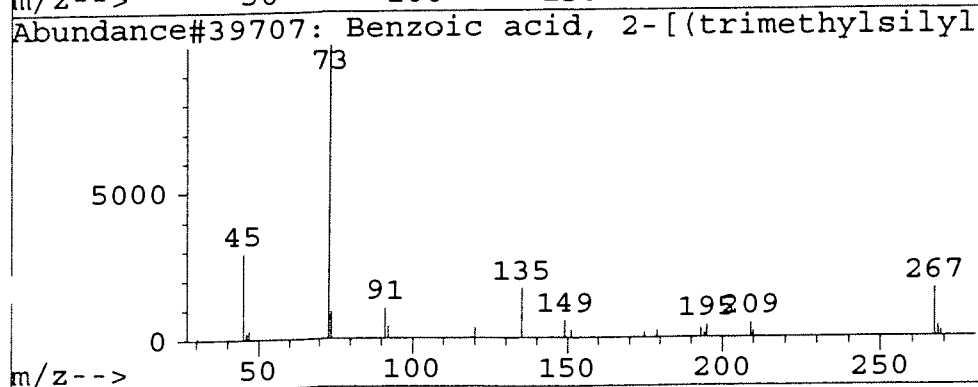
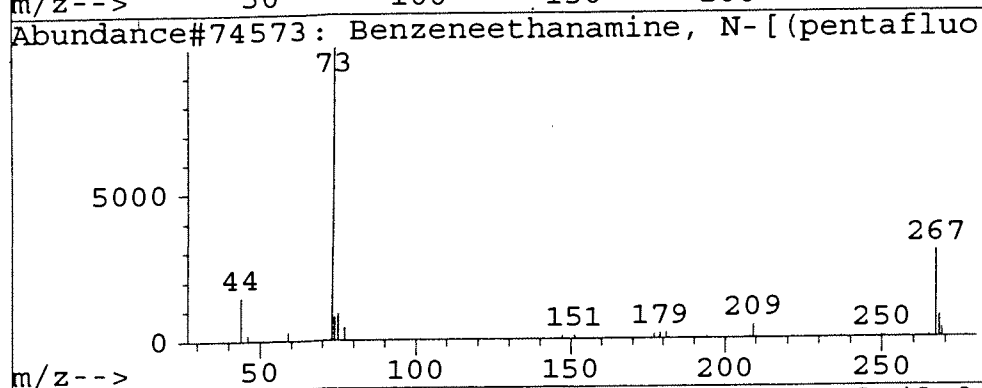
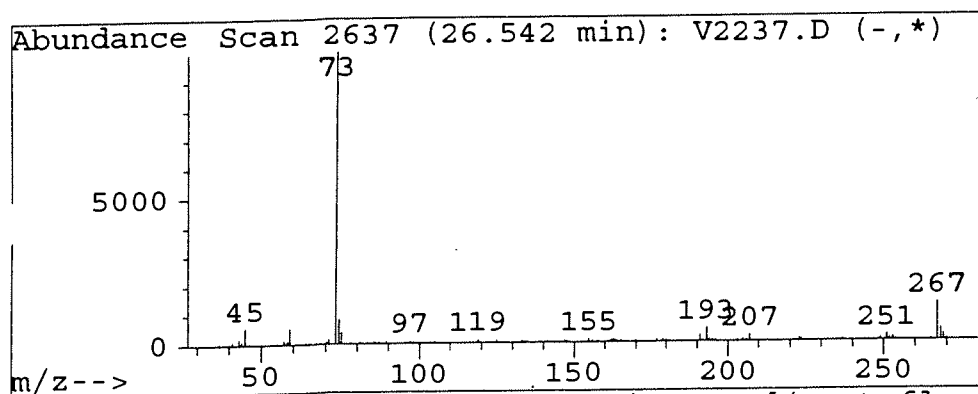
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2237.D
Acq Time : 6 Dec 93 11:51 am
Sample : G9311378*3
Misc : GW-4 / SEACOR.SLO / b#816 / 25mL

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
26.54	1.61 ug/l	278884	1,2-Dichlorobenzene-d4	27.24	
Hit# of	2	Tentative ID	Ref#	CAS#	Qual
1		Benzeneethanamine, N-[(pentafluorop	74573	055429-85-1	42
2		Benzoic acid, 2-[(trimethylsilyl)ox	39707	003789-85-3	36



004047

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2239.D
Acq Time : 6 Dec 93 1:08 pm
Sample : G9311378*6
Misc : Equip. Bk / SEACOR.SLO / b#816 / 25mL
Quant Time: Dec 6 13:41 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.85	53	130327	10.00	ug/l	-0.07
24) Fluorobenzene	12.96	96	1124163	10.00	ug/l	-0.09
43) 1,2-Dichlorobenzene-d4	27.24	150	429494	10.00	ug/l	-0.08
System Monitoring Compounds				%Recovery		
17) 1,2-Dichloroethane-d4	12.25	65	184738	9.87	ug/l	98.73%
32) Toluene-d8	16.76	98	970434	9.99	ug/l	99.92%
45) Bromofluorobenzene	23.50	95	560021	11.90	ug/l	119.00%
Target Compounds				Qvalue		
9) Methylene Chloride	7.92	84	25161	1.01	ug/l	# 1.5 1

BATCH # 816
DATE 12/14/93
ANALYST W

REVIEWED & APPROVED
BY AMS DATE 12/14/93

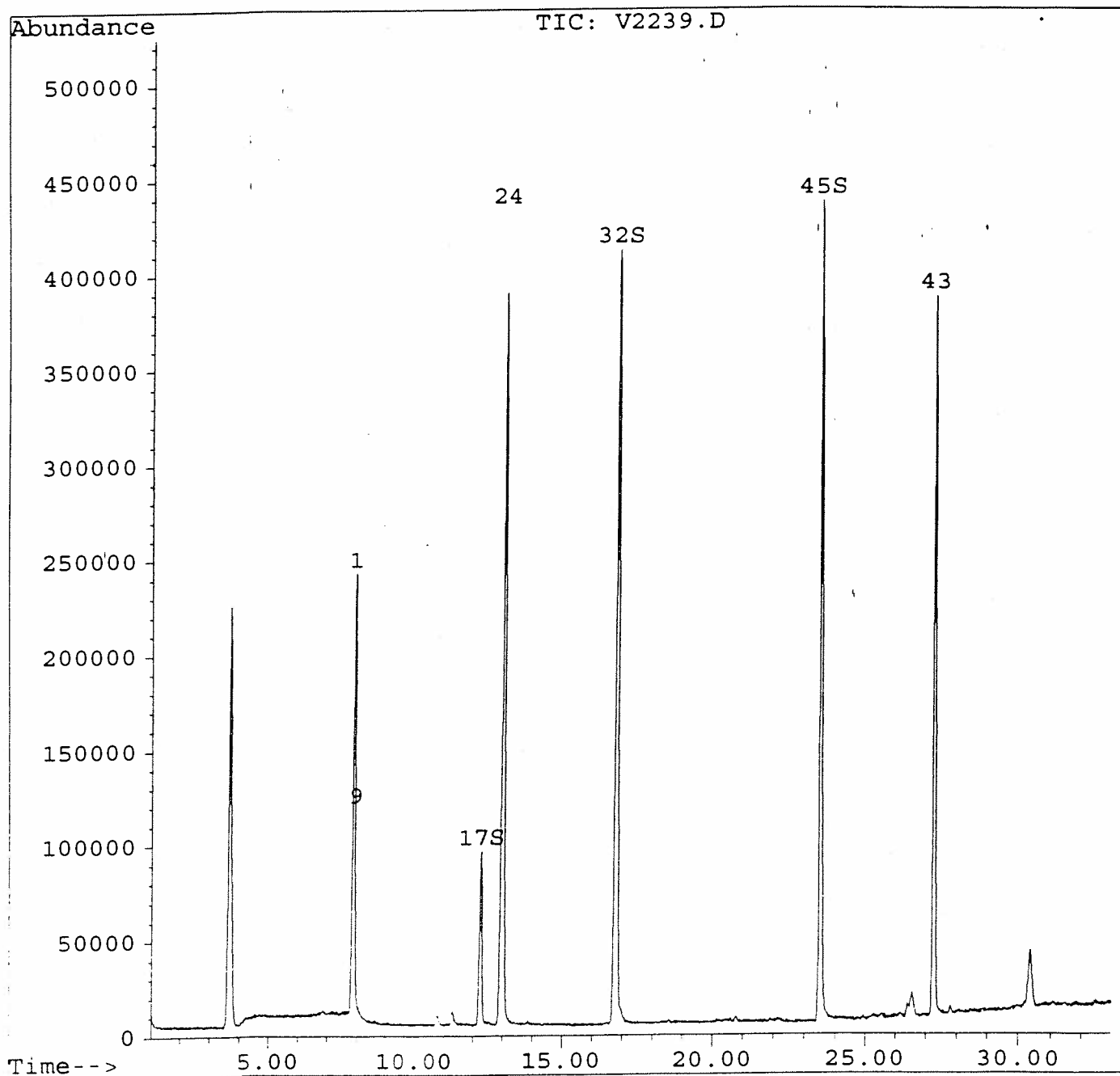
004048

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2239.D
Acq Time : 6 Dec 93 1:08 pm
Sample : G9311378*6
Misc : Equip. Bk / SEACOR.SLO / b#816 / 25mL
Quant Time: Dec 6 13:41 1993

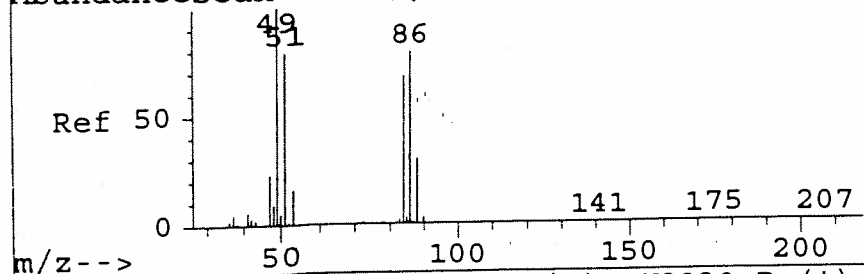
Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

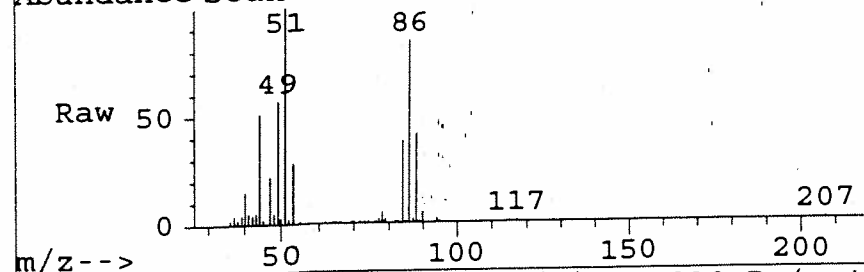


004049

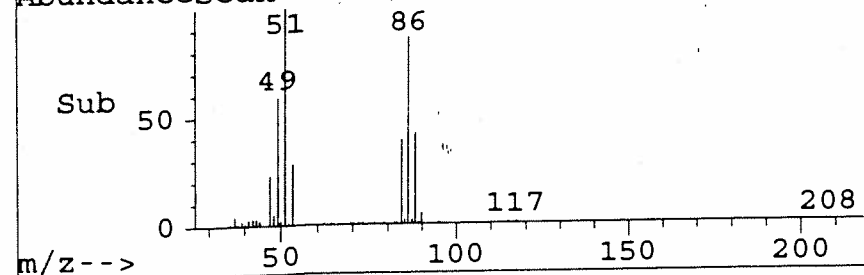
AbundanceScan 714 (7.942 min): V1122.D (-,*



AbundanceScan 713 (7.925 min): V2239.D (*)



AbundanceScan 713 (7.925 min): V2239.D (-,*



#9

Methylene Chloride

Concen: 1.01 ug/l

RT: 7.92 min Scan# 713

Delta R.T. -0.06 min

Lab File: V2239.D

Acq: 6 Dec 93 1:08 pm

Tgt Ion:84 Resp: 25161

Ion Ratio Lower Upper

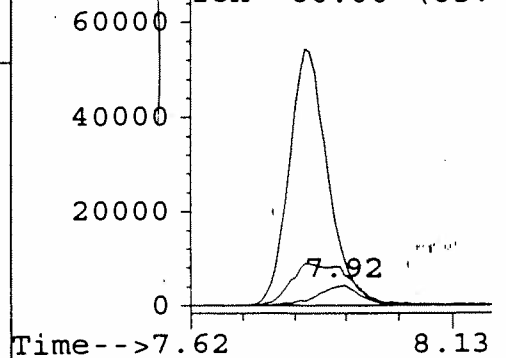
84 100

49 0.0 86.0 186.0#

86 0.0 12.0 112.0#

0 0.0 0.0 0.0

AbundanceIon 84.00 (83.
Ion 49.00 (48.
Ion 86.00 (85.



004050

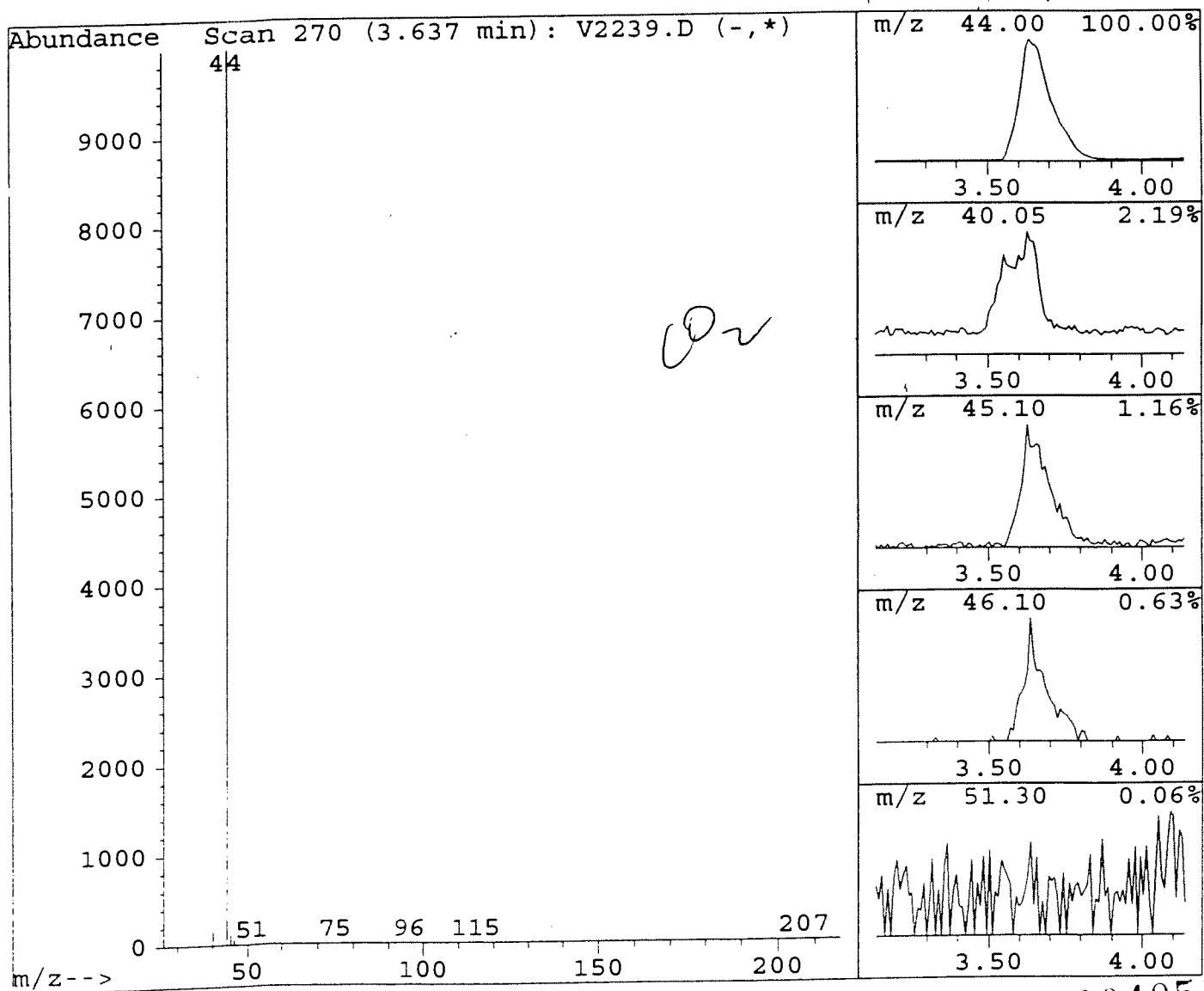
Library Search Compound Report

```
Data File   : C:\HPCHEM\1\DATA\DEC3\V2239.D
Acq Time    : 6 Dec 93 1:08 pm
Sample      : G9311378*6
Misc        : Equip. Bk / SEACOR.SLO / b#816 / 25mL
```

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

```
Method      : C:\HPCHEM\1\METHODS\524METH.M
Title       : method 524.2
Library     : C:\DATABASE\NBS75K.L
```

R.T.	Conc	Area	Relative to ISTD	R.T.	
3.64	12.38 ug/l	1554507	Methylene Chloride-d2	7.85	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	Unknown		0	000000-00-0	0



004051

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2240.D
 Acq Time : 6 Dec 93 1:46 pm
 Sample : G9311378*7
 Misc : Trip Blank / SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 6, 14:20 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.86	53	123756	10.00	ug/l	-0.06
24) Fluorobenzene	12.97	96	1083364	10.00	ug/l	-0.08
43) 1,2-Dichlorobenzene-d4	27.24	150	399985	10.00	ug/l	-0.08
System Monitoring Compounds				%Recovery		
17) 1,2-Dichloroethane-d4	12.25	65	168560	9.49	ug/l	94.87%
32) Toluene-d8	16.76	98	924360	9.88	ug/l	98.76%
45) Bromofluorobenzene	23.50	95	523440	11.94	ug/l	119.44%
Target Compounds				Qvalue		
9) Methylene Chloride	7.91	84	10010	0.42	ug/l	# / s. 1

BATCH # 816
 DATE 12/16/93
 ANALYST ma

REVIEWED & APPROVED
 BY AHS DATE 12/14/93

004052

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2240.D

Acq Time : 6 Dec 93 1:46 pm

Sample : G9311378*7

Misc : Trip Blank / SEACOR.SLO / b#816 / 25mL

Quant Time: Dec 6 14:20 1993

Operator: TERRI

Inst : VOA3

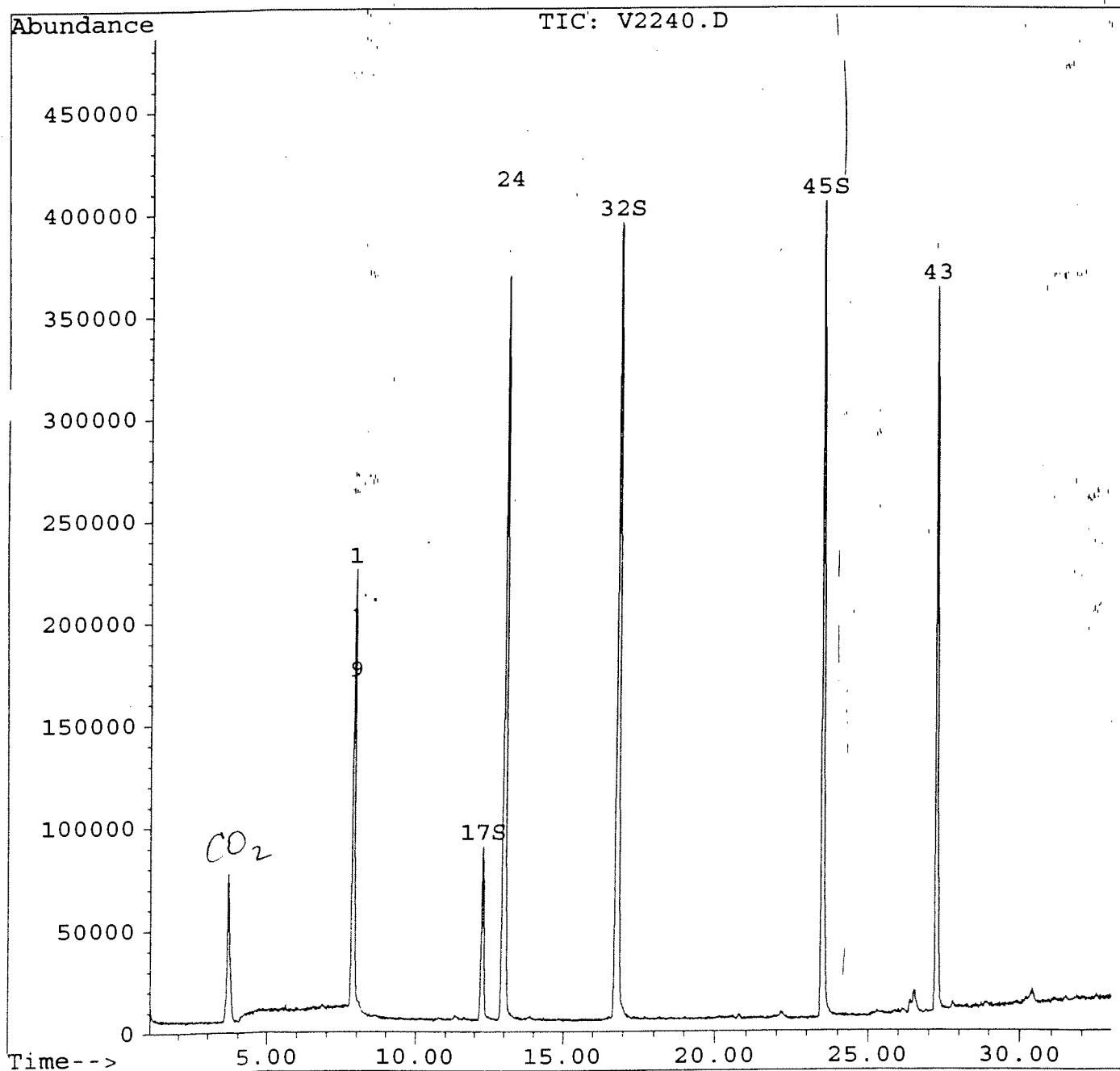
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M

Title : method 524.2

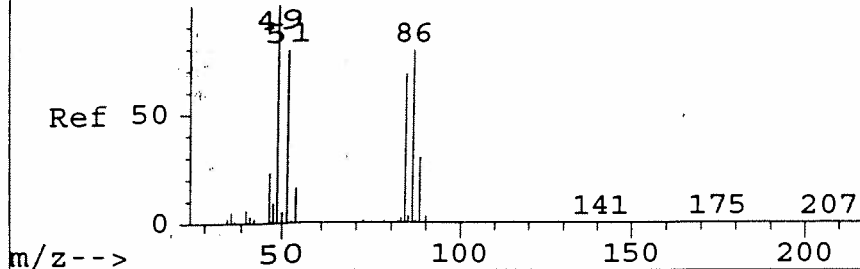
Last Update : Fri Dec 03 09:20:02 1993

Response via : Multiple Level Calibration

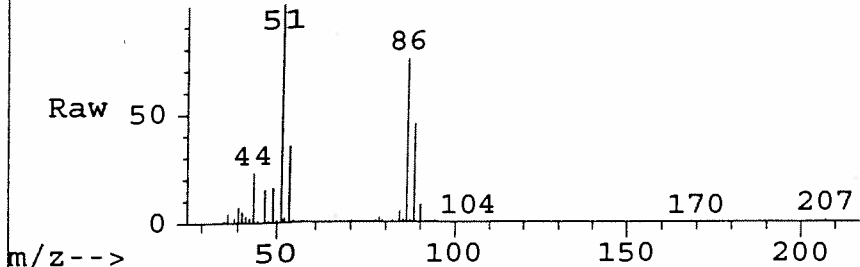


004053

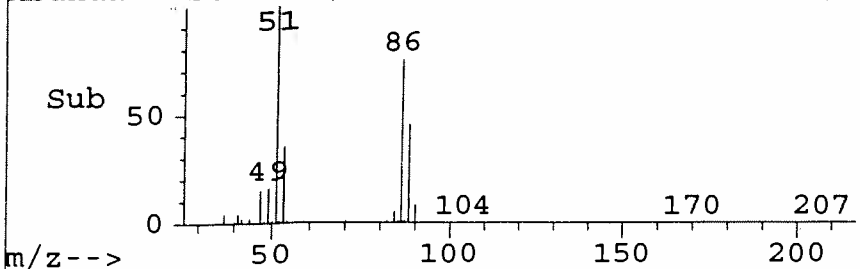
AbundanceScan 714 (7.942 min): V1122.D (-,*



AbundanceScan 711 (7.905 min): V2240.D (*)



AbundanceScan 711 (7.905 min): V2240.D (-,*



#9

Methylene Chloride

Concen: 0.42 ug/l

RT: 7.91 min Scan# 711

Delta R.T. -0.08 min

Lab File: V2240.D

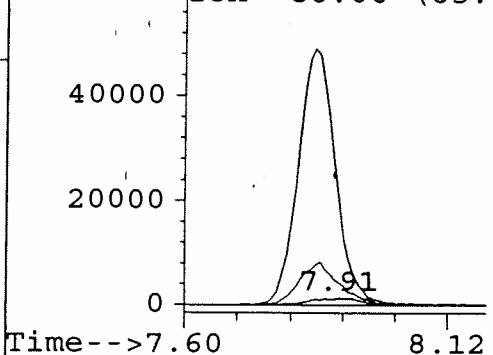
Acq: 6 Dec 93 1:46 pm /S.

Tgt Ion:84 Resp: 10010

Ion Ratio Lower Upper

84	100		
49	477.2	86.0	186.0#
86	2602.4	12.0	112.0#
0	0.0	0.0	0.0

Abundance	Ion	
84.00	(83.	
49.00	(48.	
86.00	(85.	



004054

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2240.D

Acq Time : 6 Dec 93 1:46 pm

Sample : G9311378*7

Misc : Trip Blank / SEACOR.SLO / b#816 / 25mL

Operator: TERRI

Inst : VOA3

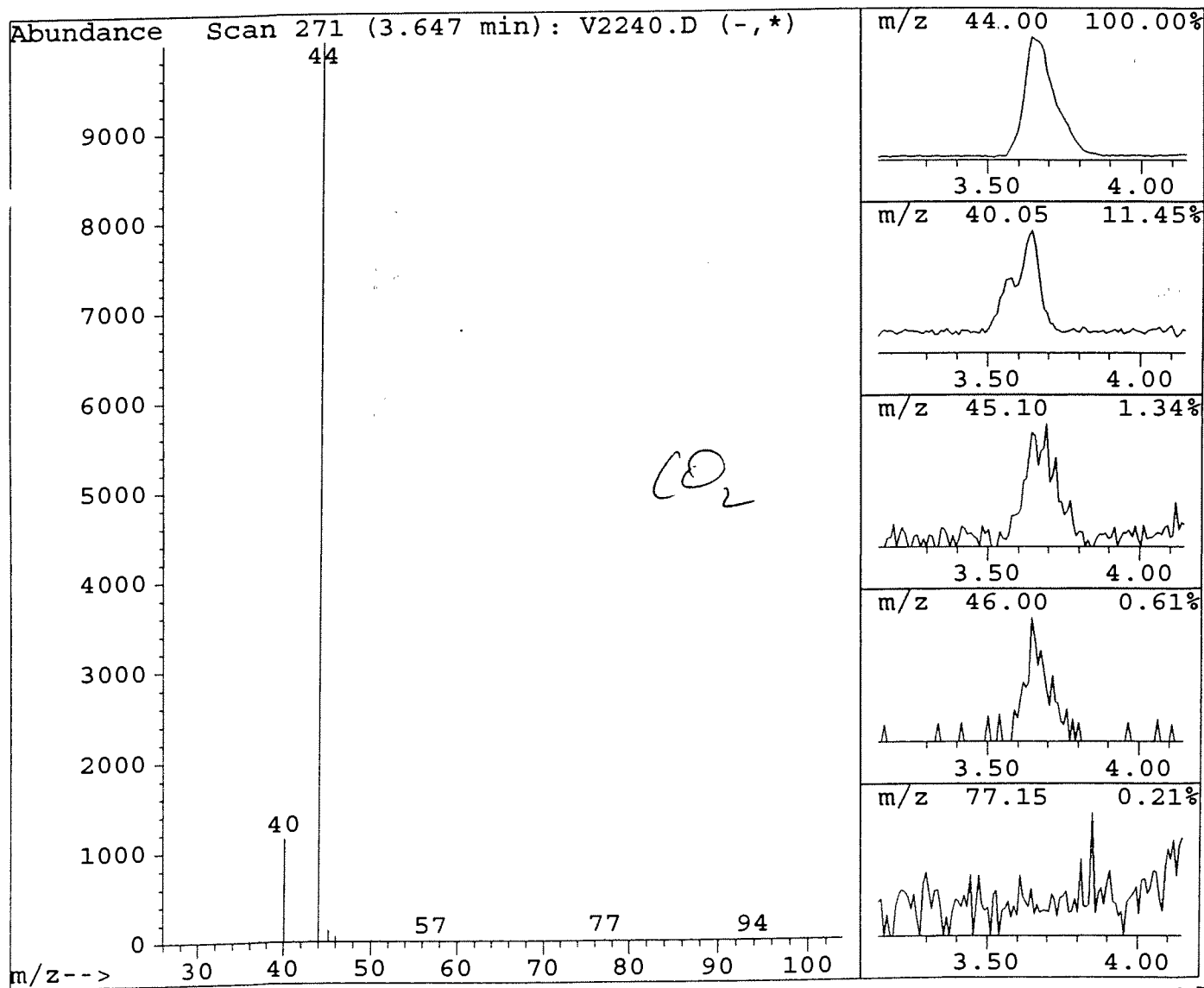
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M

Title : method 524.2

Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
3.65	4.38 ug/l	494136	Methylene Chloride-d2	7.86	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 Unknown			0	000000-00-0	0



004055

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2241.D
 Acq Time : 6 Dec 93 2:25 pm
 Sample : LAB CONTROL SAMPLE
 Misc : LCS816 / SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 6 15:34 1993

REVIEWED & APPROVED
 DATE 12/14/93
 BY AMS

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

-only 1265
 noted for 524.2

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

BATCH # 816
 DATE 12/6/93
 ANALYST

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.85	53	141554	10.00	ug/l	-0.07
24) Fluorobenzene	12.96	96	1201971	10.00	ug/l	-0.09
43) 1,2-Dichlorobenzene-d4	27.24	150	478950	10.00	ug/l	-0.07

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.25	65	194128	9.55	ug/l	95.52%
32) Toluene-d8	16.77	98	1019257	9.82	ug/l	98.16%
45) Bromofluorobenzene	23.50	95	590061	11.24	ug/l	112.44%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chloromethane	4.60	50	47286	2.66	ug/l	# 45
3) Vinyl Chloride	4.75	62	81630	2.91	ug/l	97
4) Bromomethane	5.43	94	98274	3.41	ug/l	95
5) Chloroethane	5.54	64	66364	3.13	ug/l	98
6) Trichlorofluoromethane	6.03	101	287318	4.01	ug/l	m 0
7) 1,1-Dichloroethene	7.09	96	119247	3.83	ug/l	84
9) Methylene Chloride	7.92	84	93437	3.45	ug/l	# 45
10) 1,2-Dichloroethene (trans-)	8.50	96	143566	3.80	ug/l	86
11) 1,1-Dichloroethane	9.26	63	279970	3.72	ug/l	99
12) 2,2-Dichloropropane	10.39	77	294782	4.17	ug/l	96
13) 1,2-Dichloroethene (cis-)	10.46	96	133160	3.62	ug/l	69
14) Bromochloromethane	11.12	130	64902	3.75	ug/l	# 50
15) Chloroform	10.78	83	288282	3.75	ug/l	99
16) 1,1-Dichloropropene	11.95	75	269390	3.89	ug/l	97
18) 1,2-Dichloroethane	12.44	62	90016	3.45	ug/l	92
19) 1,1,1-Trichloroethane	11.63	97	311555	3.89	ug/l	100
20) Carbon Tetrachloride	12.22	117	302538	4.03	ug/l	98
21) Benzene	12.56	78	401814	3.73	ug/l	100
22) Trichloroethene	13.85	130	182691	3.86	ug/l	95
23) 1,2-Dichloropropane	14.22	63	138863	3.60	ug/l	96
25) Dibromomethane	14.94	174	56967	3.76	ug/l	89
26) Bromodichloromethane	14.78	83	217294	3.55	ug/l	98
27) cis-1,3-Dichloropropene	16.11	75	82685	1.75	ug/l	97
28) trans-1,3-Dichloropropene	17.30	75	44537	1.66	ug/l	94
29) 1,3-Dichloropropane	18.31	76	105009	3.59	ug/l	95
30) Dibromochloromethane	19.01	129	107301	3.32	ug/l	96
31) Bromoform	22.92	173	51886	3.26	ug/l	99
33) Toluene	16.96	92	274551	3.94	ug/l	92
34) 1,1,2-Trichloroethane	17.71	97	61808	3.58	ug/l	100
35) Tetrachloroethene	18.56	164	179507	4.35	ug/l	93
36) 1,2-Dibromoethane	19.48	107	80461	3.72	ug/l	99
37) Chlorobenzene	20.48	112	284185	3.73	ug/l	99
38) 1,1,1,2-Tetrachloroethane	20.56	131	134402	3.68	ug/l	99
39) Ethylbenzene	20.60	106	158416	4.05	ug/l	m 75

(#) = qualifier out of range (m) = manual integration
 V2241.D 524METH.M Mon Dec 06 15:34:44 1993

VOA3

004056

Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2241.D
 Acq Time : 6 Dec 93 2:25 pm
 Sample : LAB CONTOL SAMPLE
 Misc : LCS816 / SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 6 15:34 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

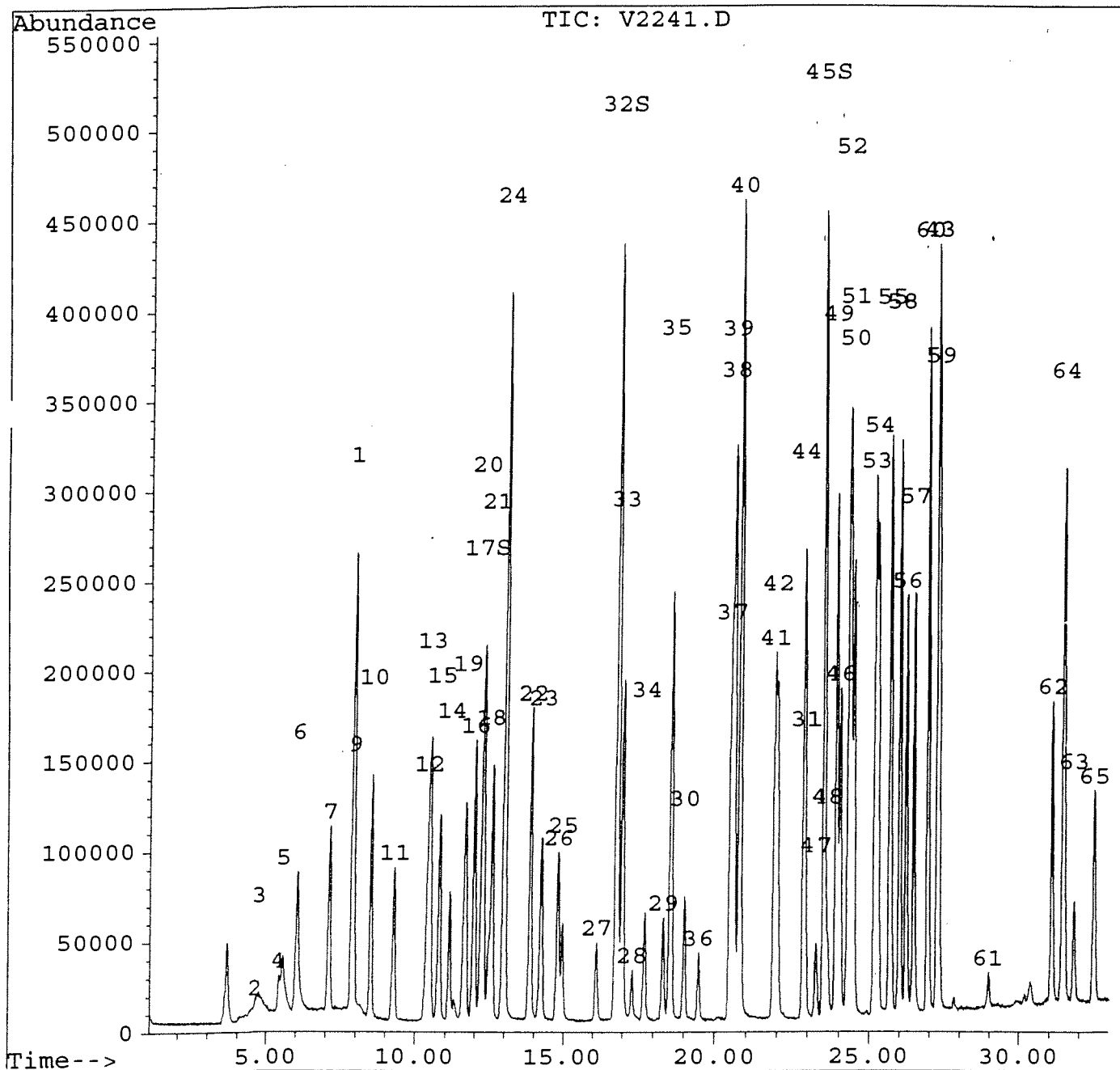
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
40) m,p-Xylenes	20.78	106	406814	7.63	ug/l	63
41) o-Xylene	21.91	106	181809	4.00	ug/l	66
42) Styrene	21.99	104	265452	3.69	ug/l	77
44) Isopropylbenzene	22.85	105	628543	4.61	ug/l	93
46) Bromobenzene	24.03	77	302726	4.65	ug/l	91
47) 1,1,2,2-Tetrachloroethane	23.25	83	78626	4.04	ug/l	97
48) 1,2,3-Trichloropropane	23.64	75	50716	3.81	ug/l m	35
49) n-Propylbenzene	23.90	91	826095	4.37	ug/l	95
50) 2-Chlorotoluene	24.47	91	481754	3.88	ug/l	98
51) 4-Chlorotoluene	24.47	91	481754	4.73	ug/l	92
52) 1,3,5-Trimethylbenzene	24.30	105	465877	4.25	ug/l	94
53) Tert-Butylbenzene	25.17	119	524055	4.46	ug/l	96
54) 1,2,4-Trimethylbenzene	25.27	105	454960	4.19	ug/l	82
55) Sec-Butylbenzene	25.69	105	788524	4.75	ug/l	96
56) 1,3-Dichlorobenzene	26.22	146	260068	4.54	ug/l	95
57) 1,4-Dichlorobenzene	26.47	146	247336	4.39	ug/l	91
58) p-Isopropyltoluene	26.00	119	589824	4.48	ug/l	98
59) 1,2-Dichlorobenzene	27.30	146	195389	4.33	ug/l	96
60) n-Butylbenzene	26.93	91	701521	4.72	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	28.97	157	12411	3.68	ug/l #	68
62) 1,2,4-Trichlorobenzene	31.08	180	154893	4.35	ug/l	97
63) Naphthalene	31.82	128	135860	3.26	ug/l	98
64) Hexachlorobutadiene	31.46	225	185361	4.89	ug/l	95
65) 1,2,3-Trichlorobenzene	32.49	180	117676	4.26	ug/l	96

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2241.D
 Acq Time : 6 Dec 93 2:25 pm
 Sample : LAB CONTROL SAMPLE
 Misc : LCS816 / SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 6 15:34 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration



004058

Data File : C:\HPCHEM\1\DATA\DEC3\V2242.D

Acq Time : 6 Dec 93 3:03 pm

Sample : LAB CONTOL SAMPLE

Misc : LCS816 / SEACOR.SLO / b#816 / 25mL

Quant Time: Dec 7 8:56 1993

REVIEWED & APPROVED
AMS

DATE

Operator: TERRI

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M

Title : method 524.2

Last Update : Fri Dec 03 09:20:02 1993

Response via : Multiple Level Calibration

BATCH # 816

DATE 12/7/93

ANALYST m

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.85	53	140759	10.00	ug/l	-0.07
24) Fluorobenzene	12.96	96	1253292	10.00	ug/l	-0.08
43) 1,2-Dichlorobenzene-d4	27.24	150	491584	10.00	ug/l	-0.08
System Monitoring Compounds						%Recovery
17) 1,2-Dichloroethane-d4	12.24	65	191789	9.49	ug/l	94.90%
32) Toluene-d8	16.76	98	1058136	9.77	ug/l	97.73%
45) Bromofluorobenzene	23.50	95	610074	11.33	ug/l	113.27%
Target Compounds						Qvalue
2) Chloromethane	4.60	50	47363	2.68	ug/l	86
3) Vinyl Chloride	4.79	62	87917	3.15	ug/l	99
4) Bromomethane	5.43	94	102322	3.57	ug/l	90
5) Chloroethane	5.54	64	67422	3.20	ug/l	100
6) Trichlorofluoromethane	6.03	101	297098	4.17	ug/l m	0
7) 1,1-Dichloroethene	7.08	96	119221	3.85	ug/l	83
9) Methylene Chloride	7.92	84	94722	3.52	ug/l #	47
10) 1,2-Dichloroethene (trans-	8.49	96	140159	3.73	ug/l	85
11) 1,1-Dichloroethane	9.26	63	273078	3.65	ug/l	99
12) 2,2-Dichloropropane	10.38	77	288850	4.11	ug/l	96
13) 1,2-Dichloroethene (cis-)	10.46	96	134555	3.68	ug/l	69
14) Bromochloromethane	11.13	130	66394	3.86	ug/l #	50
15) Chloroform	10.78	83	282292	3.69	ug/l	99
16) 1,1-Dichloropropene	11.96	75	265764	3.86	ug/l	99
18) 1,2-Dichloroethane	12.44	62	91999	3.55	ug/l	93
19) 1,1,1-Trichloroethane	11.64	97	312577	3.92	ug/l	98
20) Carbon Tetrachloride	12.22	117	297126	3.98	ug/l	97
21) Benzene	12.56	78	395863	3.70	ug/l	100
22) Trichloroethene	13.86	130	179670	3.81	ug/l	95
23) 1,2-Dichloropropane	14.21	63	141357	3.69	ug/l	99
25) Dibromomethane	14.94	174	58031	3.68	ug/l	87
26) Bromodichloromethane	14.79	83	215375	3.37	ug/l	96
27) cis-1,3-Dichloropropene	16.10	75	84787	1.72	ug/l	98
28) trans-1,3-Dichloropropene	17.29	75	44782	1.60	ug/l	95
29) 1,3-Dichloropropane	18.32	76	109882	3.60	ug/l	96
30) Dibromochloromethane	19.00	129	110091	3.27	ug/l	97
31) Bromoform	22.90	173	53893	3.25	ug/l	98
33) Toluene	16.96	92	269924	3.71	ug/l	89
34) 1,1,2-Trichloroethane	17.71	97	64438	3.58	ug/l	99
35) Tetrachloroethene	18.55	164	175502	4.08	ug/l	93
36) 1,2-Dibromoethane	19.47	107	84555	3.74	ug/l	97
37) Chlorobenzene	20.48	112	290027	3.65	ug/l	99
38) 1,1,1,2-Tetrachloroethane	20.55	131	134110	3.52	ug/l	98
39) Ethylbenzene	20.60	106	154956	3.80	ug/l m	73

(#)= qualifier out of range (m) = manual integration

V2242.D 524SHORT.M

Tue Dec 07 08:57:08 1993

VOA3

004059

Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2242.D
 Acq Time : 6 Dec 93 3:03 pm
 Sample : LAB CONTOL SAMPLE
 Misc : LCS816 / SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 7 8:56 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
40) m,p-Xylenes	20.77	106	398202	7.16	ug/l	61
41) o-Xylene	21.89	106	181491	3.83	ug/l	68
42) Styrene	21.99	104	264202	3.53	ug/l	76
44) Isopropylbenzene	22.86	105	628396	4.49	ug/l	93
46) Bromobenzene	24.03	77	304681	4.56	ug/l	91
47) 1,1,2,2-Tetrachloroethane	23.25	83	80847	4.05	ug/l	95
48) 1,2,3-Trichloropropane	23.63	75	51331	3.76	ug/l m	35
49) n-Propylbenzene	23.90	91	812044	4.19	ug/l	95
50) 2-Chlorotoluene	24.36	91	527534	4.14	ug/l m	98
51) 4-Chlorotoluene	24.46	91	465348	4.45	ug/l	92
52) 1,3,5-Trimethylbenzene	24.29	105	453457	4.03	ug/l	94
53) Tert-Butylbenzene	25.16	119	519620	4.31	ug/l	97
54) 1,2,4-Trimethylbenzene	25.26	105	447023	4.01	ug/l	82
55) Sec-Butylbenzene	25.68	105	777772	4.57	ug/l	95
56) 1,3-Dichlorobenzene	26.21	146	257831	4.38	ug/l	95
57) 1,4-Dichlorobenzene	26.46	146	248392	4.29	ug/l	92
58) p-Isopropyltoluene	25.99	119	579349	4.29	ug/l	99
59) 1,2-Dichlorobenzene	27.29	146	199435	4.31	ug/l	96
60) n-Butylbenzene	26.92	91	686772	4.50	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	28.96	157	13145	3.79	ug/l	82
62) 1,2,4-Trichlorobenzene	31.08	180	152207	4.17	ug/l	98
63) Naphthalene	31.81	128	144161	3.37	ug/l	98
64) Hexachlorobutadiene	31.47	225	177289	4.56	ug/l	92
65) 1,2,3-Trichlorobenzene	32.48	180	118602	4.19	ug/l	97

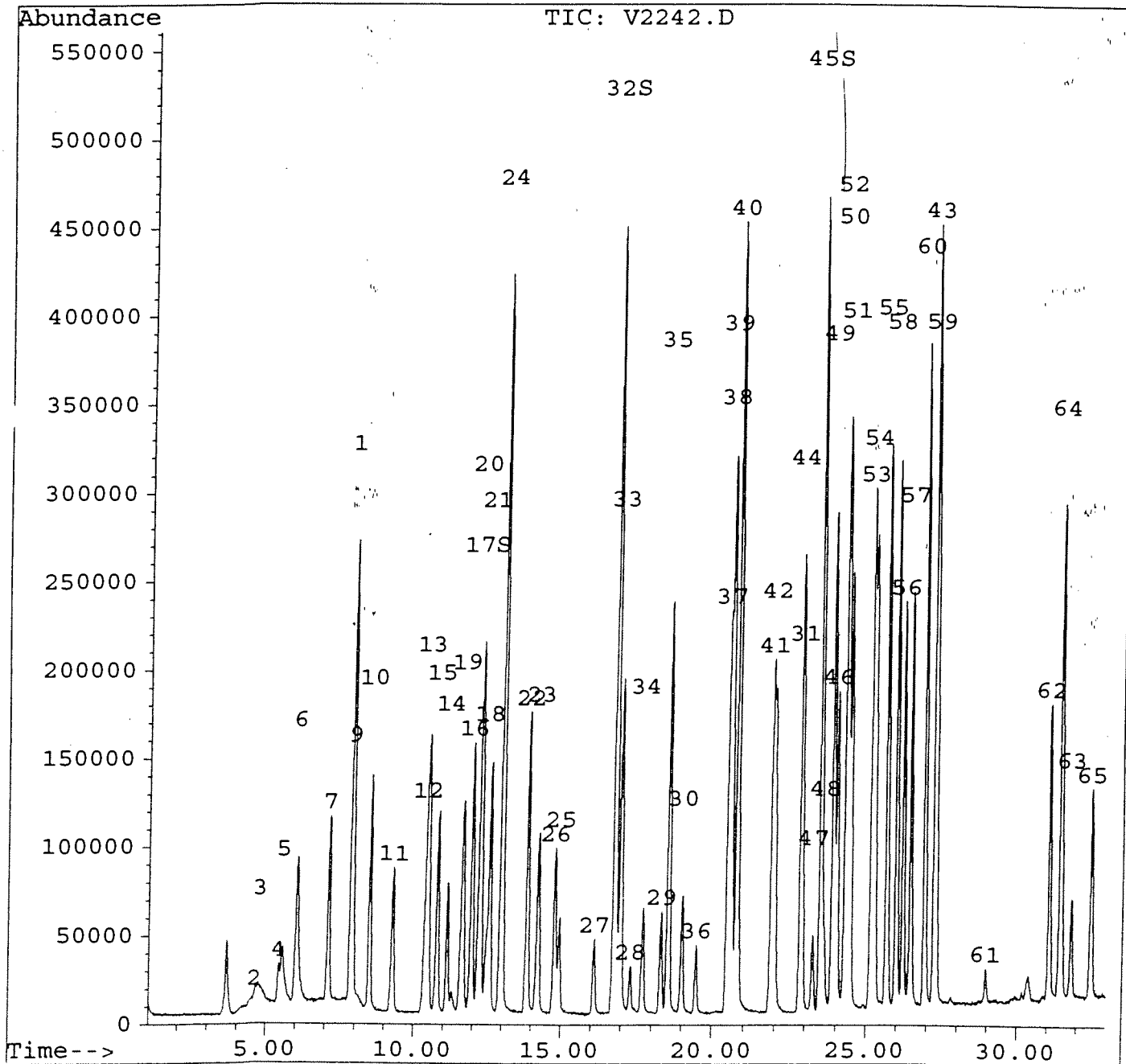
004060

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2242.D
 Acq Time : 6 Dec 93 3:03 pm
 Sample : LAB CONTOL SAMPLE
 Misc : LCS816 / SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 7 8:56 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC6\V2243.D
Acq Time : 6 Dec 93 3:52 pm
Sample : G9311378*5
Misc : GW-6 / SEACOR.SLO / b#816 / 25mL
Quant Time: Dec 6 16:25 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.85	53	103451	10.00	ug/l	-0.07
24) Fluorobenzene	12.96	96	934272	10.00	ug/l	-0.09
43) 1,2-Dichlorobenzene-d4	27.24	150	337117	10.00	ug/l	-0.08
System Monitoring Compounds				%Recovery		
17) 1,2-Dichloroethane-d4	12.23	65	140712	9.47	ug/l	94.74%
32) Toluene-d8	16.76	98	792645	9.82	ug/l	98.20%
45) Bromofluorobenzene	23.50	95	449338	12.16	ug/l	121.65%
Target Compounds				Qvalue		
9) Methylene Chloride	7.91	84	15062	0.76	ug/l #	1
13) 1,2-Dichloroethene (cis-)	10.46	96	11083	0.41	ug/l	0.4 84
15) Chloroform	10.77	83	21168	0.38	ug/l	0.4 99
22) Trichloroethene	13.84	130	41064	1.19	ug/l	1.2 90
35) Tetrachloroethene	18.55	164	37183	1.16	ug/l	1.2 91
61) 1,2-Dibromo-3-Chloropropan	28.98	157	614	0.26	ug/l #	35
62) 1,2,4-Trichlorobenzene	31.08	180	6158	0.25	ug/l	0.3 94
63) Naphthalene	31.81	128	10383	0.35	ug/l	0.4 91
65) 1,2,3-Trichlorobenzene	32.50	180	6167	0.32	ug/l	0.3 98

BATCH # 816
DATE 12/6/93
ANALYST Pa

REVIEWED & APPROVED
BY AMS DATE 12/14/93

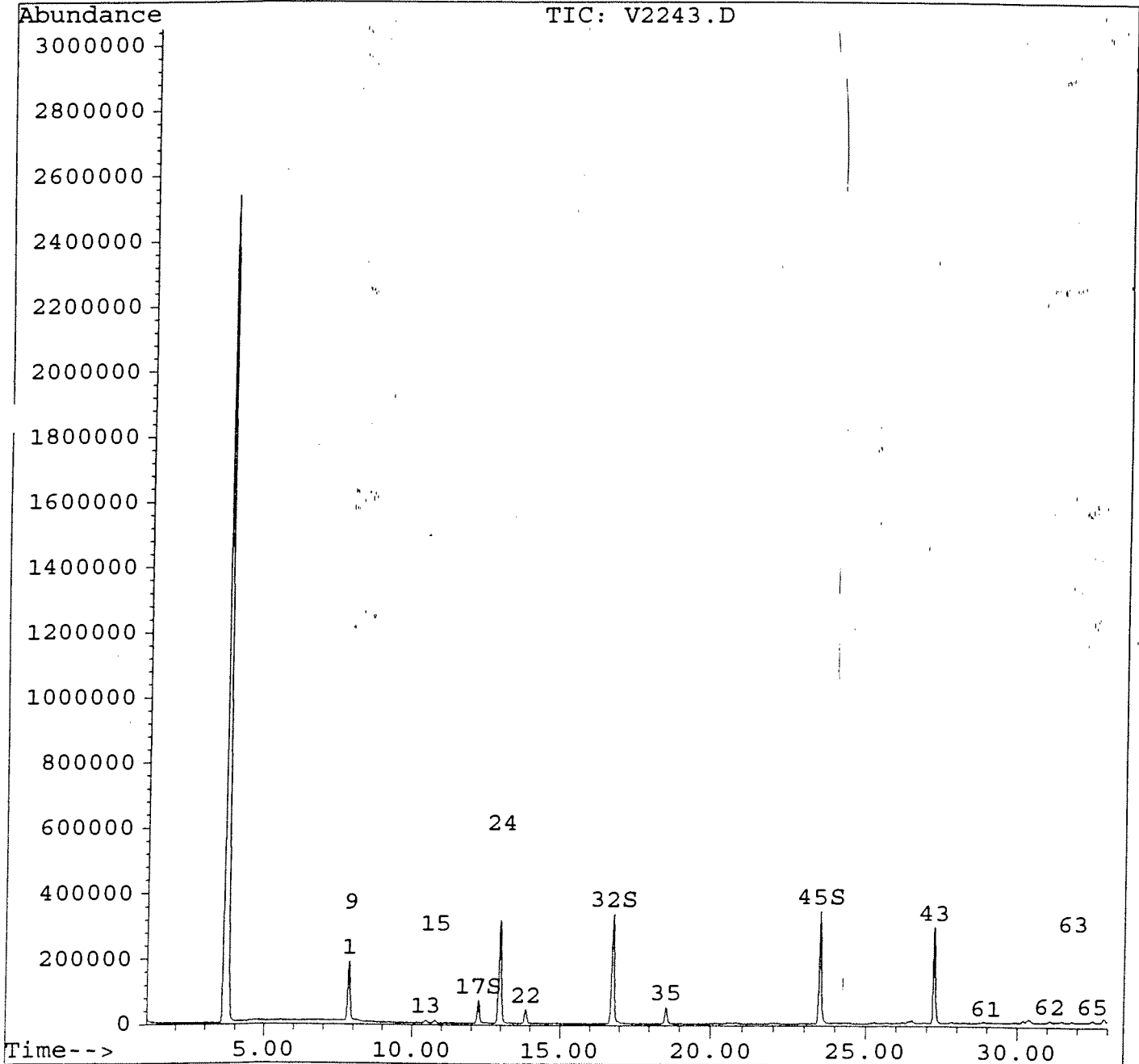
004062

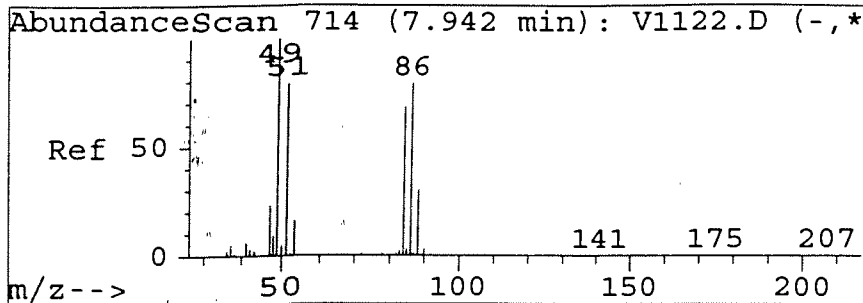
Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC6\V2243.D
Acq Time : 6 Dec 93 3:52 pm
Sample : G9311378*5
Misc : GW-6 / SEACOR.SLO / b#816 / 25mL
Quant Time: Dec 6 16:25 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

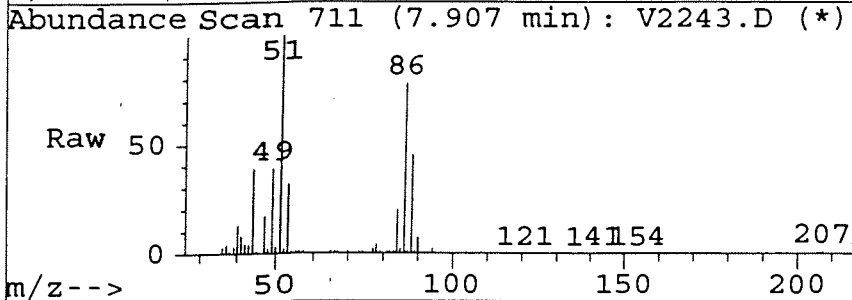
Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration



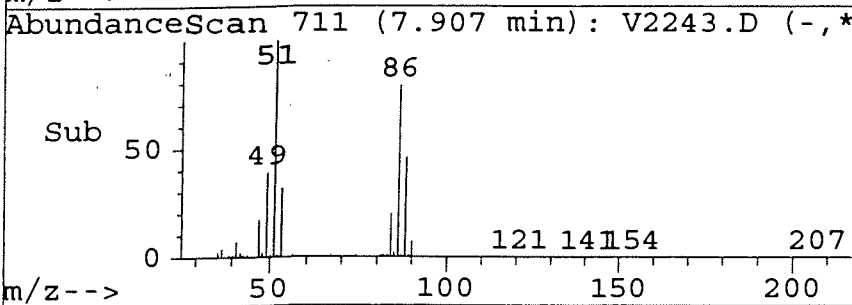
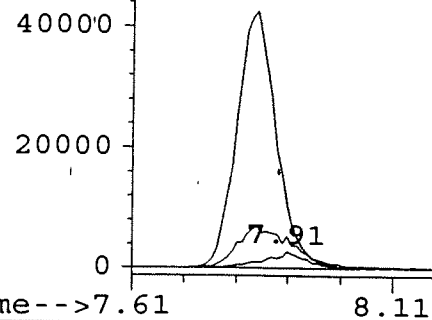


#9
Methylene Chloride
Concen: 0.76 ug/l
RT: 7.91 min Scan# 711
Delta R.T. -0.08 min
Lab File: V2243.D
Acq: 6 Dec 93 3:52 pm

Tgt Ion:	84	Resp:	15062
Ion	Ratio	Lower	Upper
84	100		
49	0.0	86.0	186.0#
86	0.0	12.0	112.0#
0	0.0	0.0	0.0



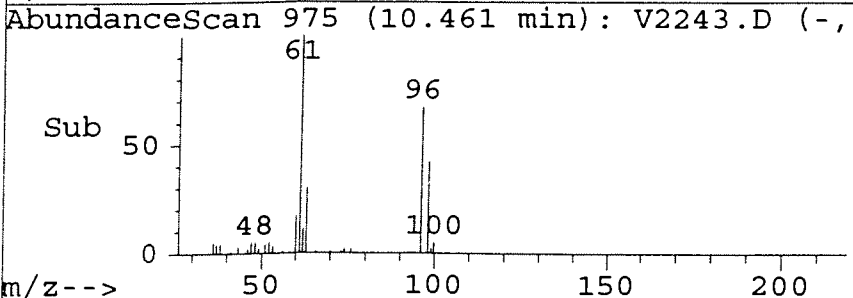
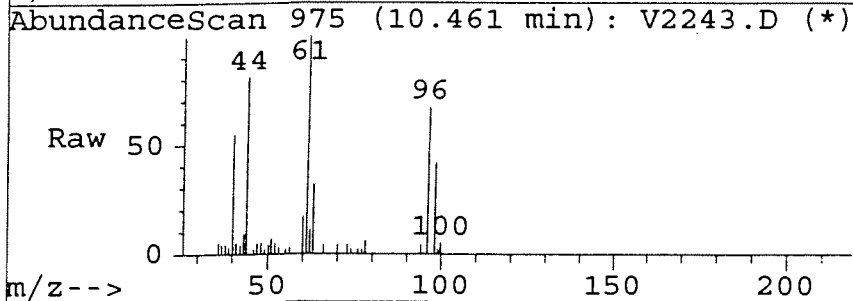
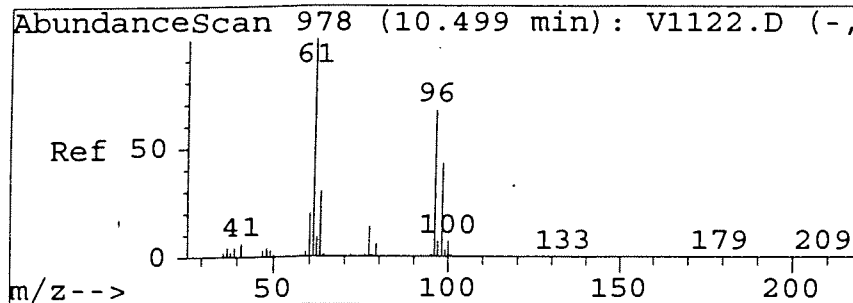
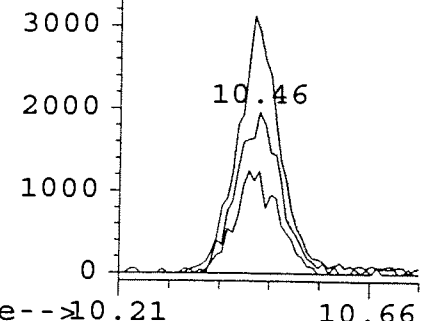
Abundance	Ion	84.00 (83.
	Ion	49.00 (48.
	Ion	86.00 (85.

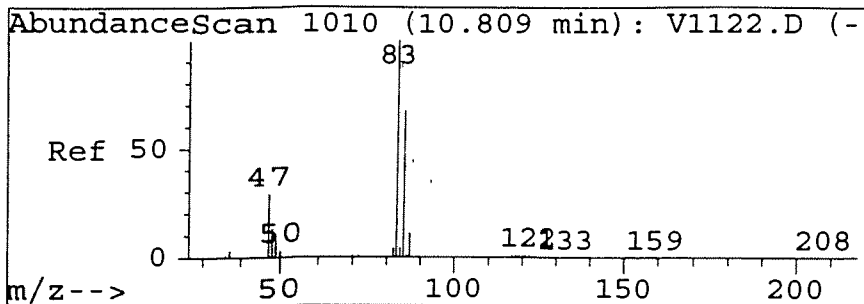


#13
1,2-Dichloroethene (cis-)
Concen: 0.41 ug/l
RT: 10.46 min Scan# 975
Delta R.T. -0.09 min
Lab File: V2243.D
Acq: 6 Dec 93 3:52 pm

Tgt Ion:	96	Resp:	11083
Ion	Ratio	Lower	Upper
96	100		
61	147.9	61.5	184.5
98	61.6	32.5	97.5
0	0.0	0.0	0.0

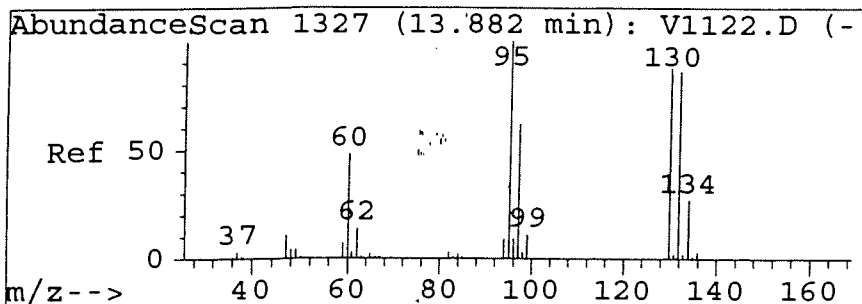
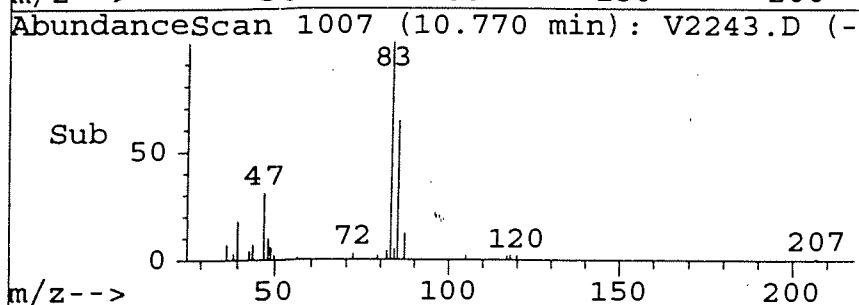
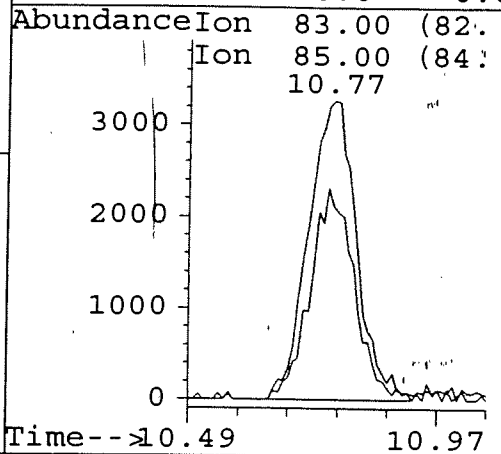
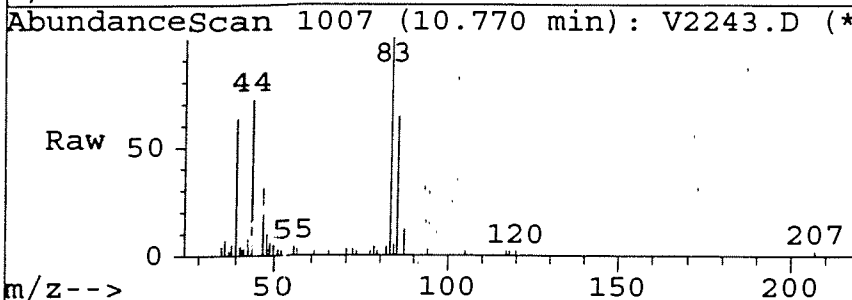
Abundance	Ion	96.00 (95.
	Ion	61.00 (60.
	Ion	98.00 (97.





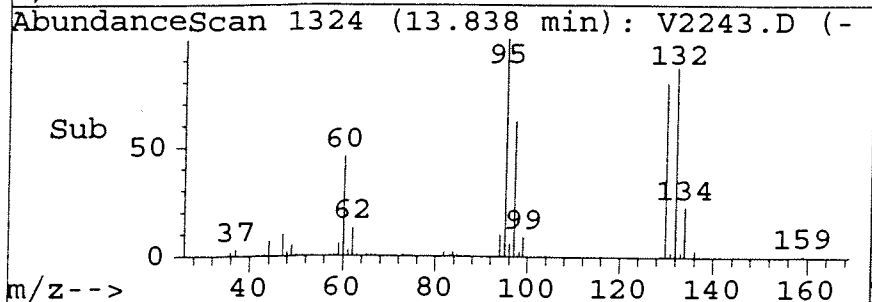
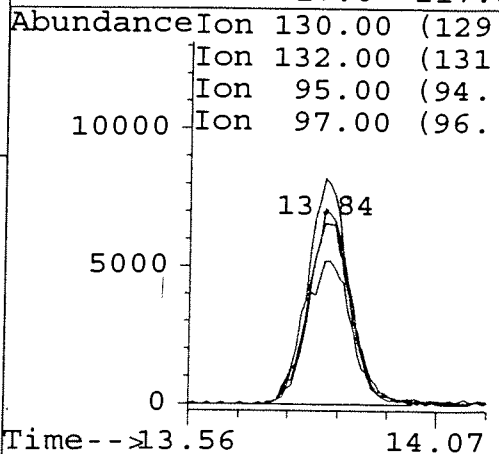
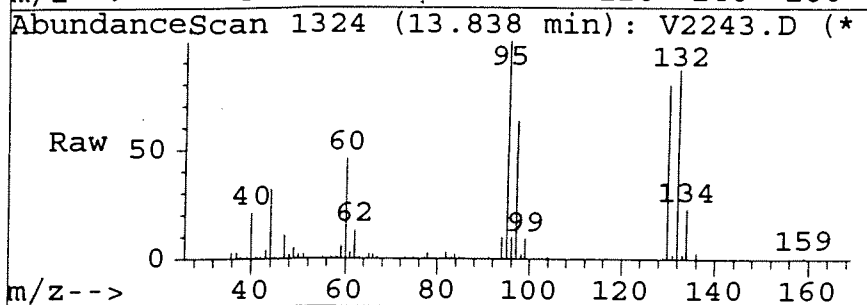
#15
Chloroform
Concen: 0.38 ug/l
RT: 10.77 min Scan# 1007
Delta R.T. -0.09 min
Lab File: V2243.D
Acq: 6 Dec 93 3:52 pm

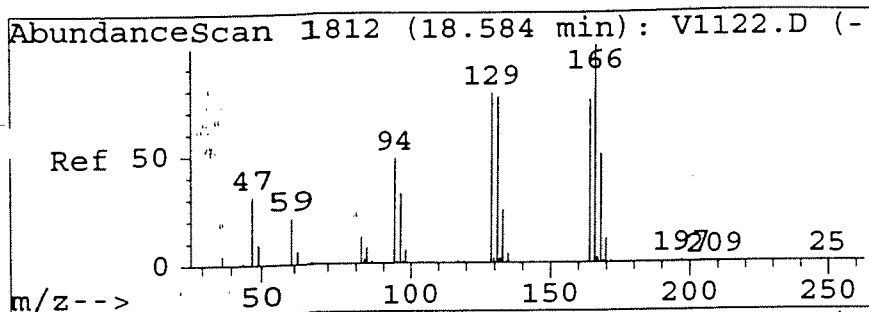
Tgt Ion:	83	Resp:	21168
Ion	Ratio	Lower	Upper
83	100		
85	64.8	15.6	115.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#22
Trichloroethene
Concen: 1.19 ug/l
RT: 13.84 min Scan# 1324
Delta R.T. -0.10 min
Lab File: V2243.D
Acq: 6 Dec 93 3:52 pm

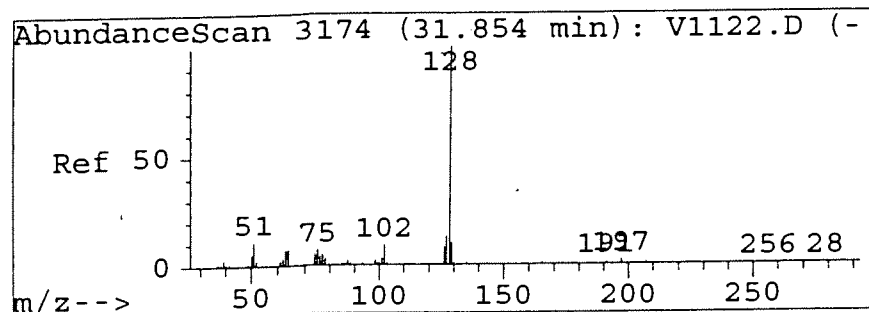
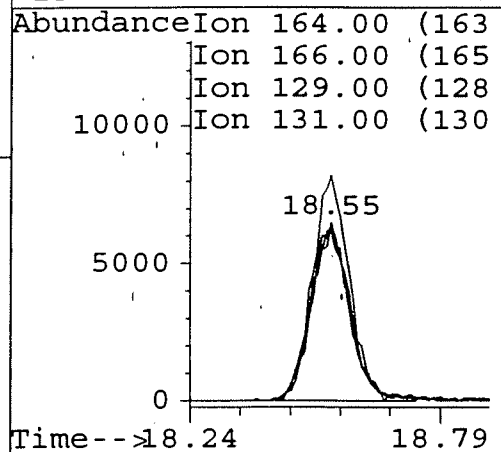
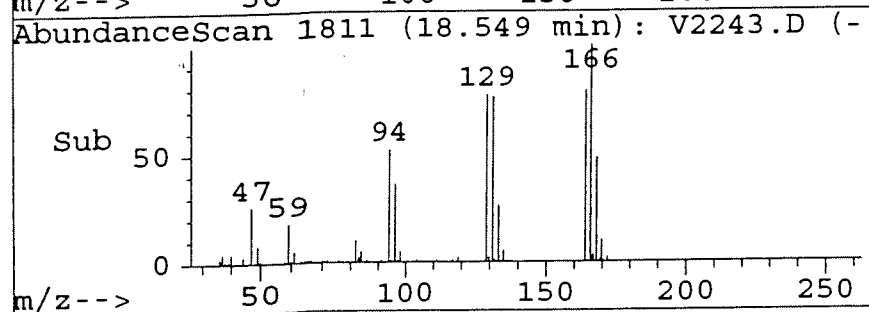
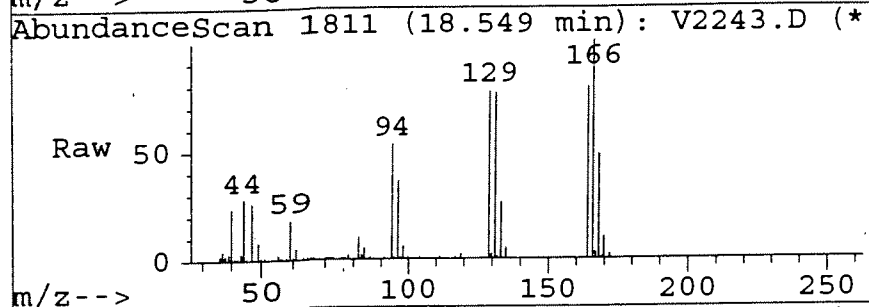
Tgt Ion:	130	Resp:	41064
Ion	Ratio	Lower	Upper
130	100		
132	102.6	48.4	148.4
95	120.7	59.0	159.0
97	80.5	17.0	117.0





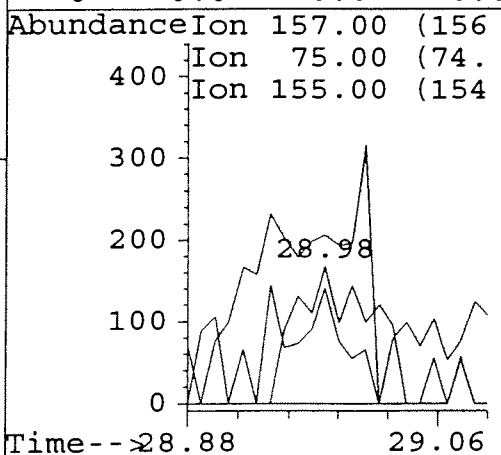
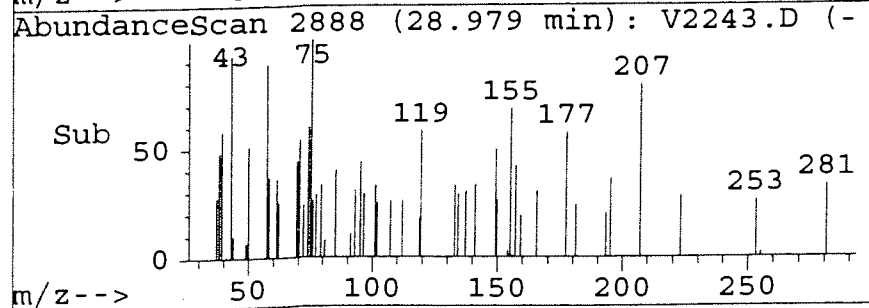
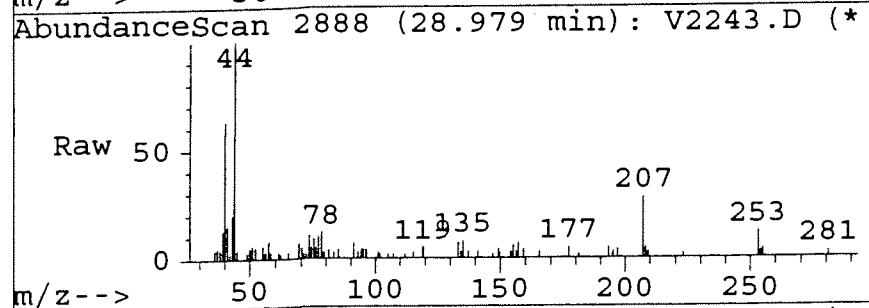
#35
Tetrachloroethene
Concen: 1.16 ug/l
RT: 18.55 min Scan# 1811
Delta R.T. -0.09 min
Lab File: V2243.D
Acq: 6 Dec 93 3:52 pm

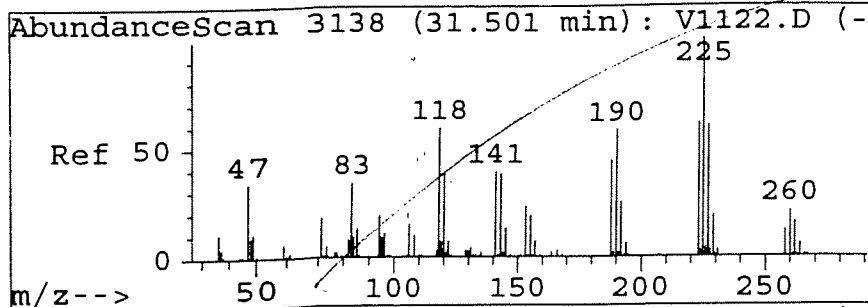
Tgt Ion:	164	Resp:	37183
Ion	Ratio	Lower	Upper
164	100		
166	124.2	84.0	184.0
129	100.7	40.0	140.0
131	97.8	40.0	140.0



#61
1,2-Dibromo-3-Chloropropane
Concen: 0.26 ug/l
RT: 28.98 min Scan# 2888
Delta R.T. -0.07 min
Lab File: V2243.D
Acq: 6 Dec 93 3:52 pm

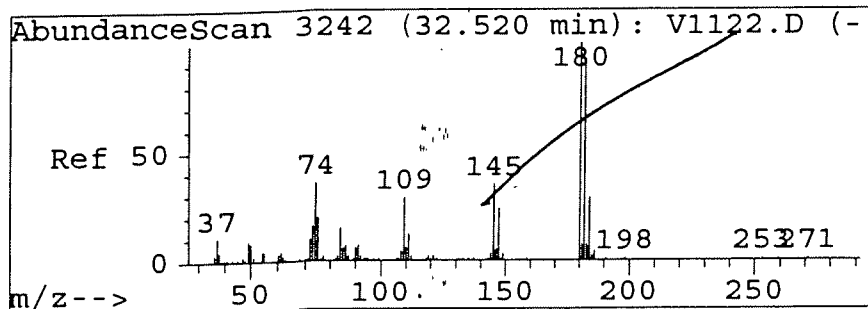
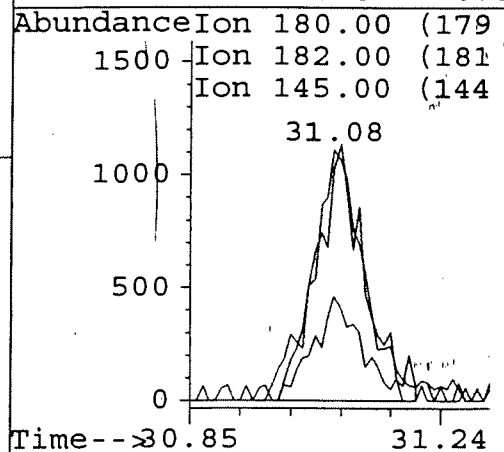
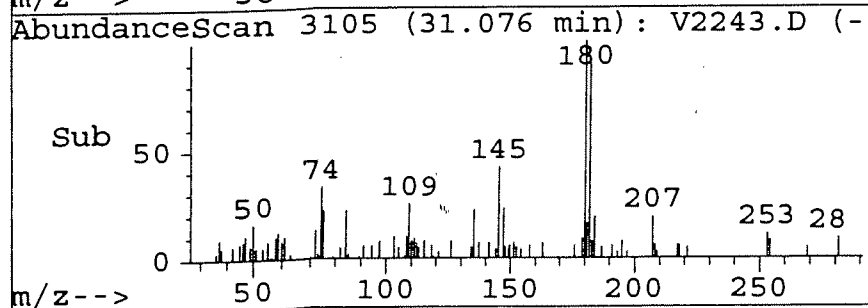
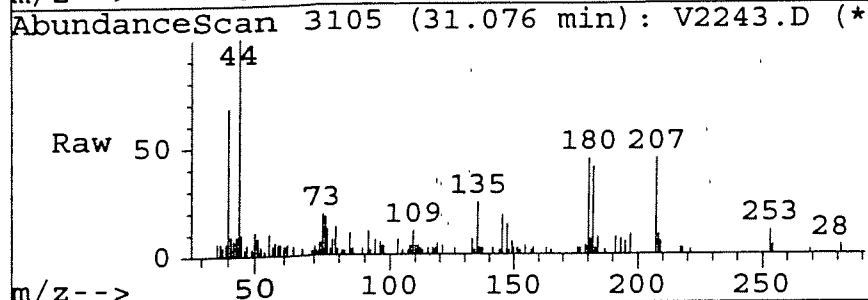
Tgt Ion:	157	Resp:	614
Ion	Ratio	Lower	Upper
157	100		
75	0.0	40.0	120.0#
155	40.6	35.0	105.0
0	0.0	0.0	0.0





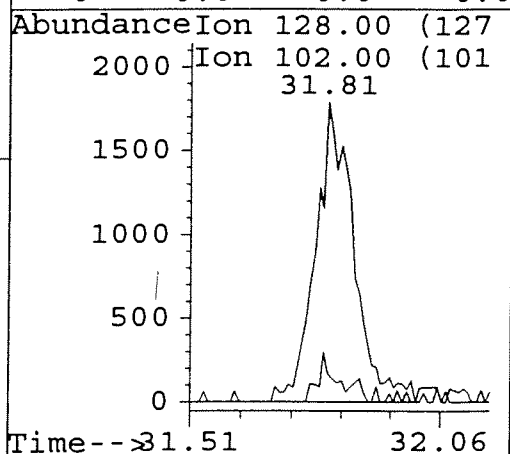
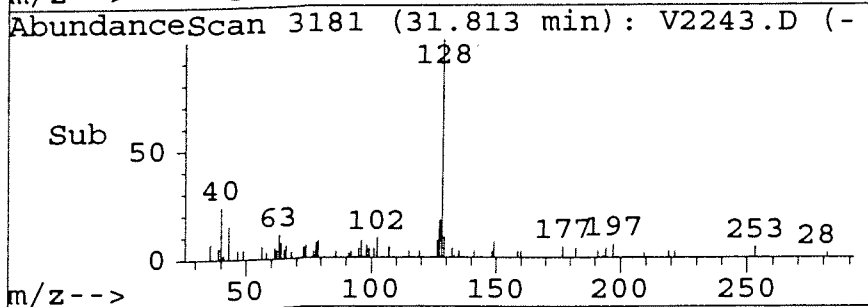
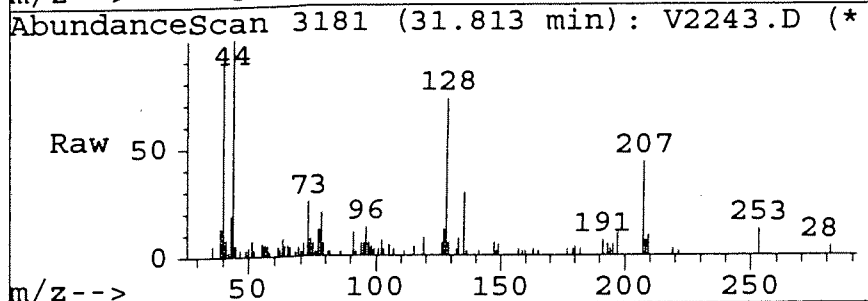
#62
1,2,4-Trichlorobenzene
Concen: 0.25 ug/l
RT: 31.08 min Scan# 3105
Delta R.T. -0.09 min
Lab File: V2243.D
Acq: 6 Dec 93 3:52 pm

Tgt Ion	Ratio	Lower	Upper
180	100		
182	92.9	49.0	147.0
145	38.7	16.5	49.5
0	0.0	0.0	0.0

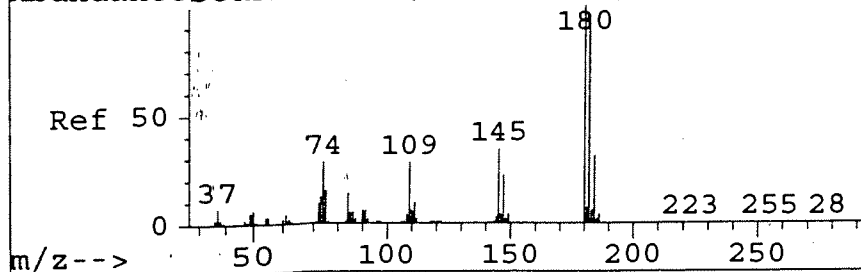


#63
Naphthalene
Concen: 0.35 ug/l
RT: 31.81 min Scan# 3181
Delta R.T. -0.10 min
Lab File: V2243.D
Acq: 6 Dec 93 3:52 pm

Tgt Ion	Ratio	Lower	Upper
128	100		
102	6.7	2.5	17.5
0	0.0	0.0	0.0
0	0.0	0.0	0.0



AbundanceScan 3130 (31.356 min): 0201002.D



#65

1,2,3-Trichlorobenzene

Concen: 0.32 ug/l

RT: 32.50 min Scan# 3252

Delta R.T. -0.10 min

Lab File: V2243.D

Acq: 6 Dec 93 3:52 pm

Tgt Ion:180 Resp: 6167

Ion Ratio Lower Upper

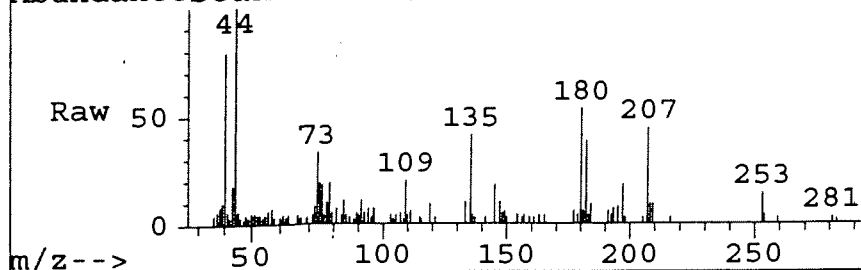
180 100

182 97.6 49.0 147.0

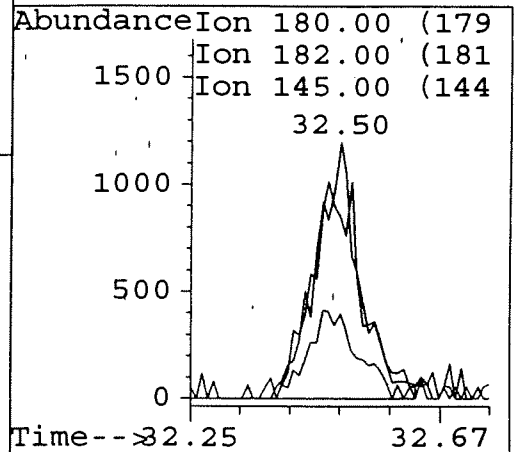
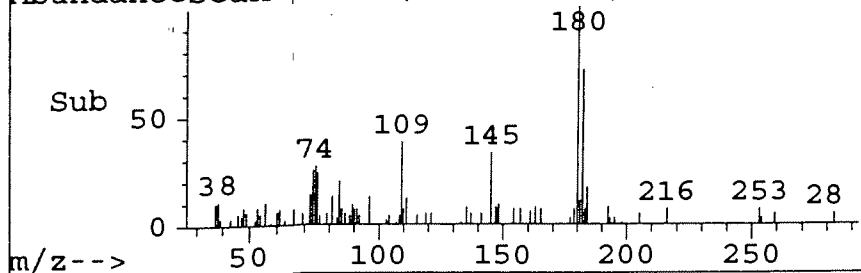
145 38.5 17.0 51.0

0 0.0 0.0 0.0

AbundanceScan 3252 (32.500 min): V2243.D (*)



AbundanceScan 3252 (32.500 min): V2243.D (-



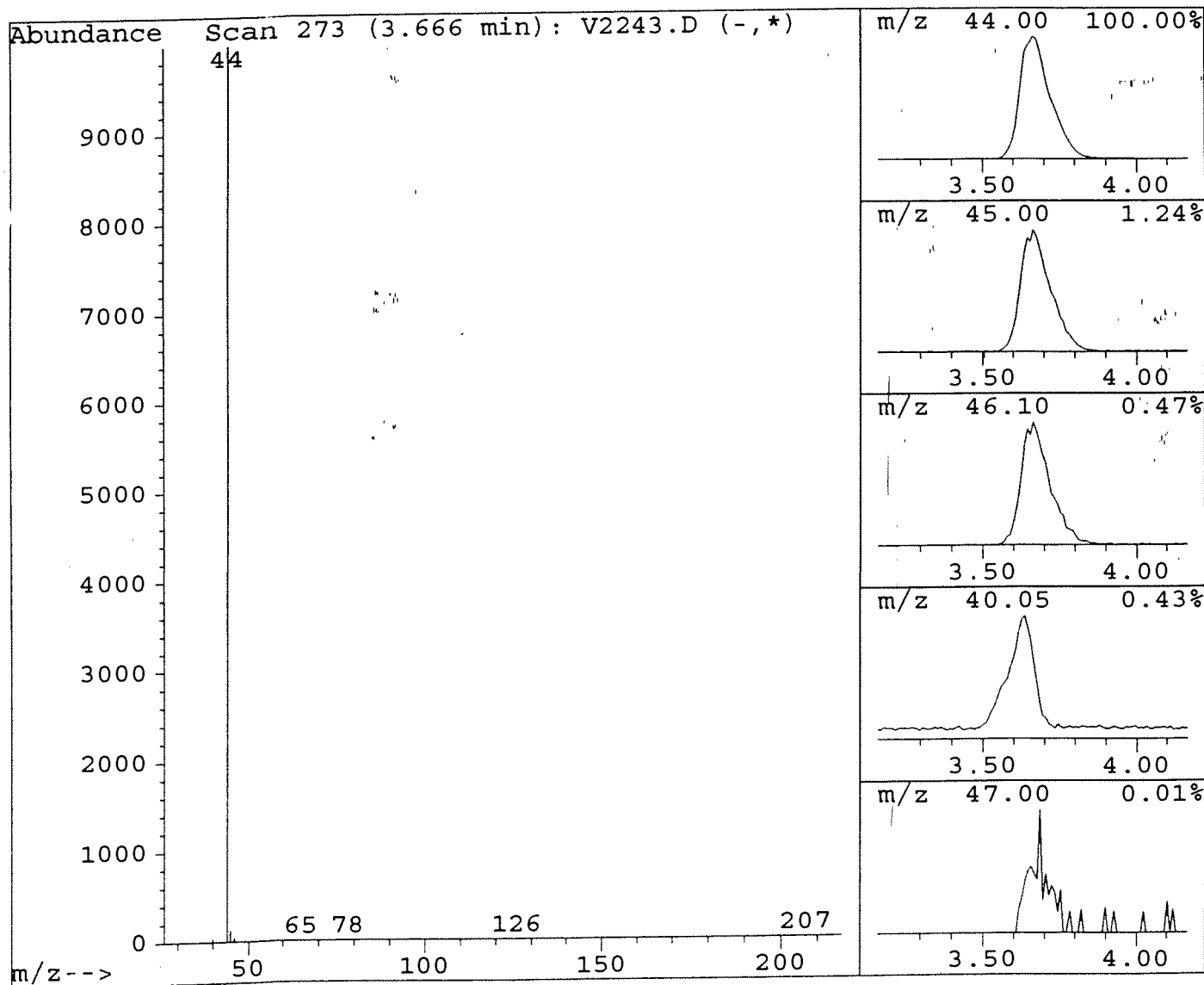
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC6\V2243.D
Acq Time : 6 Dec 93 3:52 pm
Sample : G9311378*5
Misc : GW-6 / SEACOR.SLO / b#816 / 25mL

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
3.67	177.16 ug/l	17565987	Methylene Chloride-d2	7.85	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 Unknown			0	000000-00-0	0



Quantitation Report

REVIEWED & APPROVED

Data File : C:\HPCHEM\1\DATA\DEC6\V2244.D
Acq Time : 6 Dec 93 4:30 pm
Sample : G9311378*MS
Misc : GW-4MS SEACOR.SLO / b#816/ 25mL
Quant Time: Dec 3 7 8:40 1993

BY AMS DATE 12/14/93

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

BATCH # 816
DATE 12/17/93
ANALYST WJ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.85	53	140460	10.00	ug/l	-0.07
24) Fluorobenzene	12.97	96	1173806	10.00	ug/l	-0.08
43) 1,2-Dichlorobenzene-d4	27.24	150	493994	10.00	ug/l	-0.08

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.25	65	193096	9.58	ug/l	95.75%
32) Toluene-d8	16.77	98	1003112	9.89	ug/l	98.92%
45) Bromofluorobenzene	23.50	95	588367	10.87	ug/l	108.70%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chloromethane	4.55	50	43276	2.45	ug/l	93
3) Vinyl Chloride	4.87	62	82382	2.96	ug/l m	42
4) Bromomethane	5.42	94	98034	3.43	ug/l	100
5) Chloroethane	5.54	64	68899	3.27	ug/l	100
6) Trichlorofluoromethane	6.02	101	302092	4.25	ug/l m	0
7) 1,1-Dichloroethene	7.09	96	123103	3.99	ug/l	84
9) Methylene Chloride	7.92	84	97955	3.65	ug/l #	48
10) 1,2-Dichloroethene (trans-)	8.49	96	133019	3.55	ug/l	86
11) 1,1-Dichloroethane	9.26	63	262204	3.51	ug/l	99
12) 2,2-Dichloropropane	10.39	77	274467	3.92	ug/l	95
13) 1,2-Dichloroethene (cis-)	10.47	96	127939	3.51	ug/l	68
14) Bromochloromethane	11.13	130	61435	3.58	ug/l #	46
15) Chloroform	10.77	83	290921	3.81	ug/l	99
16) 1,1-Dichloropropene	11.95	75	251007	3.65	ug/l	98
18) 1,2-Dichloroethane	12.44	62	86428	3.34	ug/l	96
19) 1,1,1-Trichloroethane	11.64	97	333728	4.20	ug/l	99
20) Carbon Tetrachloride	12.22	117	295583	3.96	ug/l	98
21) Benzene	12.56	78	371947	3.48	ug/l	100
22) Trichloroethene	13.85	130	815895	17.35	ug/l	95
23) 1,2-Dichloropropane	14.22	63	135701	3.55	ug/l	97
25) Dibromomethane	14.95	174	55316	3.74	ug/l	88
26) Bromodichloromethane	14.80	83	209031	3.49	ug/l	96
27) cis-1,3-Dichloropropene	16.10	75	79206	1.72	ug/l	100
28) trans-1,3-Dichloropropene	17.30	75	43794	1.68	ug/l	92
29) 1,3-Dichloropropane	18.33	76	101421	3.55	ug/l	95
30) Dibromochloromethane	19.01	129	105805	3.36	ug/l	98
31) Bromoform	22.92	173	52660	3.39	ug/l	100
33) Toluene	16.96	92	269079	3.95	ug/l	91
34) 1,1,2-Trichloroethane	17.71	97	59291	3.52	ug/l	97
35) Tetrachloroethene	18.56	164	225368	5.59	ug/l	94
36) 1,2-Dibromoethane	19.48	107	79394	3.75	ug/l	99
37) Chlorobenzene	20.48	112	270401	3.64	ug/l	100
38) 1,1,1,2-Tetrachloroethane	20.55	131	128377	3.60	ug/l	99
39) Ethylbenzene	20.60	106	144564	3.79	ug/l m	76

(#) = qualifier out of range (m) = manual integration
V2244.D 524SHORT.M Tue Dec 07 08:41:18 1993

VOA3

004070
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC6\V2244.D
Acq Time : 6 Dec 93 4:30 pm
Sample : G9311378*3MS
Misc : GW-4MS / SEACOR.SLO / b#816/ 25mL
Quant Time: Dec 7 8:40 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Fri Dec 03 09:20:02 1993
Response via : Multiple Level Calibration

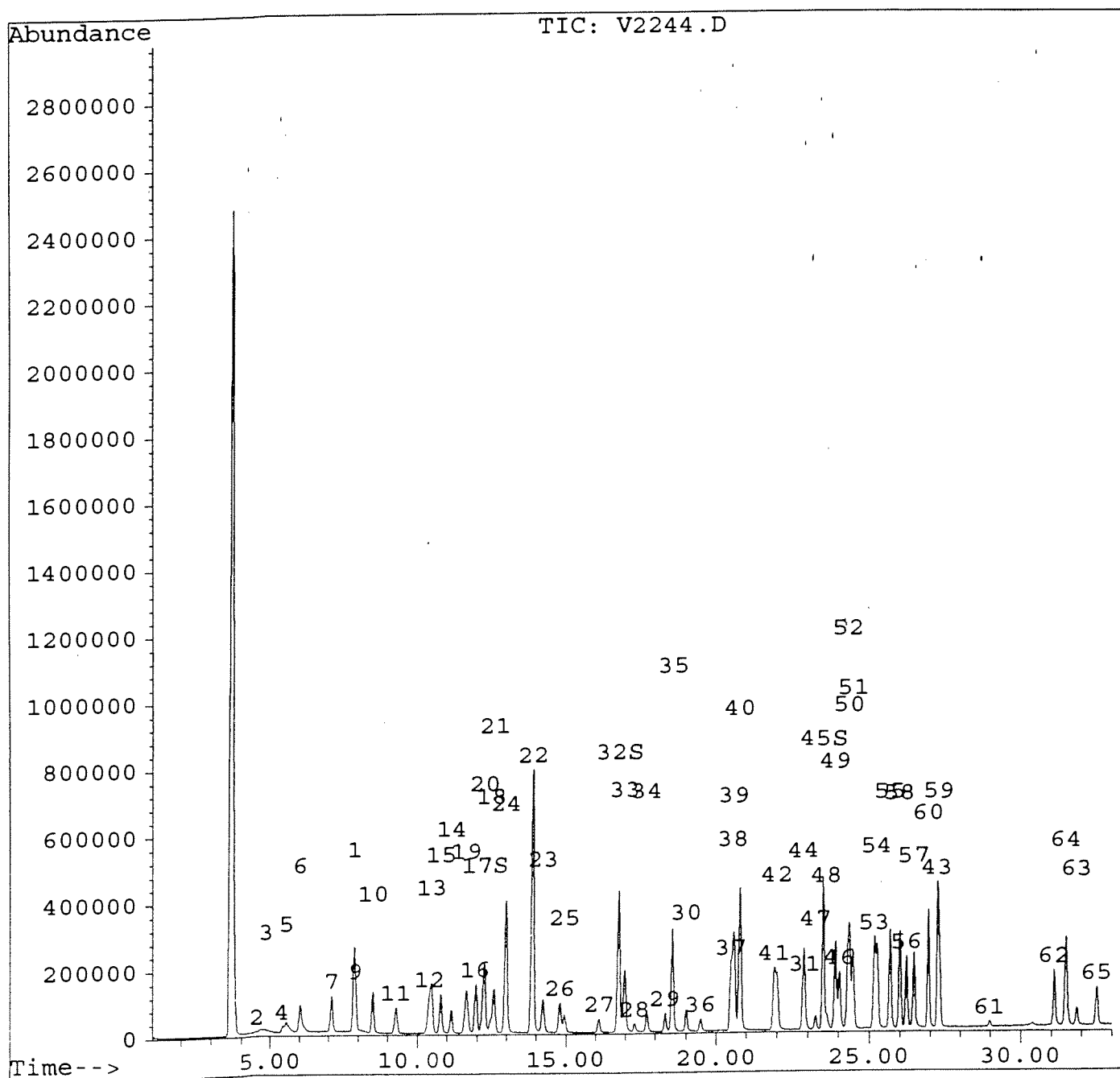
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
40) m,p-Xylenes	20.79	106	380787	7.31	ug/l	63
41) o-Xylene	21.91	106	171152	3.85	ug/l	66
42) Styrene	22.00	104	251433	3.58	ug/l	76
44) Isopropylbenzene	22.86	105	582929	4.14	ug/l	92
46) Bromobenzene	24.04	77	290332	4.33	ug/l	91
47) 1,1,2,2-Tetrachloroethane	23.25	83	77444	3.86	ug/l	94
48) 1,2,3-Trichloropropane	23.63	75	51500	3.75	ug/l m	51
49) n-Propylbenzene	23.90	91	762144	3.91	ug/l	95
50) 2-Chlorotoluene	24.36	91	480167	3.75	ug/l m	98
51) 4-Chlorotoluene	24.46	91	459567	4.38	ug/l	93
52) 1,3,5-Trimethylbenzene	24.30	105	435294	3.85	ug/l	95
53) Tert-Butylbenzene	25.17	119	488263	4.03	ug/l	97
54) 1,2,4-Trimethylbenzene	25.27	105	424652	3.79	ug/l	81
55) Sec-Butylbenzene	25.69	105	727885	4.25	ug/l	96
56) 1,3-Dichlorobenzene	26.22	146	245905	4.16	ug/l	94
57) 1,4-Dichlorobenzene	26.46	146	240363	4.14	ug/l	93
58) p-Isopropyltoluene	26.00	119	546340	4.02	ug/l	99
59) 1,2-Dichlorobenzene	27.30	146	192366	4.13	ug/l	96
60) n-Butylbenzene	26.93	91	648151	4.23	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	28.98	157	12661	3.64	ug/l	81
62) 1,2,4-Trichlorobenzene	31.08	180	149398	4.07	ug/l	96
63) Naphthalene	31.81	128	136577	3.18	ug/l	98
64) Hexachlorobutadiene	31.46	225	167658	4.29	ug/l	93
65) 1,2,3-Trichlorobenzene	32.49	180	113507	3.99	ug/l	98

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC6\V2244.D
 Acq Time : 6 Dec 93 4:30 pm
 Sample : G9311378*3MS
 Misc : GW-4MS / SEACOR.SLO / b#816/ 25mL
 Quant Time: Dec 7 8:40 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration



004072

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC6\V2245.D
 Acq Time : 6 Dec 93 5:09 pm
 Sample : G9311378*BMSD
 Misc : GW-4MSD SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 7 8:43 1993

REVIEWED & APPROVED
 BY AMS DATE 12/14/93

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

BATCH # 816
 DATE 12/7/93
 ANALYST RV

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.85	53	156194	10.00	ug/l	-0.07
24) Fluorobenzene	12.98	96	1379965	10.00	ug/l	-0.07
43) 1,2-Dichlorobenzene-d4	27.24	150	544052	10.00	ug/l	-0.08

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.25	65	214424	9.56	ug/l	95.62%
32) Toluene-d8	16.77	98	1185699	9.95	ug/l	99.46%
45) Bromofluorobenzene	23.51	95	674948	11.32	ug/l	113.23%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chloromethane	4.60	50	50519	2.58	ug/l	86
3) Vinyl Chloride	4.83	62	94918	3.06	ug/l	99
4) Bromomethane	5.43	94	114787	3.61	ug/l	95
5) Chloroethane	5.55	64	78554	3.36	ug/l	90
6) Trichlorofluoromethane	6.02	101	316077	4.00	ug/l m	0
7) 1,1-Dichloroethene	7.09	96	145160	4.23	ug/l	84
9) Methylene Chloride	7.92	84	109186	3.65	ug/l #	47
10) 1,2-Dichloroethene (trans-)	8.48	96	154391	3.71	ug/l	86
11) 1,1-Dichloroethane	9.27	63	308378	3.71	ug/l	99
12) 2,2-Dichloropropane	10.40	77	321026	4.12	ug/l	96
13) 1,2-Dichloroethene (cis-)	10.47	96	150428	3.71	ug/l	68
14) Bromochloromethane	11.13	130	70209	3.68	ug/l #	47
15) Chloroform	10.78	83	335322	3.95	ug/l	99
16) 1,1-Dichloropropene	11.96	75	299569	3.92	ug/l	97
18) 1,2-Dichloroethane	12.45	62	98583	3.42	ug/l	97
19) 1,1,1-Trichloroethane	11.64	97	391521	4.43	ug/l	100
20) Carbon Tetrachloride	12.22	117	341366	4.12	ug/l	96
21) Benzene	12.56	78	448690	3.78	ug/l	100
22) Trichloroethene	13.87	130	944227	18.06	ug/l	95
23) 1,2-Dichloropropane	14.24	63	156527	3.68	ug/l	99
25) Dibromomethane	14.94	174	64636	3.72	ug/l	90
26) Bromodichloromethane	14.80	83	242704	3.45	ug/l	96
27) cis-1,3-Dichloropropene	16.10	75	91016	1.68	ug/l	99
28) trans-1,3-Dichloropropene	17.31	75	51080	1.66	ug/l	99
29) 1,3-Dichloropropane	18.31	76	117224	3.49	ug/l	96
30) Dibromochloromethane	19.00	129	122358	3.30	ug/l	99
31) Bromoform	22.93	173	60487	3.31	ug/l	98
33) Toluene	16.97	92	314989	3.93	ug/l	90
34) 1,1,2-Trichloroethane	17.70	97	70480	3.55	ug/l	99
35) Tetrachloroethene	18.56	164	268950	5.68	ug/l	93
36) 1,2-Dibromoethane	19.48	107	91233	3.67	ug/l	100
37) Chlorobenzene	20.49	112	316554	3.62	ug/l	100
38) 1,1,1,2-Tetrachloroethane	20.55	131	149856	3.57	ug/l	98
39) Ethylbenzene	20.61	106	171430	3.82	ug/l m	74

(#) = qualifier out of range (m) = manual integration
 V2245.D 524SHORT.M Tue Dec 07 08:43:46 1993

VOA3

004073

Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC6\V2245.D
 Acq Time : 6 Dec 93 5:09 pm
 Sample : G9311378*3MSD
 Misc : GW-4MSD / SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 7 8:43 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
40) m,p-Xylenes	20.79	106	446212	7.29	ug/l	63
41) o-Xylene	21.92	106	203680	3.90	ug/l	67
42) Styrene	22.01	104	294739	3.57	ug/l	75
44) Isopropylbenzene	22.87	105	702460	4.53	ug/l	93
46) Bromobenzene	24.03	77	337538	4.57	ug/l	91
47) 1,1,2,2-Tetrachloroethane	23.26	83	90767	4.11	ug/l	98
48) 1,2,3-Trichloropropane	23.63	75	59822	3.96	ug/l m	35
49) n-Propylbenzene	23.91	91	909039	4.24	ug/l	95
50) 2-Chlorotoluene	24.36	91	582393	4.13	ug/l m	98
51) 4-Chlorotoluene	24.46	91	525041	4.54	ug/l	93
52) 1,3,5-Trimethylbenzene	24.31	105	511654	4.11	ug/l	95
53) Tert-Butylbenzene	25.18	119	579979	4.35	ug/l	96
54) 1,2,4-Trimethylbenzene	25.27	105	504174	4.09	ug/l	79
55) Sec-Butylbenzene	25.69	105	868220	4.60	ug/l	96
56) 1,3-Dichlorobenzene	26.22	146	290470	4.46	ug/l	96
57) 1,4-Dichlorobenzene	26.46	146	286486	4.48	ug/l	94
58) p-Isopropyltoluene	26.00	119	653043	4.37	ug/l	99
59) 1,2-Dichlorobenzene	27.31	146	217906	4.25	ug/l	96
60) n-Butylbenzene	26.93	91	777603	4.61	ug/l	94
61) 1,2-Dibromo-3-Chloropropan	28.97	157	14949	3.90	ug/l	80
62) 1,2,4-Trichlorobenzene	31.08	180	172400	4.27	ug/l	97
63) Naphthalene	31.82	128	157343	3.33	ug/l	98
64) Hexachlorobutadiene	31.45	225	198945	4.62	ug/l	94
65) 1,2,3-Trichlorobenzene	32.49	180	134223	4.28	ug/l	96

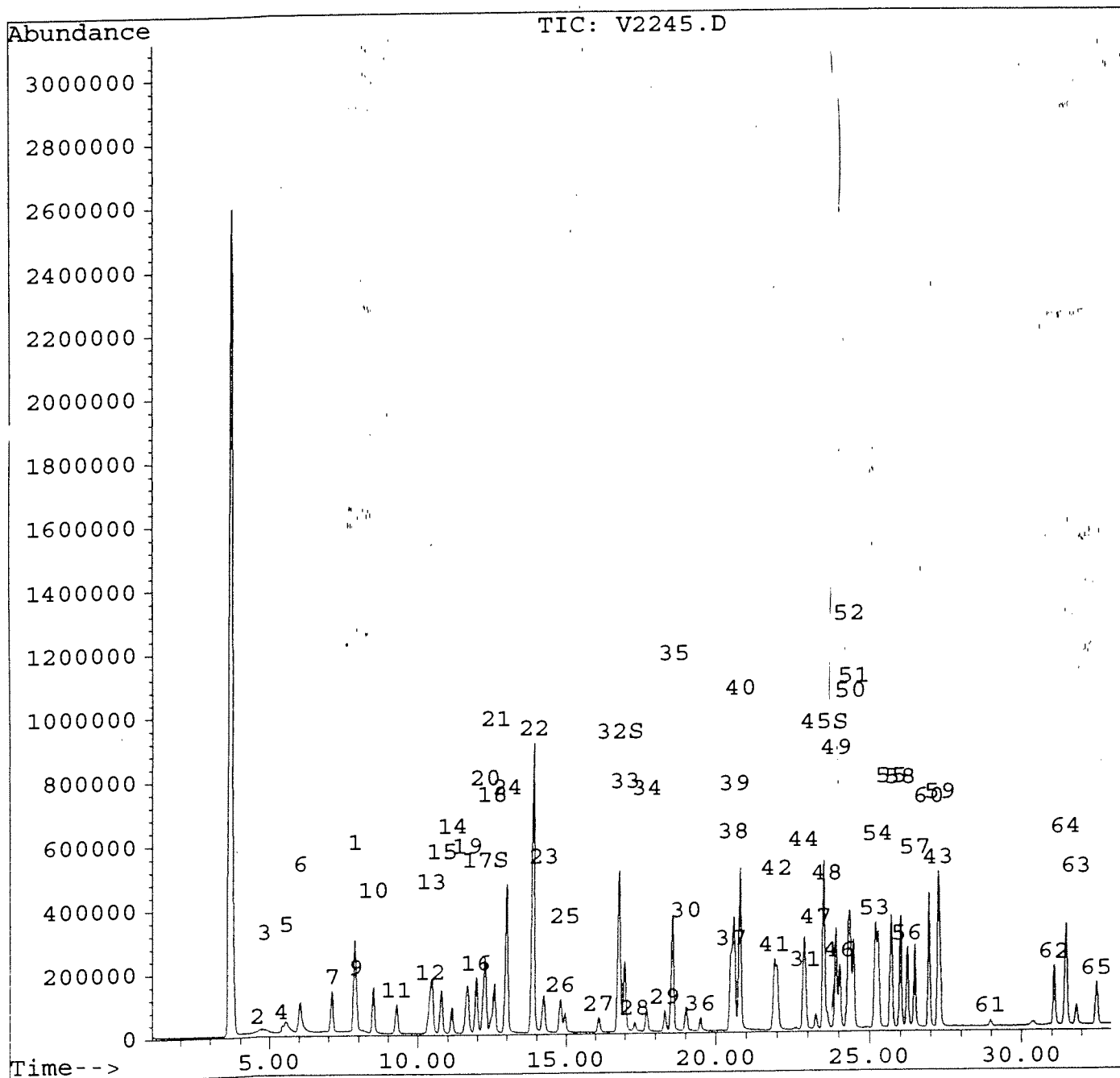
004074

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC6\V2245.D
 Acq Time : 6 Dec '93 5:09 pm
 Sample : G9311378*3MSD
 Misc : GW-4MSD / SEACOR.SLO / b#816 / 25mL
 Quant Time: Dec 7 8:43 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration



004075

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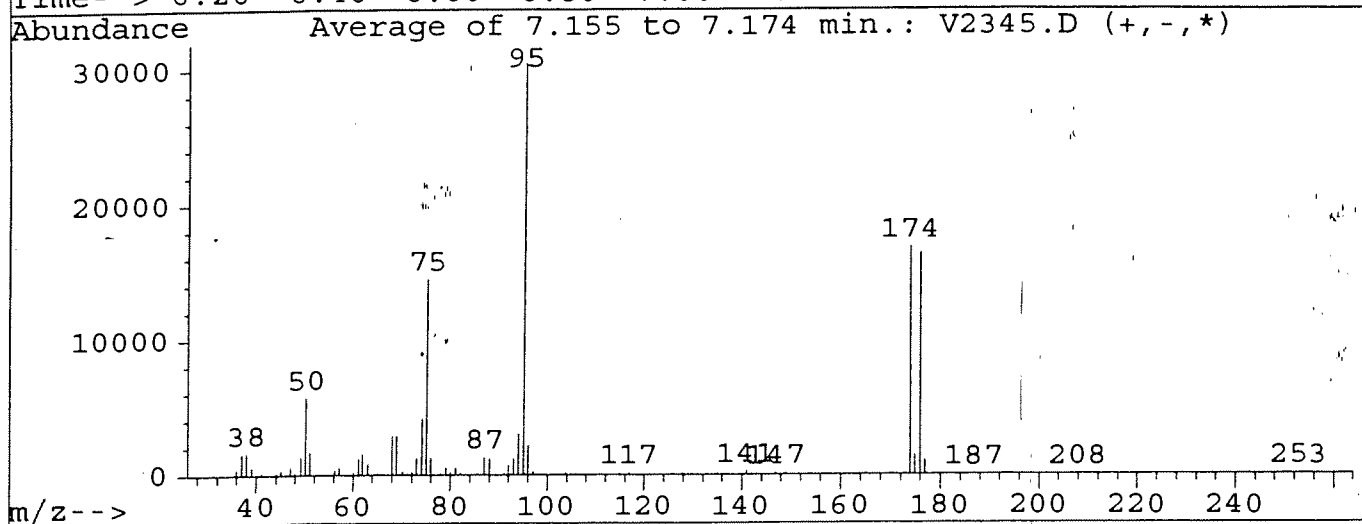
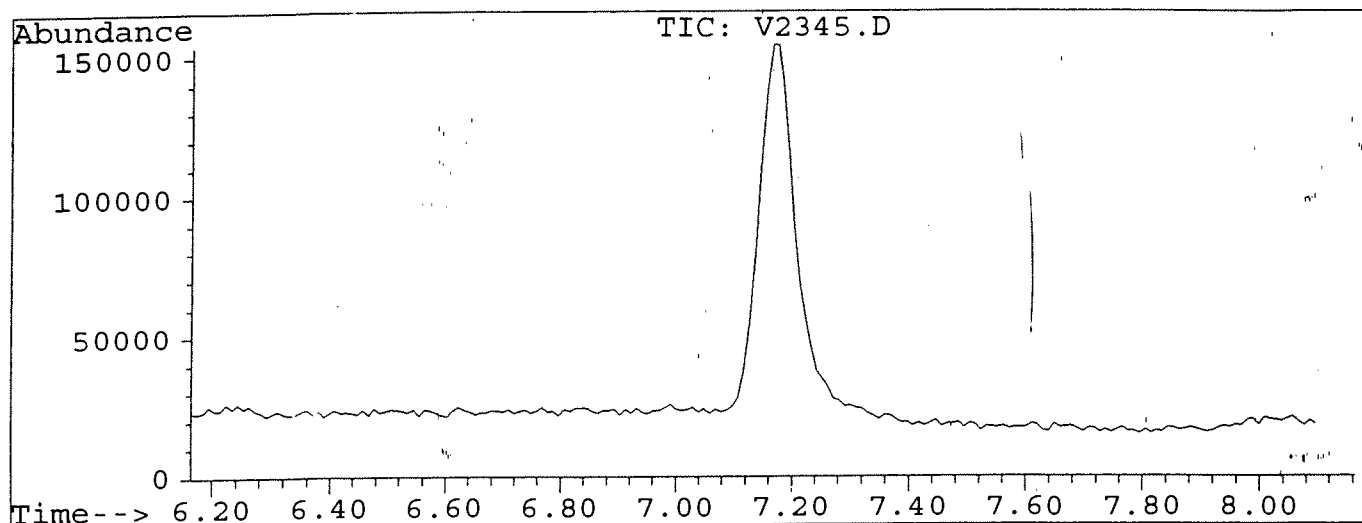
BFB

Batch 822

Data File : C:\HPCHEM\1\DATA\DEC14\V2345.D
Acq Time : 14 Dec 93 10:28 am
Sample : 25 NF BFB / 5ML
Misc : LOT#VO9308016

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RBFB.M
Title :



Peak Apex is scan: 241

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	5673	PASS
75	95	30	60	47.7	14537	PASS
95	95	100	100	100.0	30482	PASS
96	95	5	9	7.1	2155	PASS
173	174	0	2	0.2	37	PASS
174	95	50	100	55.4	16896	PASS
175	174	5	9	8.6	1455	PASS
176	174	95	101	97.2	16420	PASS
177	176	5	9	6.4	1053	PASS

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2346.D
 Acq Time : 14 Dec 93 10:59 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / / b#822 / 25ML
 Quant Time: Dec 14 11:35 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Mon Dec 13 08:14:17 1993
 Response via : Multiple Level Calibration

BATCH # 270
 DATE 12/14/93
 ANALYST TL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Methylene Chloride-d2	7.89	53	137887	10.00	ug/l	-0.03
24) Fluorobenzene	13.00	96	1133719	10.00	ug/l	-0.05
43) 1,2-Dichlorobenzene-d4	27.28	150	500097	10.00	ug/l	-0.03

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
17) 1,2-Dichloroethane-d4	12.28	65	185063	9.35	ug/l	93.48%
32) Toluene-d8	16.81	98	968128	9.88	ug/l	98.84%
45) Bromofluorobenzene	23.55	95	579260	10.57	ug/l	105.72%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Chloromethane	4.57	50	105170	6.07	ug/l m	45
3) Vinyl Chloride	4.76	62	296260	10.84	ug/l	99
4) Bromomethane	5.46	94	198011	7.06	ug/l m	98
5) Chloroethane	5.58	64	221105	10.70	ug/l	95
6) Trichlorofluoromethane	6.05	101	448953	6.43	ug/l m	0
7) 1,1-Dichloroethene	7.11	96	365948	12.08	ug/l	89
8) Freon 113	6.83	101	624996	10.95	ug/l	92
9) Methylene Chloride	7.95	84	187177	7.10	ug/l #	59
10) 1,2-Dichloroethene (trans-)	8.52	96	421670	11.47	ug/l	90
11) 1,1-Dichloroethane	9.29	63	551840	7.53	ug/l	98
12) 2,2-Dichloropropane	10.42	77	667630	9.70	ug/l	95
13) 1,2-Dichloroethene (cis-)	10.49	96	280760	7.85	ug/l	68
14) Bromochloromethane	11.16	130	182670	10.84	ug/l #	52
15) Chloroform	10.81	83	741369	9.89	ug/l	100
16) 1,1-Dichloropropene	11.99	75	669445	9.92	ug/l	97
18) 1,2-Dichloroethane	12.47	62	190390	7.49	ug/l	98
19) 1,1,1-Trichloroethane	11.67	97	620865	7.95	ug/l	99
20) Carbon Tetrachloride	12.25	117	779858	10.66	ug/l	97
21) Benzene	12.60	78	1120370	10.69	ug/l	100
22) Trichloroethene	13.90	130	511090	11.07	ug/l	96
23) 1,2-Dichloropropane	14.26	63	309914	8.25	ug/l	99
25) Dibromomethane	14.98	174	160157	11.21	ug/l	90
26) Bromodichloromethane	14.83	83	599510	10.37	ug/l	97
27) cis-1,3-Dichloropropene	16.14	75	401490	9.01	ug/l	99
28) trans-1,3-Dichloropropene	17.34	75	234098	9.27	ug/l	98
29) 1,3-Dichloropropane	18.36	76	297566	10.77	ug/l	98
30) Dibromochloromethane	19.05	129	308681	10.14	ug/l	99
31) Bromoform	22.96	173	155741	10.39	ug/l	100
33) Toluene	17.00	92	741067	11.26	ug/l	92
34) 1,1,2-Trichloroethane	17.75	97	164519	10.10	ug/l	99
35) Tetrachloroethene	18.59	164	444789	11.43	ug/l	93
36) 1,2-Dibromoethane	19.52	107	227892	11.16	ug/l	100
37) Chlorobenzene	20.52	112	713959	9.94	ug/l	99
38) 1,1,1,2-Tetrachloroethane	20.59	131	361582	10.50	ug/l	98

(#) = qualifier out of range (m) = manual integration
 V2346.D 524SHORT.M Tue Dec 14 11:38:12 1993

VOA3

004078
 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2346.D
Acq Time : 14 Dec 93 10:59 am
Sample : VSTD010
Misc : 10 PPB VOA 524.2 STD / / b#822 / 25ML
Quant Time: Dec 14 11:35 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Mon Dec 13 08:14:17 1993
Response via : Multiple Level Calibration

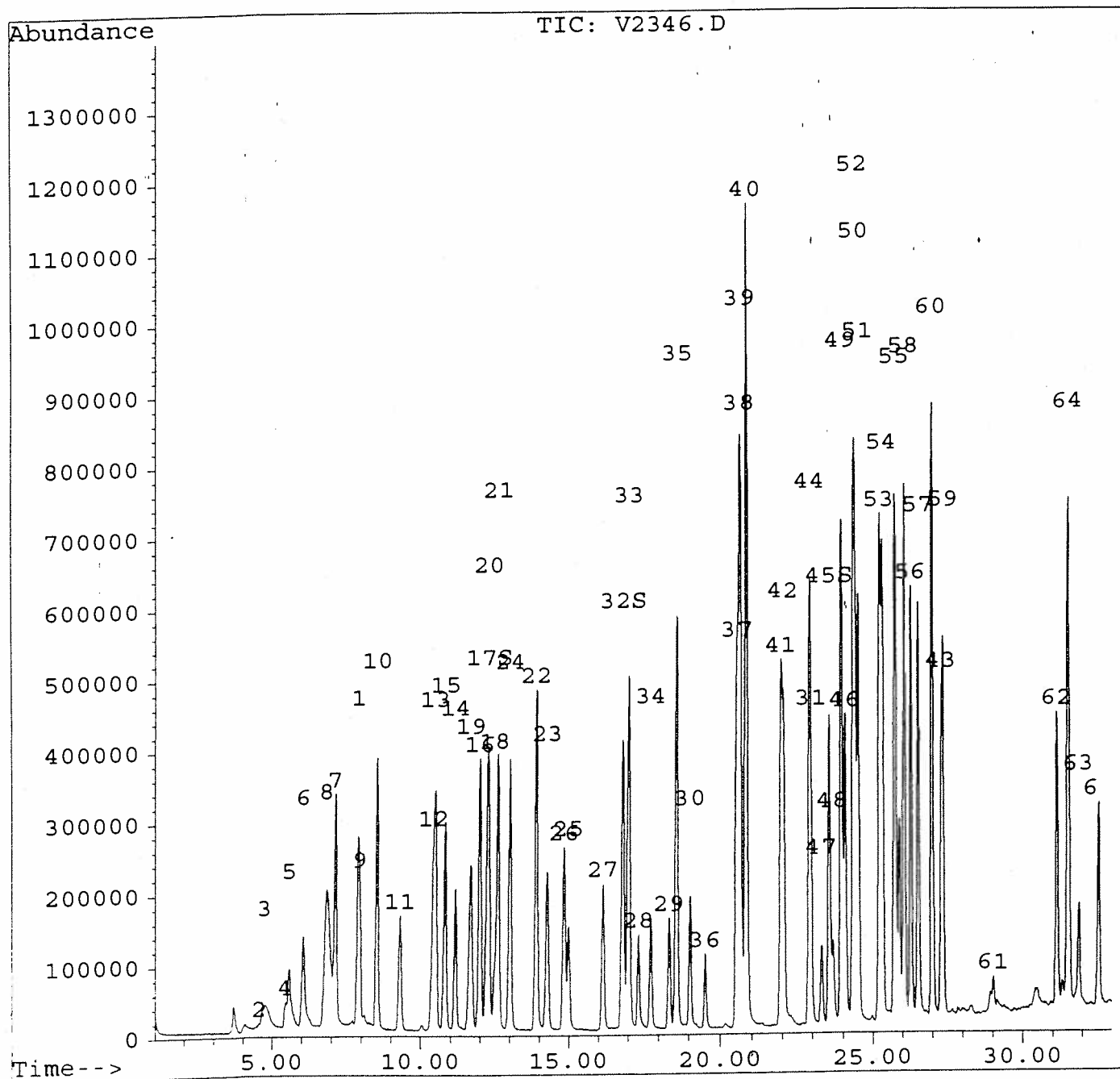
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) Ethylbenzene	20.64	106	430060	11.66	ug/l m	78
40) m,p-Xylenes	20.82	106	1053539	20.95	ug/l	66
41) o-Xylene	21.96	106	481986	11.24	ug/l	71
42) Styrene	22.04	104	703006	10.37	ug/l	79
44) Isopropylbenzene	22.90	105	1552839	10.90	ug/l	93
46) Bromobenzene	24.07	77	719710	10.60	ug/l	93
47) 1,1,2,2-Tetrachloroethane	23.30	83	213482	10.51	ug/l	94
48) 1,2,3-Trichloropropane	23.68	75	152426	10.97	ug/l	93
49) n-Propylbenzene	23.94	91	2079553	10.54	ug/l	96
50) 2-Chlorotoluene	24.40	91	1306807	10.08	ug/l	98
51) 4-Chlorotoluene	24.51	91	1168679	11.00	ug/l	93
52) 1,3,5-Trimethylbenzene	24.34	105	1212181	10.58	ug/l	93
53) Tert-Butylbenzene	25.22	119	1289399	10.52	ug/l	98
54) 1,2,4-Trimethylbenzene	25.30	105	1132656	9.99	ug/l	81
55) Sec-Butylbenzene	25.72	105	1874246	10.81	ug/l	97
56) 1,3-Dichlorobenzene	26.26	146	690698	11.54	ug/l	94
57) 1,4-Dichlorobenzene	26.50	146	631745	10.74	ug/l	93
58) p-Isopropyltoluene	26.03	119	1431361	10.41	ug/l	99
59) 1,2-Dichlorobenzene	27.34	146	491830	10.44	ug/l	97
60) n-Butylbenzene	26.97	91	1586371	10.23	ug/l	92
61) 1,2-Dibromo-3-Chloropropan	29.01	157	35688	10.12	ug/l	76
62) 1,2,4-Trichlorobenzene	31.12	180	384925	10.36	ug/l	98
63) Naphthalene	31.87	128	377951	8.69	ug/l	98
64) Hexachlorobutadiene	31.52	225	461825	11.67	ug/l	93
65) 1,2,3-Trichlorobenzene	32.54	180	293757	10.19	ug/l	97

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2346.D
 Acq Time : 14 Dec 93 10:59 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / / b#822 / 25ML
 Quant Time: Dec 14 11:35 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Mon Dec 13 08:14:17 1993
 Response via : Multiple Level Calibration



004080

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2346.D

Acq Time : 14 Dec 93 10:59 am

Sample : VSTD010

Misc : 10 PPB VOA 524.2 STD / / b#822 / 25ML

Operator: TERRI

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M

Title : method 524.2

Last Update : Mon Dec 13 08:14:17 1993

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

*2 out
OK 2/14/93*

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev (Min)
1	Methylene Chloride-d2	1.000	1.000	0.0	121	-0.03
2	Chloromethane	1.256	0.763	39.3#	77	0.00
3	Vinyl Chloride	1.983	2.149	-8.4	126	-0.03
4	Bromomethane	2.035	1.436	29.4#	92	-0.03
5	Chloroethane	1.499	1.604	-7.0	131	-0.04
6	Trichlorofluoromethane	5.061	3.256	35.7#	75	-0.04
7	1,1-Dichloroethene	2.198	2.654	-20.8	143	-0.04
8	Freon 113	4.138	4.533	-9.5	129	-0.03
9	Methylene Chloride	1.913	1.357	29.0#	95	-0.04
10	1,2-Dichloroethene (trans-)	2.666	3.058	-14.7	139	-0.04
11	1,1-Dichloroethane	5.315	4.002	24.7	95	-0.05
12	2,2-Dichloropropane	4.990	4.842	3.0	112	-0.05
13	1,2-Dichloroethene (cis-)	2.595	2.036	21.5	99	-0.05
14	Bromochloromethane	1.222	1.325	-8.4	131	-0.05
15	Chloroform	5.435	5.377	1.1	123	-0.04
16	1,1-Dichloropropene	4.894	4.855	0.8	118	-0.04
17 S	1,2-Dichloroethane-d4	1.436	1.342	6.5	110	-0.05
18	1,2-Dichloroethane	1.843	1.381	25.1#	95	-0.05
19	1,1,1-Trichloroethane	5.663	4.503	20.5	97	-0.06
20	Carbon Tetrachloride	5.308	5.656	-6.6	123	-0.04
21	Benzene	7.602	8.125	-6.9	131	-0.04
22	Trichloroethene	3.347	3.707	-10.7	130	-0.04
23	1,2-Dichloropropane	2.723	2.248	17.5	104	-0.05
24	Fluorobenzene	1.000	1.000	0.0	112	-0.05
25	Dibromomethane	0.126	0.141	-12.1	132	-0.05
26	Bromodichloromethane	0.510	0.529	-3.7	124	-0.05
27	cis-1,3-Dichloropropene	0.393	0.354	9.9	107	-0.05
28	trans-1,3-Dichloropropene	0.223	0.206	7.3	114	-0.04
29	1,3-Dichloropropane	0.244	0.262	-7.7	126	-0.04
30	Dibromochloromethane	0.269	0.272	-1.4	122	-0.05
31	Bromoform	0.132	0.137	-3.9	120	-0.05
32 S	Toluene-d8	0.864	0.854	1.2	110	-0.05
33	Toluene	0.580	0.654	-12.6	132	-0.04
34	1,1,2-Trichloroethane	0.144	0.145	-1.0	123	-0.04
35	Tetrachloroethene	0.343	0.392	-14.3	128	-0.05
36	1,2-Dibromoethane	0.180	0.201	-11.6	130	-0.04
37	Chlorobenzene	0.634	0.630	0.6	119	-0.05
38	1,1,1,2-Tetrachloroethane	0.304	0.319	-5.0	120	-0.04
39	Ethylbenzene	0.325	0.379	-16.6	132	-0.04
40	m,p-Xylenes	0.444	0.465	-4.7	123	-0.04
41	o-Xylene	0.378	0.425	-12.4	131	-0.05

(#) = Out of Range
V2346.D 524SHORT.M

Tue Dec 14 11:36:47 1993

VOA3

Page 1

004081

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2346.D

Acq Time : 14 Dec 93 10:59 am

Sample : VSTD010

Misc : 10 PPB VOA 524.2 STD / / b#822 / 25ML

Operator: TERRI

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M

Title : method 524.2

Last Update : Mon Dec 13 08:14:17 1993

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev (Min)
42	Styrene	0.598	0.620	-3.7	125	-0.06
43	1,2-Dichlorobenzene-d4	1.000	1.000	0.0	112	-0.03
44	Isopropylbenzene	2.850	3.105	-9.0	120	-0.05
45 S	Bromofluorobenzene	1.096	1.158	-5.7	116	-0.04
46	Bromobenzene	1.358	1.439	-6.0	120	-0.05
47	1,1,2,2-Tetrachloroethane	0.406	0.427	-5.1	126	-0.05
48	1,2,3-Trichloropropane	0.278	0.305	-9.7	133	-0.04
49	n-Propylbenzene	3.944	4.158	-5.4	117	-0.05
50	2-Chlorotoluene	2.591	2.613	-0.8	118	-0.05
51	4-Chlorotoluene	2.125	2.337	-10.0	124	-0.05
52	1,3,5-Trimethylbenzene	2.290	2.424	-5.8	119	-0.04
53	Tert-Butylbenzene	2.451	2.578	-5.2	118	-0.04
54	1,2,4-Trimethylbenzene	2.267	2.265	0.1	116	-0.05
55	Sec-Butylbenzene	3.466	3.748	-8.1	117	-0.05
56	1,3-Dichlorobenzene	1.197	1.381	-15.4	126	-0.04
57	1,4-Dichlorobenzene	1.177	1.263	-7.4	122	-0.04
58	p-Isopropyltoluene	2.748	2.862	-4.1	115	-0.04
59	1,2-Dichlorobenzene	0.942	0.983	-4.4	118	-0.03
60	n-Butylbenzene	3.102	3.172	-2.3	112	-0.04
61	1,2-Dibromo-3-Chloropropane	0.070	0.071	-1.2	123	-0.04
62	1,2,4-Trichlorobenzene	0.743	0.770	-3.6	116	-0.05
63	Naphthalene	0.870	0.756	13.1	98	-0.04
64	Hexachlorobutadiene	0.791	0.923	-16.7	125	-0.04
65	1,2,3-Trichlorobenzene	0.576	0.587	-1.9	104	-0.05

004082

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2348.D
 Acq Time : 14 Dec 93 12:17 pm
 Sample : METHOD BLANK
 Misc : MB822 / b#822 / 5ML
 Quant Time: Dec 14 12:51 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Mon Dec 13 08:14:56 1993
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.89	53	154140	10.00	ug/l	-0.03
24) Fluorobenzene	13.00	96	1355590	10.00	ug/l	-0.05
43) 1,2-Dichlorobenzene-d4	27.28	150	518683	10.00	ug/l	-0.04
						%Recovery
System Monitoring Compounds						
17) 1,2-Dichloroethane-d4	12.27	65	208145	9.41	ug/l	94.06%
32) Toluene-d8	16.80	98	1166944	9.96	ug/l	99.64%
45) Bromofluorobenzene	23.54	95	667218	11.74	ug/l	117.40%
Target Compounds						Qvalue
9) Methylene Chloride	7.89	84	6536	0.22	ug/l	# 1

BATCH # 802
 DATE 12/14/93
 ANALYST W

REVIEWED & APPROVED
 BY AHS DATE 12/29/93

VOA. 524.2 12-1045-1

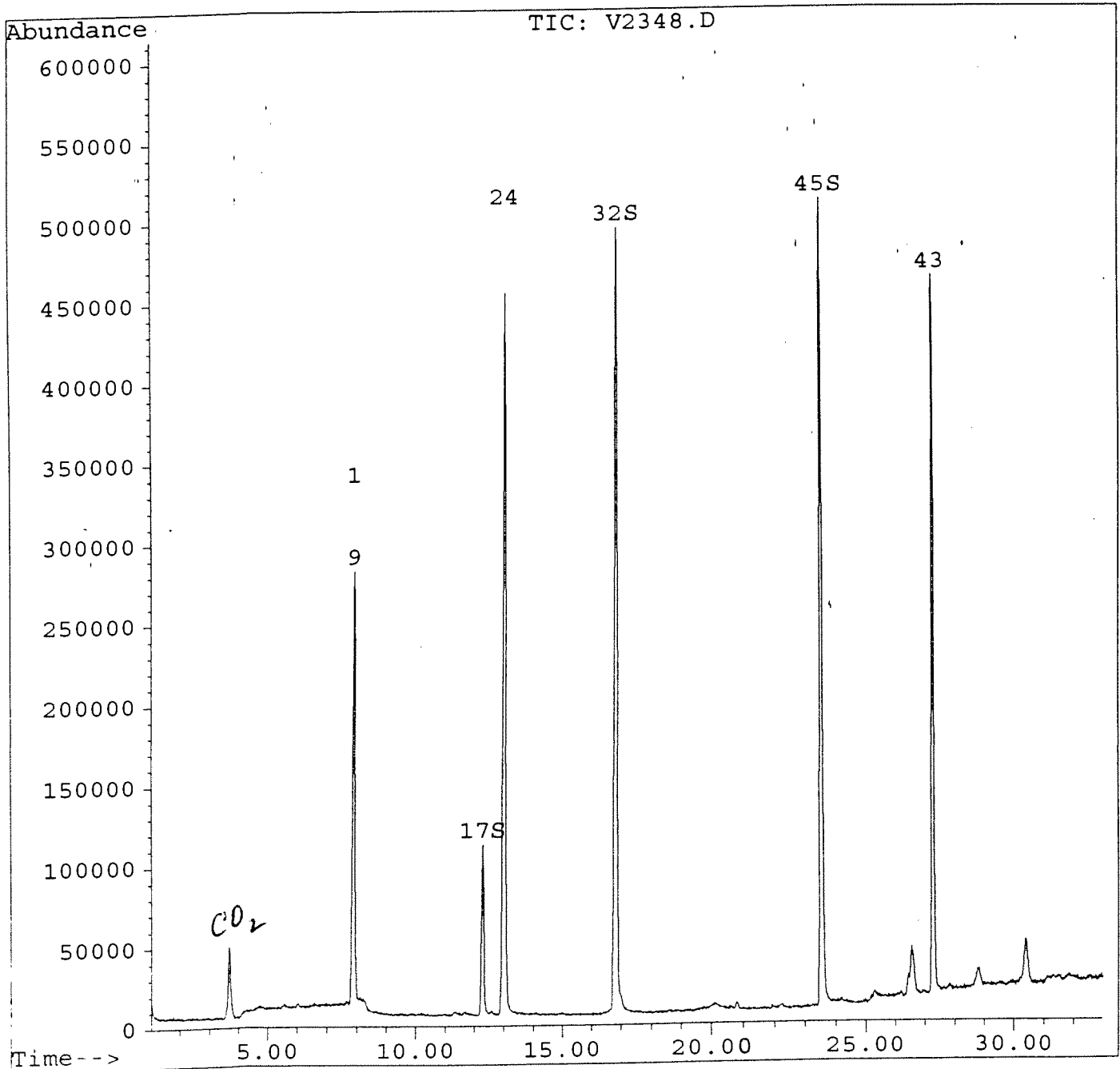
004083

Quantitation Report

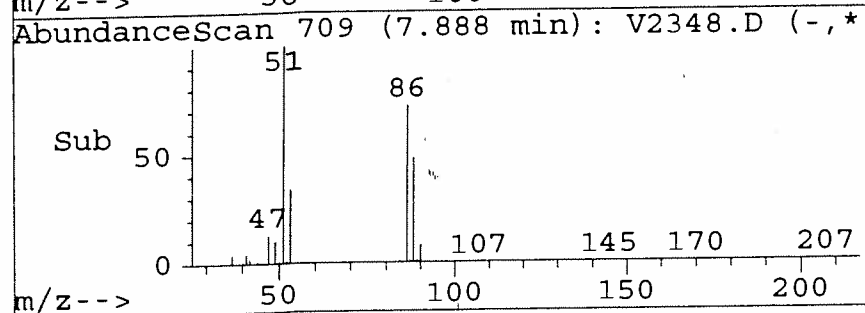
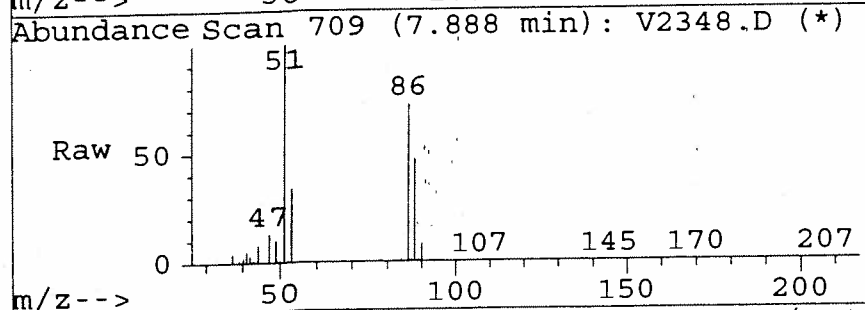
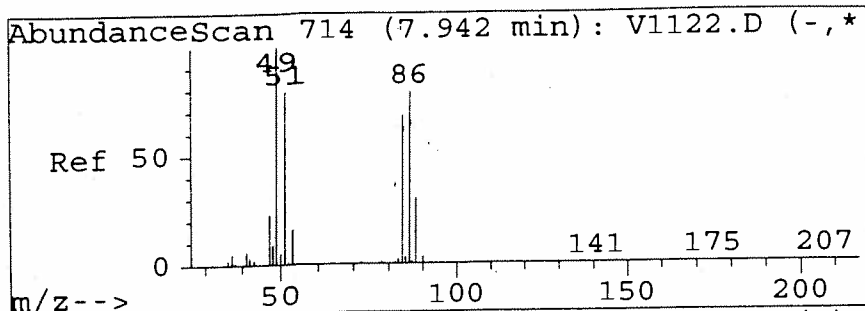
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Acq Time : 14 Dec 93 12:17 pm
Sample : METHOD BLANK
Misc : MB822 / b#822 / 5ML
Quant Time: Dec 14 12:51 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Mon Dec 13 08:14:56 1993
Response via : Multiple Level Calibration

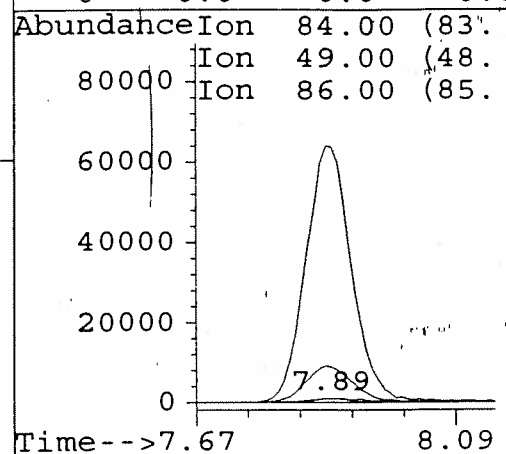


004084



#9
Methylene Chloride
Concen: 0.22 ug/l
RT: 7.89 min Scan# 709
Delta R.T. 0.10 min
Lab File: V2348.D
Acq: 14 Dec 93 12:17 pm

Tgt Ion:84	Resp:	6536	
Ion	Ratio	Lower	Upper
84	100		
49	767.5	86.0	186.0#
86	5114.7	12.0	112.0#
0	0.0	0.0	0.0



004085

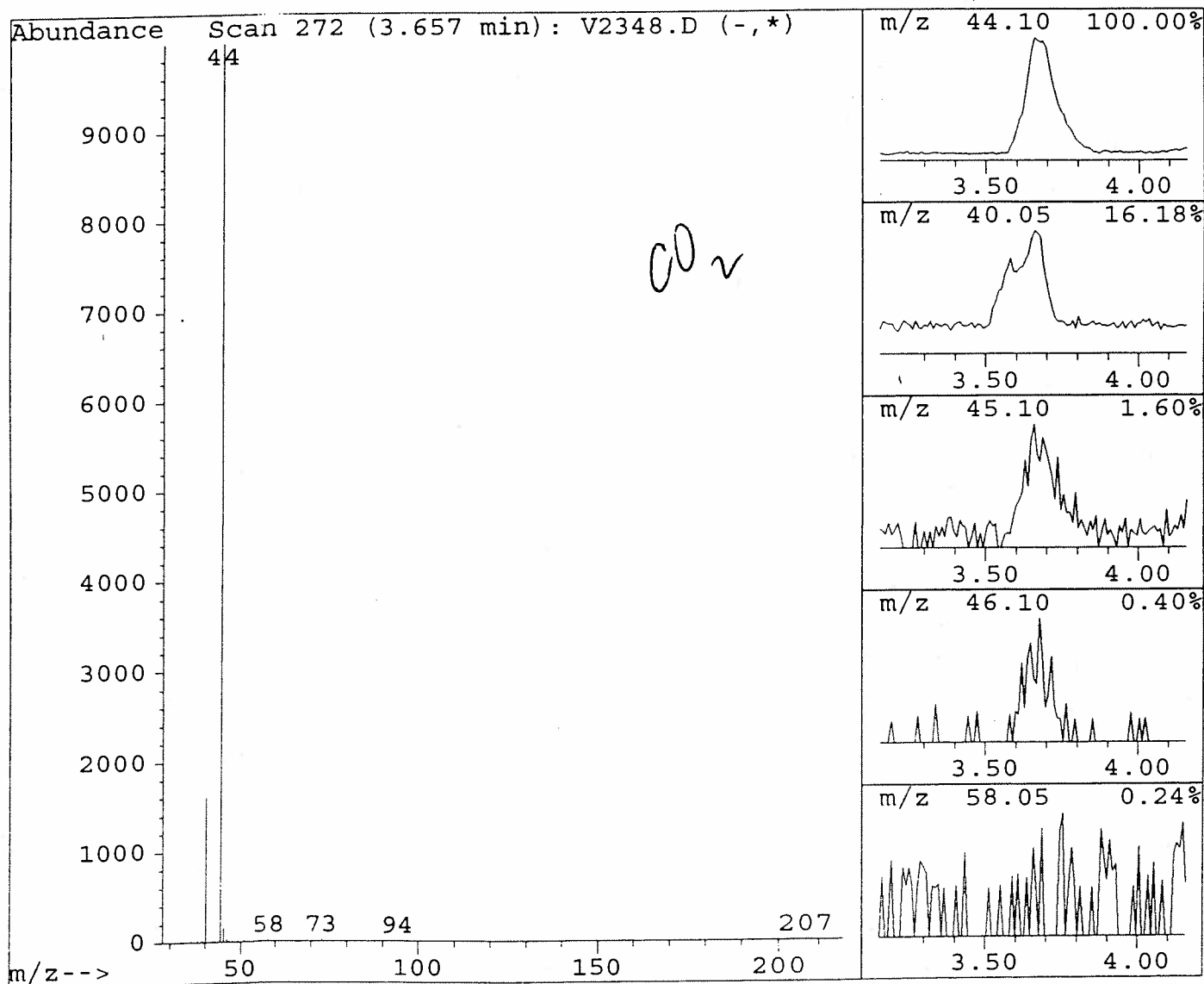
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2348.D
Acq Time : 14 Dec 93 12:17 pm
Sample : METHOD BLANK
Misc : MB822 / b#822 / 5ML

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD		R.T.
3.66	2.31 ug/l	322104	Methylene Chloride-d2		7.89
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1 Unknown			0,000000-00-0		0



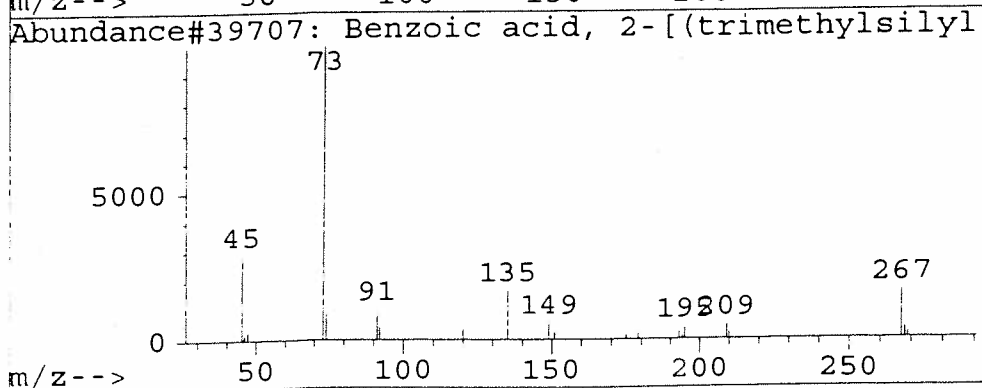
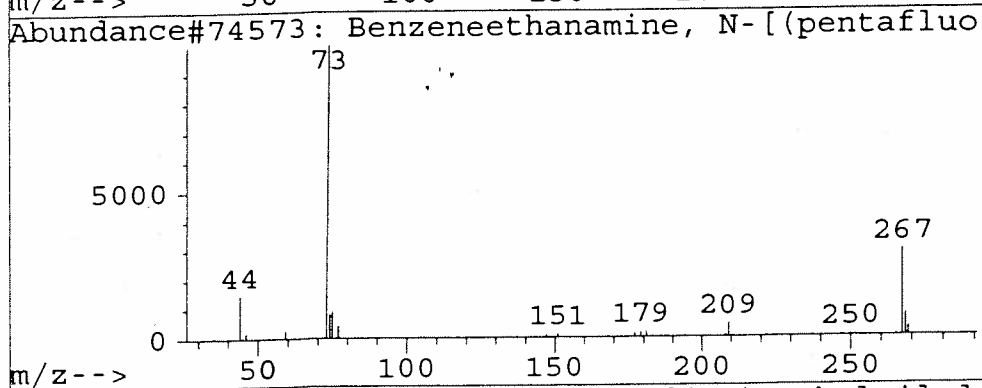
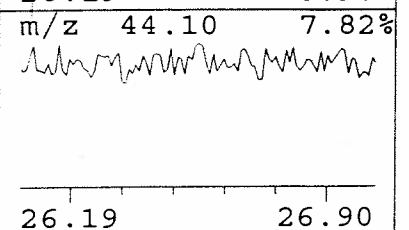
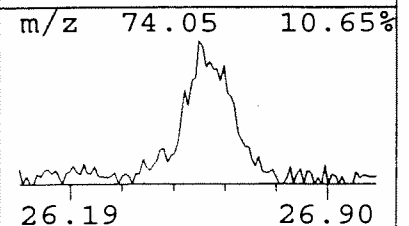
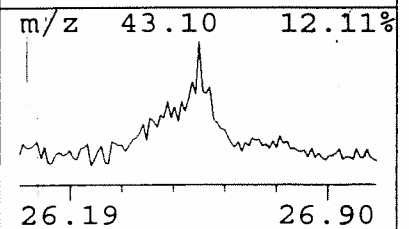
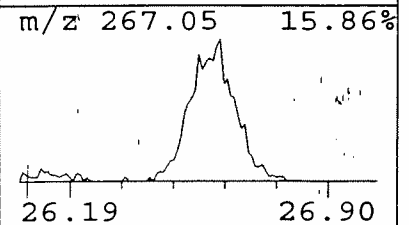
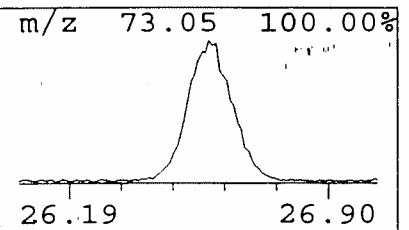
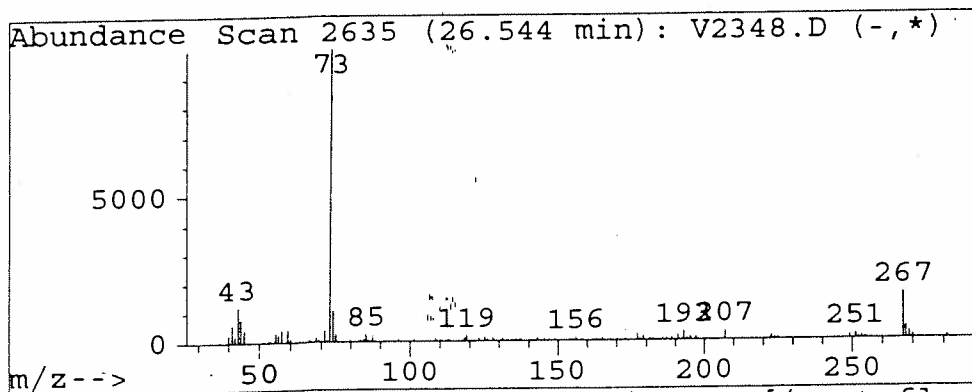
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2348.D
Acq Time : 14 Dec 93 12:17 pm
Sample : METHOD BLANK
Misc : MB822 / b#822 / 5ML

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
26.54	1.07 ug/l	227780	1,2-Dichlorobenzene-d4	27.28	
Hit# of	2	Tentative ID	Ref#	CAS#	Qual
1		Benzeneethanamine, N-[(pentafluorop	74573	055429-85-1	39
2		Benzoic acid, 2-[(trimethylsilyl)ox	39707	003789-85-3	36



Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2349.D
 Acq Time : 14 Dec 93 12:56 pm
 Sample : G9312066*1
 Misc : GW-1 / SEACOR.SLO / b#822 / 25ML
 Quant Time: Dec 14 13:29 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Mon Dec 13 08:14:56 1993
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.88	53	119063	10.00	ug/l	-0.04
24) Fluorobenzene	12.99	96	1129610	10.00	ug/l	-0.06
43) 1,2-Dichlorobenzene-d4	27.26	150	386245	10.00	ug/l	-0.05
System Monitoring Compounds						%Recovery
17) 1,2-Dichloroethane-d4	12.27	65	154738	9.05	ug/l	90.52%
32) Toluene-d8	16.80	98	947304	9.71	ug/l	97.07%
45) Bromofluorobenzene	23.53	95	515660	12.18	ug/l	121.85%
Target Compounds						Qvalue
11) 1,1-Dichloroethane	9.29	63	18710	0.30 ug/l	0.3	97
13) 1,2-Dichloroethene (cis-)	10.49	96	63332	2.05 ug/l	2.1	88
15) Chloroform	10.80	83	20512	0.32 ug/l	0.3	96
19) 1,1,1-Trichloroethane	11.66	97	16680	0.25 ug/l	#0.3	36
22) Trichloroethene	13.88	130	176992	4.44 ug/l	4.4	95
33) Toluene	16.99	92	17151	0.26 ug/l	0.3	87
35) Tetrachloroethene	18.57	164	100020	2.58 ug/l	2.6	93
39) Ethylbenzene	20.81	106	12965	0.35 ug/l		82
40) m,p-Xylenes	20.81	106	12965	0.26 ug/l	0.3	72

BATCH # 822
 DATE 12/14/93
 ANALYST rw

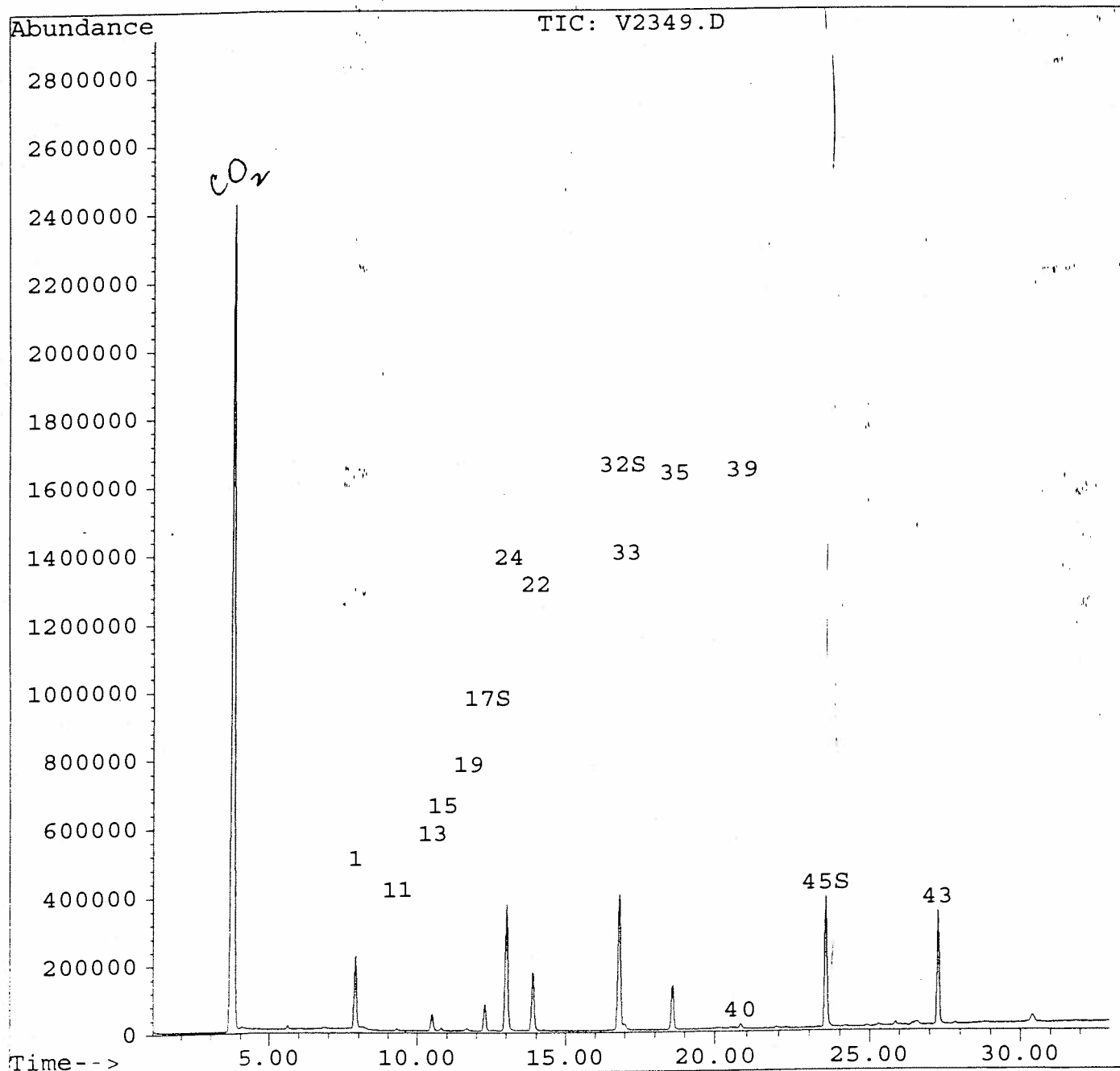
REVIEWED & APPROVED
 BY AMS DATE 12/29/93

Quantitation Report

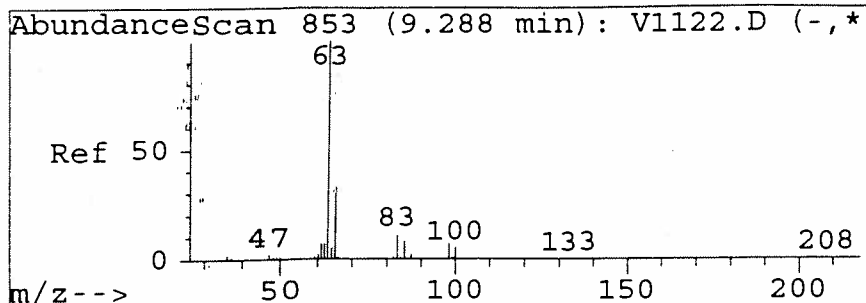
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Acq Time : 14 Dec 93 12:56 pm
Sample : G9312066*1
Misc : GW-1 / SEACOR.SLO / b#822 / 25ML
Quant Time: Dec 14 13:29 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Last Update : Mon Dec 13 08:14:56 1993
Response via : Multiple Level Calibration

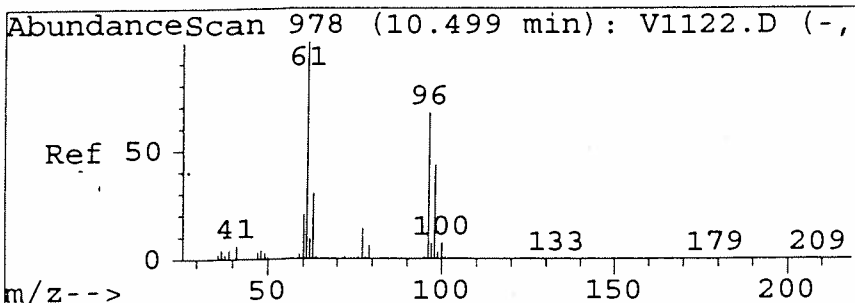
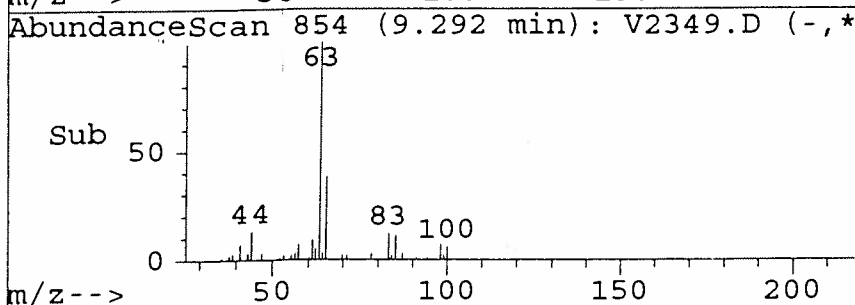
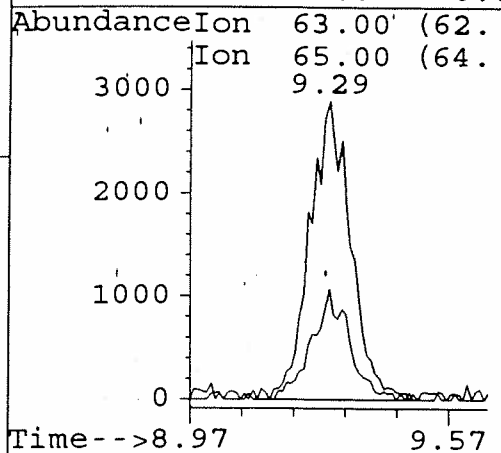
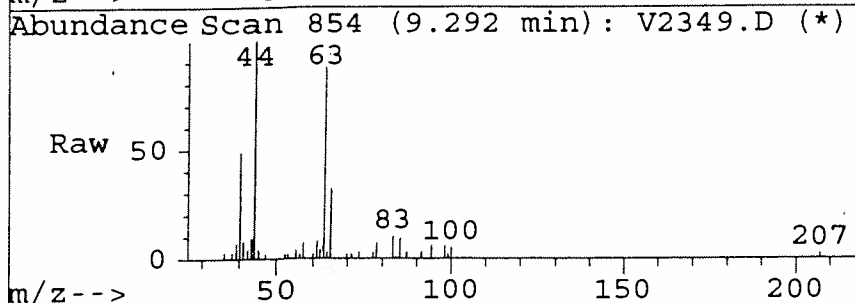


004089



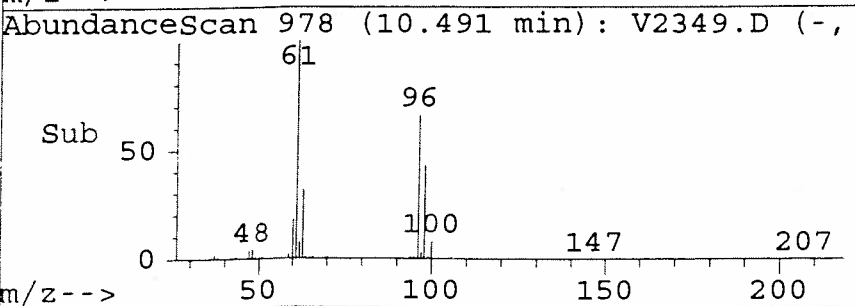
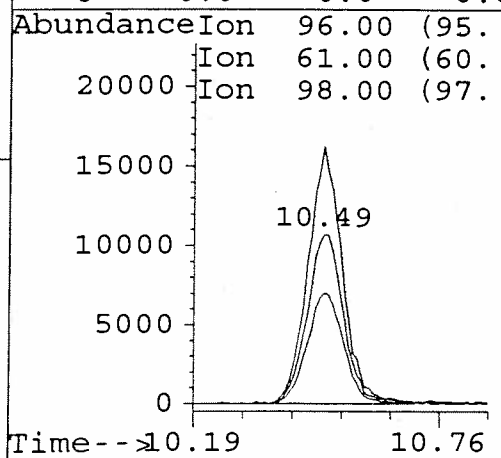
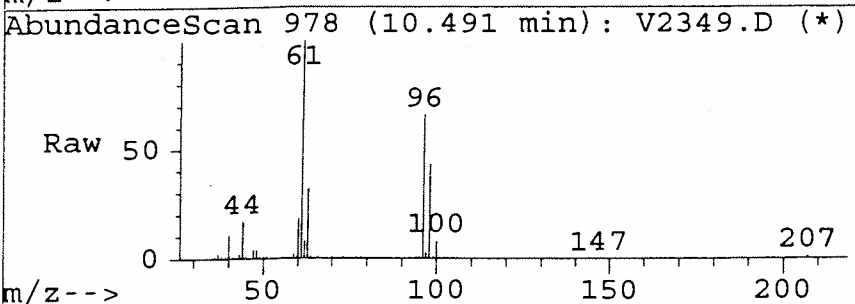
#11
1,1-Dichloroethane
Concen: 0.30 ug/l
RT: 9.29 min Scan# 854
Delta R.T. -0.05 min
Lab File: V2349.D
Acq: 14 Dec 93 12:56 pm

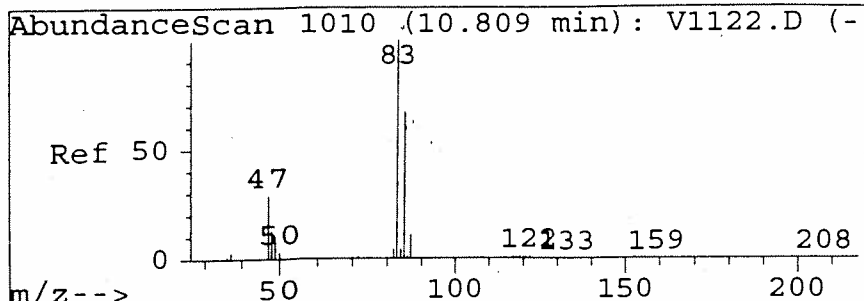
Tgt Ion:63	Resp:	18710
Ion Ratio	Lower	Upper
63 100		
65 34.2	0.0	82.6
0 0.0	0.0	0.0
0 0.0	0.0	0.0



#13
1,2-Dichloroethene (cis-)
Concen: 2.05 ug/l
RT: 10.49 min Scan# 978
Delta R.T. -0.06 min
Lab File: V2349.D
Acq: 14 Dec 93 12:56 pm

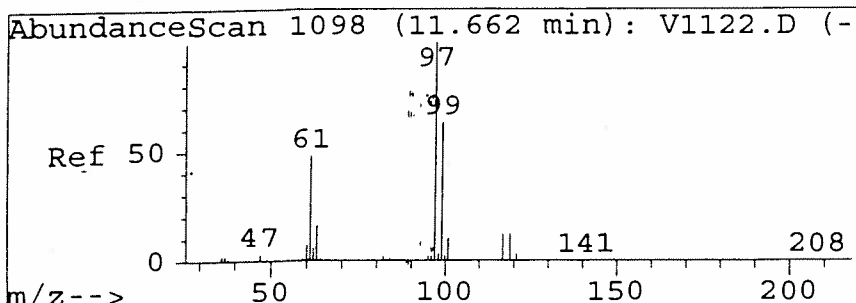
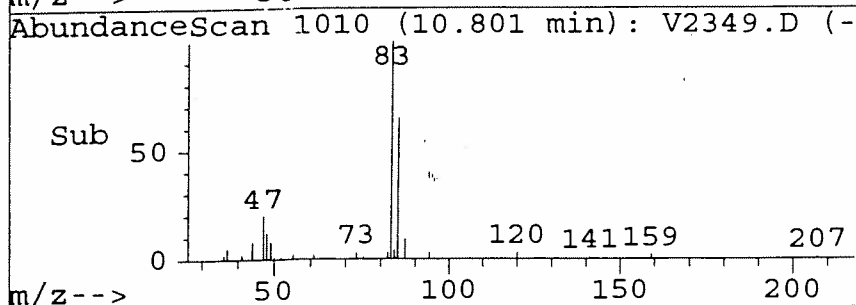
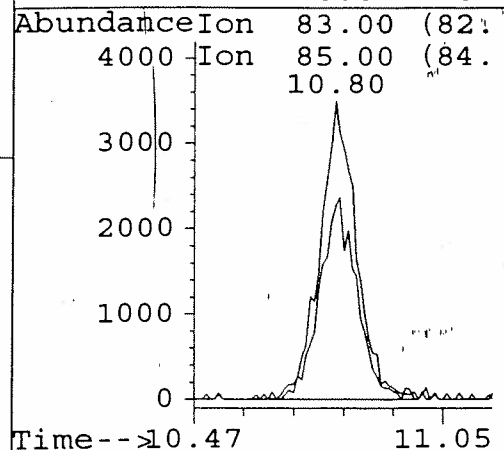
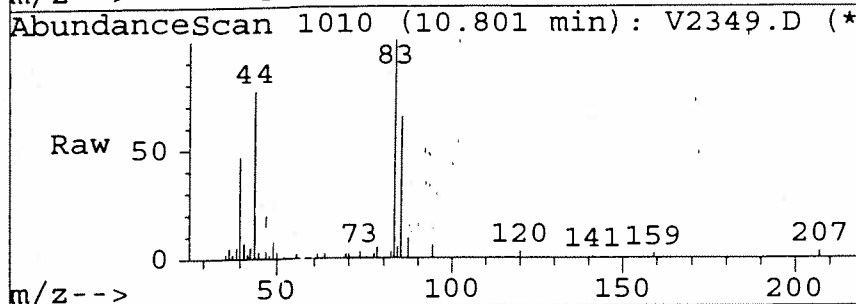
Tgt Ion:96	Resp:	63332
Ion Ratio	Lower	Upper
96 100		
61 143.2	61.5	184.5
98 65.7	32.5	97.5
0 0.0	0.0	0.0





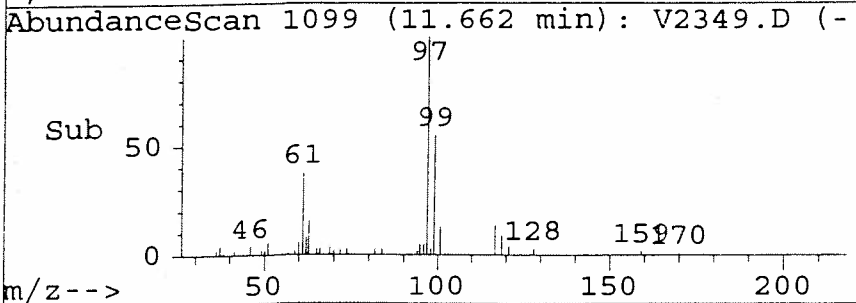
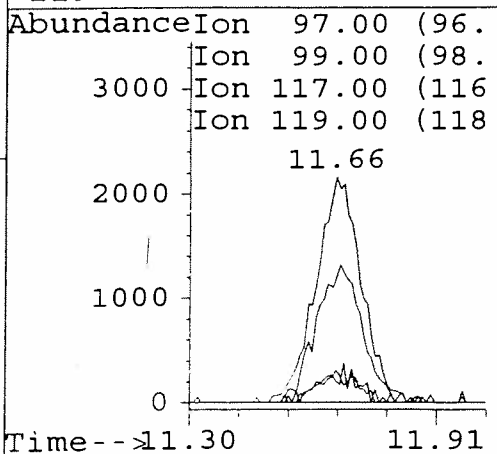
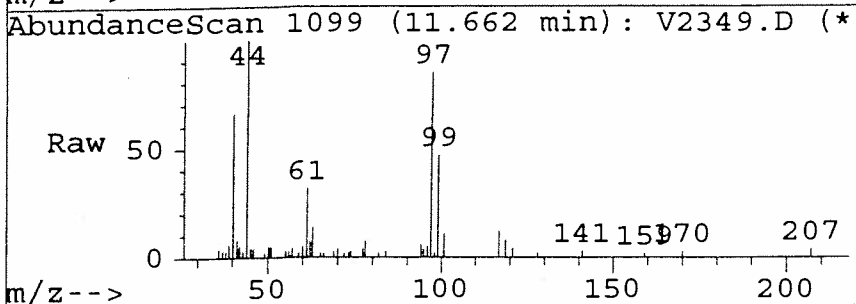
#15
Chloroform
Concen: 0.32 ug/l
RT: 10.80 min Scan# 1010
Delta R.T. -0.06 min
Lab File: V2349.D
Acq: 14 Dec 93 12:56 pm

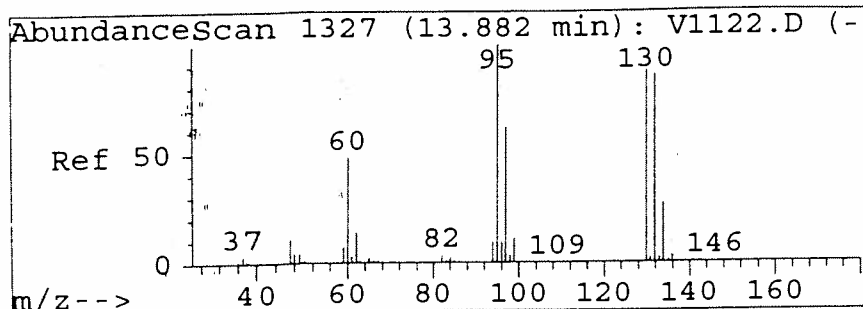
Tgt	Ion:83	Resp:	20512
Ion	Ratio	Lower	Upper
83	100		
85	68.4	15.6	115.6
0	0.0	0.0	0.0
0	0.0	0.0	0.0



#19
1,1,1-Trichloroethane
Concen: 0.25 ug/l
RT: 11.66 min Scan# 1099
Delta R.T. -0.07 min
Lab File: V2349.D
Acq: 14 Dec 93 12:56 pm

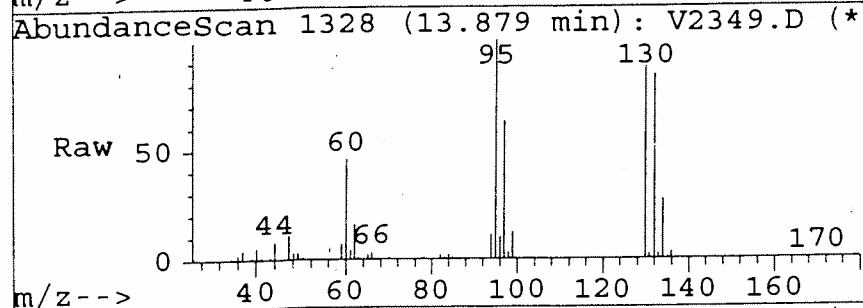
Tgt	Ion:97	Resp:	16680.
Ion	Ratio	Lower	Upper
97	100		
99	0.0	15.6	115.6#
117	7.5	0.0	62.3
119	7.0	0.0	62.0



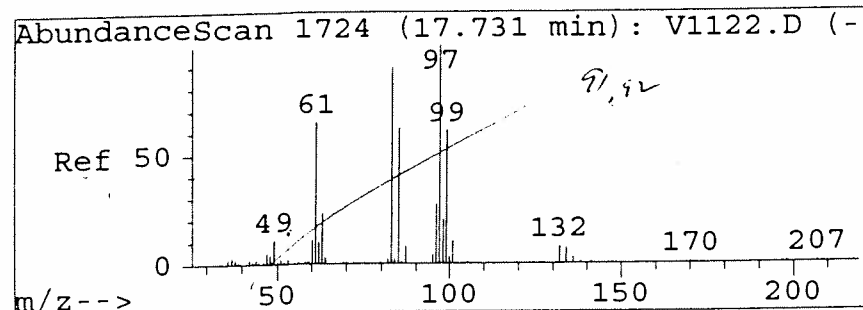
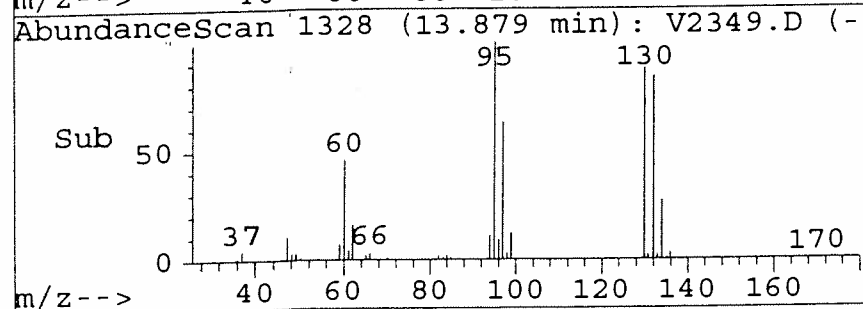
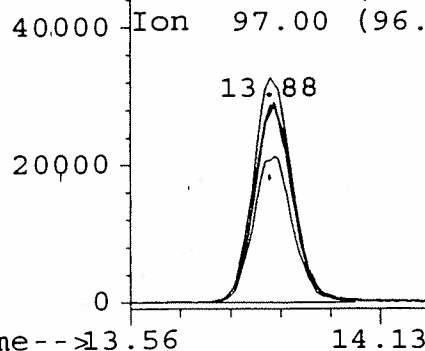


#22
Trichloroethene
Concen: 4.44 ug/l
RT: 13.88 min Scan# 1328
Delta R.T. -0.06 min
Lab File: V2349.D
Acq: 14 Dec 93 12:56 pm

Tgt Ion:130	Resp:	176992
Ion Ratio	Lower	Upper
130	100	
132	98.6	48.4 148.4
95	115.9	59.0 159.0
97	75.8	17.0 117.0

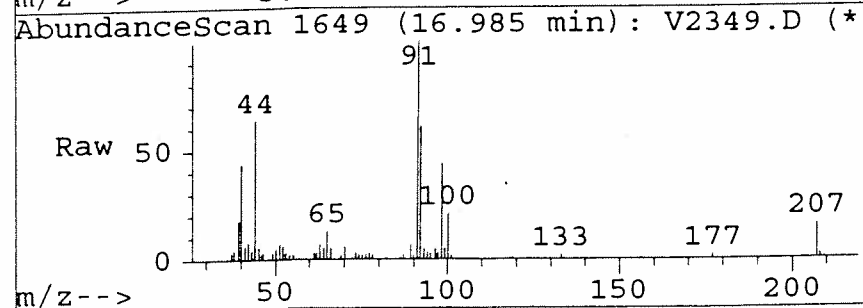


Abundance	Ion	130.00	(129
	Ion	132.00	(131
	Ion	95.00	(94.
	Ion	97.00	(96.

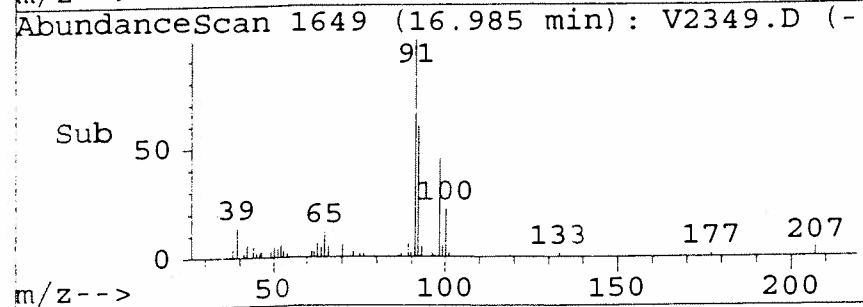
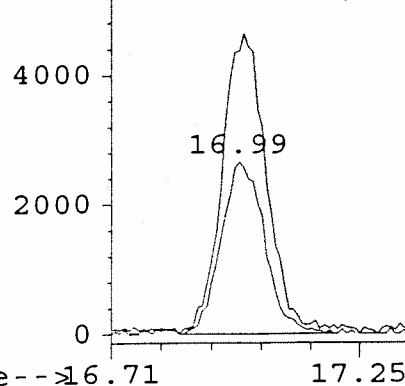


#33
Toluene
Concen: 0.26 ug/l
RT: 16.99 min Scan# 1649
Delta R.T. -0.06 min
Lab File: V2349.D
Acq: 14 Dec 93 12:56 pm

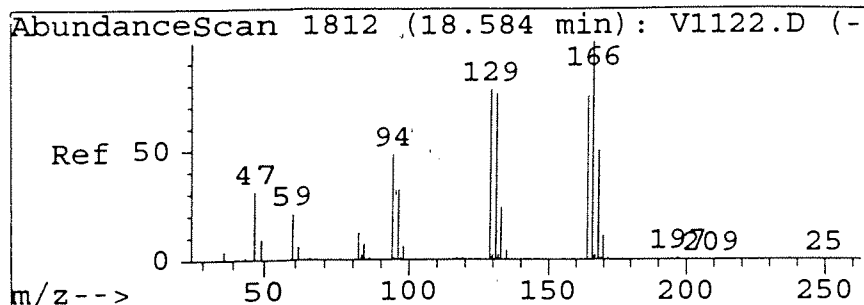
Tgt Ion:92	Resp:	17151
Ion Ratio	Lower	Upper
92	100	
91	178.0	110.8 210.8
0	0.0	0.0 0.0
0	0.0	0.0 0.0



Abundance	Ion	92.00	(91.
	Ion	91.00	(90.

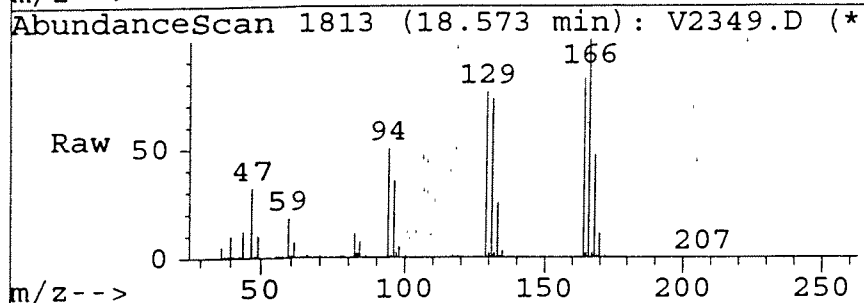


004092



#35
Tetrachloroethene
Concen: 2.58 ug/l
RT: 18.57 min Scan# 1813
Delta R.T. -0.07 min
Lab File: V2349.D
Acq: 14 Dec 93 12:56 pm

Tgt Ion:	164	Resp:	100020
Ion	Ratio	Lower	Upper
164	100		
166	129.9	84.0	184.0
129	99.5	40.0	140.0
131	97.6	40.0	140.0

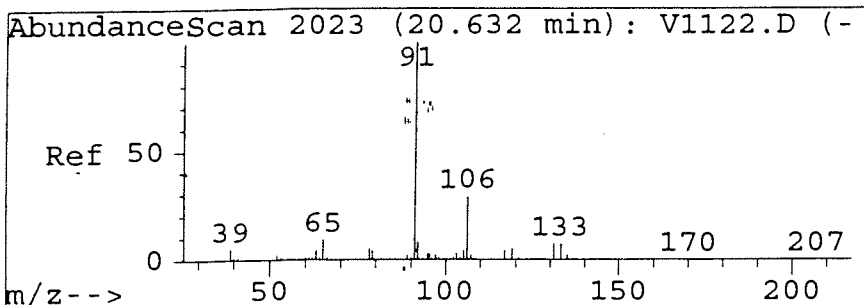
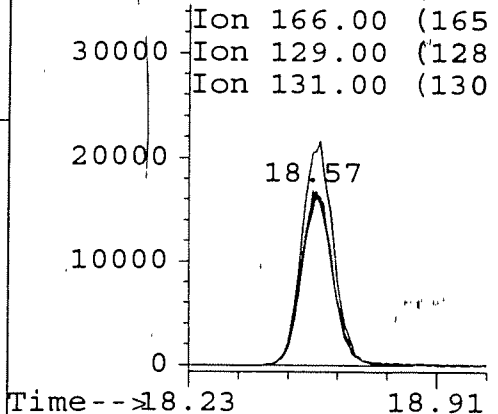
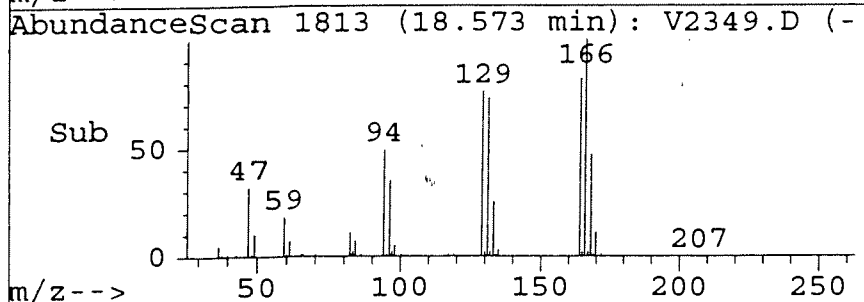


AbundanceIon 164.00 (163

Ion 166.00 (165

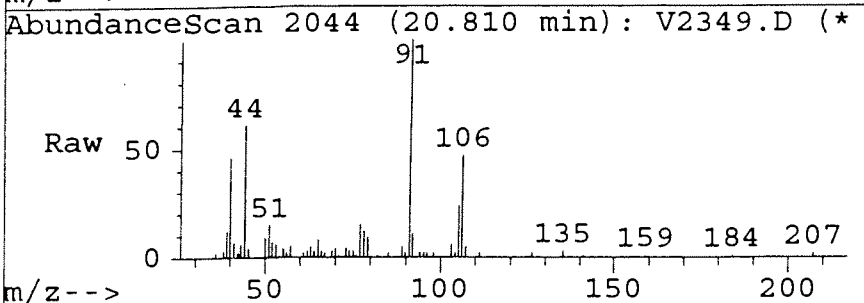
Ion 129.00 (128

Ion 131.00 (130



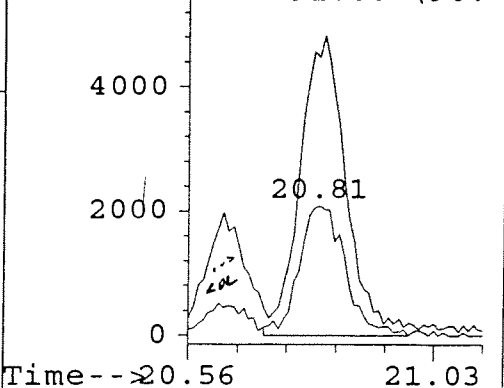
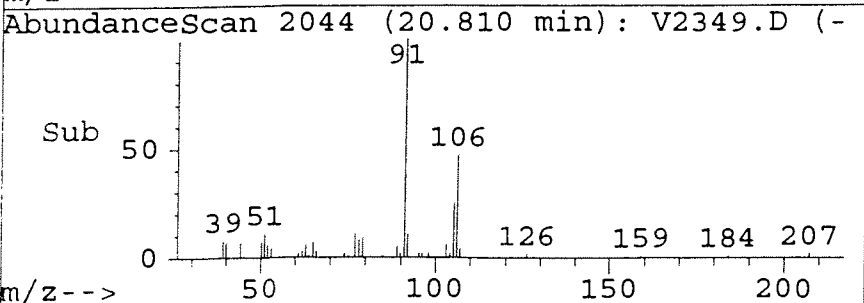
#39
Ethylbenzene
Concen: 0.35 ug/l
RT: 20.81 min Scan# 2044
Delta R.T. 0.13 min
Lab File: V2349.D
Acq: 14 Dec 93 12:56 pm

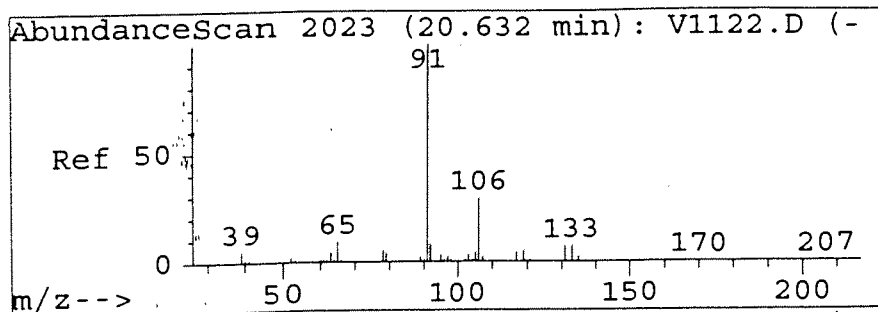
Tgt Ion:	106	Resp:	12965
Ion	Ratio	Lower	Upper
106	100		
91	216.4	140.0	240.0
0	0.0	0.0	0.0
0	0.0	0.0	0.0



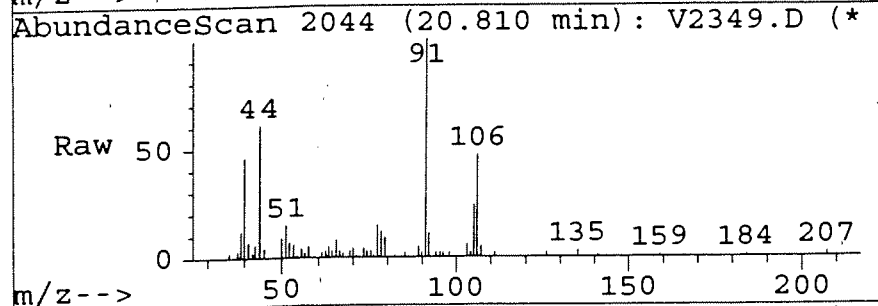
AbundanceIon 106.00 (105

Ion 91.00 (90.

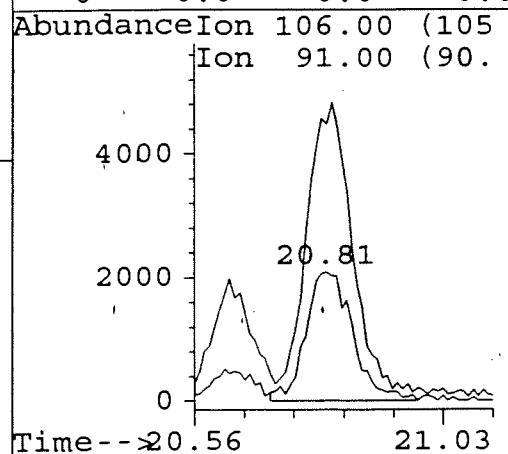
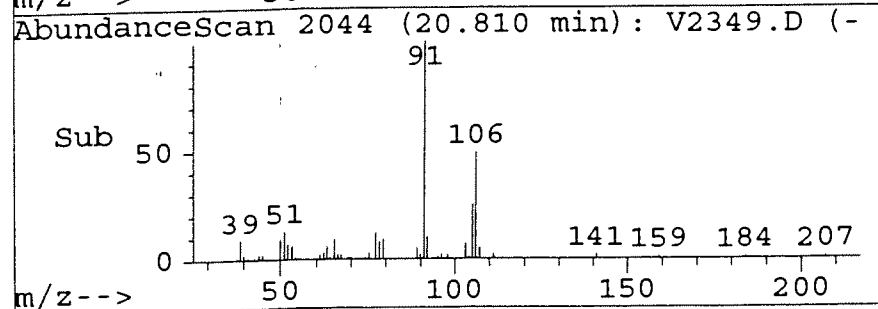




#40
m,p-Xylenes
Concen: 0.26 ug/l
RT: 20.81 min Scan# 2044
Delta R.T. -0.05 min
Lab File: V2349.D
Acq: 14 Dec 93 12:56 pm



Tgt Ion:	106	Resp:	12965
Ion Ratio	Lower	Upper	
106	100		
91	216.4	88.5	265.5
0	0.0	0.0	0.0
0	0.0	0.0	0.0



ok

004094

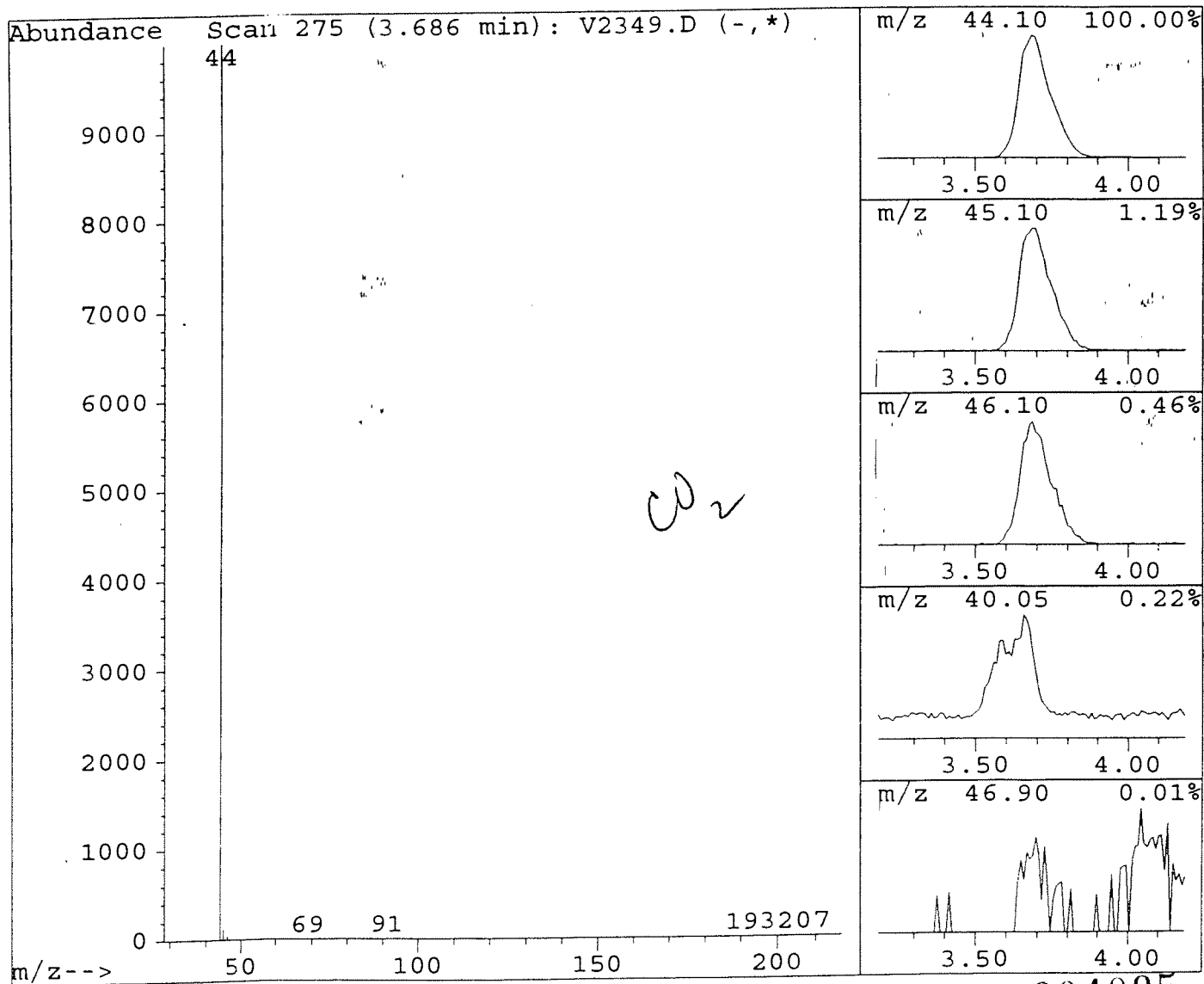
Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2349.D
Acq Time : 14 Dec 93 12:56 pm
Sample : G9312066*1
Misc : GW-1 / SEACOR.SLO / b#822 / 25ML

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
Title : method 524.2
Library : C:\DATABASE\NBS75K.L

R.T.	Conc	Area	Relative to ISTD	R.T.	
3.69	159.98 ug/l	17447053	Methylene Chloride-d2	7.88	
Hit# of	0	Tentative ID	Ref#	CAS#	Qual
1	Unknown		0	000000-00-0	0



Quantitation Report

V04. 524.2 12-12-98
REVIEWED & APPROVED
BY AMS DATE 12/19/93

Data File : C:\HPCHEM\1\DATA\DEC14\V2354.D
Acq Time : 14 Dec 93 4:10 pm
Sample : LAB CONTROL SAMPLE
Misc : LCS822 / SEACOR.SLO / b#822 / 25ML
Quant Time: Dec 15 8:27 1993

Operator: TERRI
Inst : VOA3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Mon Dec 13 08:14:17 1993
Response via : Multiple Level Calibration

BATCH # 888
DATE 12/15/93
ANALYST m

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.89	53	146715	10.00	ug/l	-0.03
24) Fluorobenzene	13.00	96	1300078	10.00	ug/l	-0.05
43) 1,2-Dichlorobenzene-d4	27.27	150	490332	10.00	ug/l	-0.05

System Monitoring Compounds						%Recovery
17) 1,2-Dichloroethane-d4	12.28	65	195333	9.27	ug/l	92.73%
32) Toluene-d8	16.81	98	1102143	9.81	ug/l	98.13%
45) Bromofluorobenzene	23.55	95	618416	11.51	ug/l	115.11%

Target Compounds						Qvalue
2) Chloromethane	4.65	50	52668	2.86	ug/l	92
3) Vinyl Chloride	4.83	62	90919	3.13	ug/l	98
4) Bromomethane	5.47	94	104436	3.50	ug/l	97
5) Chloroethane	5.59	64	71981	3.27	ug/l	90
6) Trichlorofluoromethane	6.06	101	296592	3.99	ug/l m	0
7) 1,1-Dichloroethene	7.13	96	125880	3.90	ug/l	89
9) Methylene Chloride	7.96	84	93826	3.34	ug/l #	44
10) 1,2-Dichloroethene (trans-	8.54	96	146466	3.74	ug/l	89
11) 1,1-Dichloroethane	9.30	63	272056	3.49	ug/l	100
12) 2,2-Dichloropropane	10.43	77	298394	4.08	ug/l	95
13) 1,2-Dichloroethene (cis-)	10.50	96	131737	3.46	ug/l	70
14) Bromochloromethane	11.18	130	65517	3.65	ug/l #	51
15) Chloroform	10.82	83	280634	3.52	ug/l	100
16) 1,1-Dichloropropene	11.98	75	276041	3.84	ug/l	98
18) 1,2-Dichloroethane	12.49	62	85621	3.17	ug/l	97
19) 1,1,1-Trichloroethane	11.68	97	321447	3.87	ug/l	100
20) Carbon Tetrachloride	12.26	117	315376	4.05	ug/l	98
21) Benzene	12.60	78	398236	3.57	ug/l	100
22) Trichloroethene	13.90	130	186431	3.80	ug/l	95
23) 1,2-Dichloropropane	14.26	63	136735	3.42	ug/l	97
25) Dibromomethane	14.99	174	58058	3.55	ug/l	91
26) Bromodichloromethane	14.83	83	214138	3.23	ug/l	98
27) cis-1,3-Dichloropropene	16.15	75	82358	1.61	ug/l	99
28) trans-1,3-Dichloropropene	17.34	75	43780	1.51	ug/l	98
29) 1,3-Dichloropropane	18.36	76	102638	3.24	ug/l	92
30) Dibromochloromethane	19.05	129	105840	3.03	ug/l	98
31) Bromoform	22.97	173	54315	3.16	ug/l	99
33) Toluene	17.00	92	278758	3.69	ug/l	93
34) 1,1,2-Trichloroethane	17.74	97	62736	3.36	ug/l	99
35) Tetrachloroethene	18.60	164	185814	4.16	ug/l	94
36) 1,2-Dibromoethane	19.52	107	81183	3.47	ug/l	100
37) Chlorobenzene	20.53	112	290292	3.52	ug/l	99
38) 1,1,1,2-Tetrachloroethane	20.59	131	133055	3.37	ug/l	98
39) Ethylbenzene	20.64	106	157832	3.73	ug/l m	78

(#) = qualifier out of range (m) = manual integration
V2354.D 524SHORT.M Wed Dec 15 08:28:24 1993

VOA3

004096

Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2354.D
 Acq Time : 14 Dec 93 4:10 pm
 Sample : LAB CONTROL SAMPLE
 Misc : LCS822 / SEACOR.SLO / b#822 / 25ML
 Quant Time: Dec 15 8:27 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Mon Dec 13 08:14:17 1993
 Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
40) m,p-Xylenes	20.83	106	418068	7.25	ug/l	68
41) o-Xylene	21.95	106	184971	3.76	ug/l	69
42) Styrene	22.04	104	267930	3.45	ug/l	80
44) Isopropylbenzene	22.91	105	649441	4.65	ug/l	93
46) Bromobenzene	24.07	77	289248	4.34	ug/l	92
47) 1,1,2,2-Tetrachloroethane	23.30	83	79910	4.01	ug/l	99
48) 1,2,3-Trichloropropane	23.67	75	48516	3.56	ug/l m	35
49) n-Propylbenzene	23.94	91	834418	4.31	ug/l	95
50) 2-Chlorotoluene	24.40	91	513802	4.04	ug/l	98
51) 4-Chlorotoluene	24.50	91	462167	4.44	ug/l	93
52) 1,3,5-Trimethylbenzene	24.34	105	466801	4.16	ug/l	93
53) Tert-Butylbenzene	25.22	119	539667	4.49	ug/l	98
54) 1,2,4-Trimethylbenzene	25.30	105	450539	4.05	ug/l	80
55) Sec-Butylbenzene	25.71	105	813380	4.79	ug/l	96
56) 1,3-Dichlorobenzene	26.26	146	256783	4.38	ug/l	95
57) 1,4-Dichlorobenzene	26.49	146	242424	4.20	ug/l	91
58) p-Isopropyltoluene	26.03	119	603065	4.48	ug/l	99
59) 1,2-Dichlorobenzene	27.33	146	191924	4.15	ug/l	96
60) n-Butylbenzene	26.96	91	704019	4.63	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	29.00	157	13373	3.87	ug/l	77
62) 1,2,4-Trichlorobenzene	31.11	180	148484	4.08	ug/l	98
63) Naphthalene	31.86	128	134787	3.16	ug/l	99
64) Hexachlorobutadiene	31.49	225	189798	4.89	ug/l	94
65) 1,2,3-Trichlorobenzene	32.54	180	113482	4.02	ug/l	96

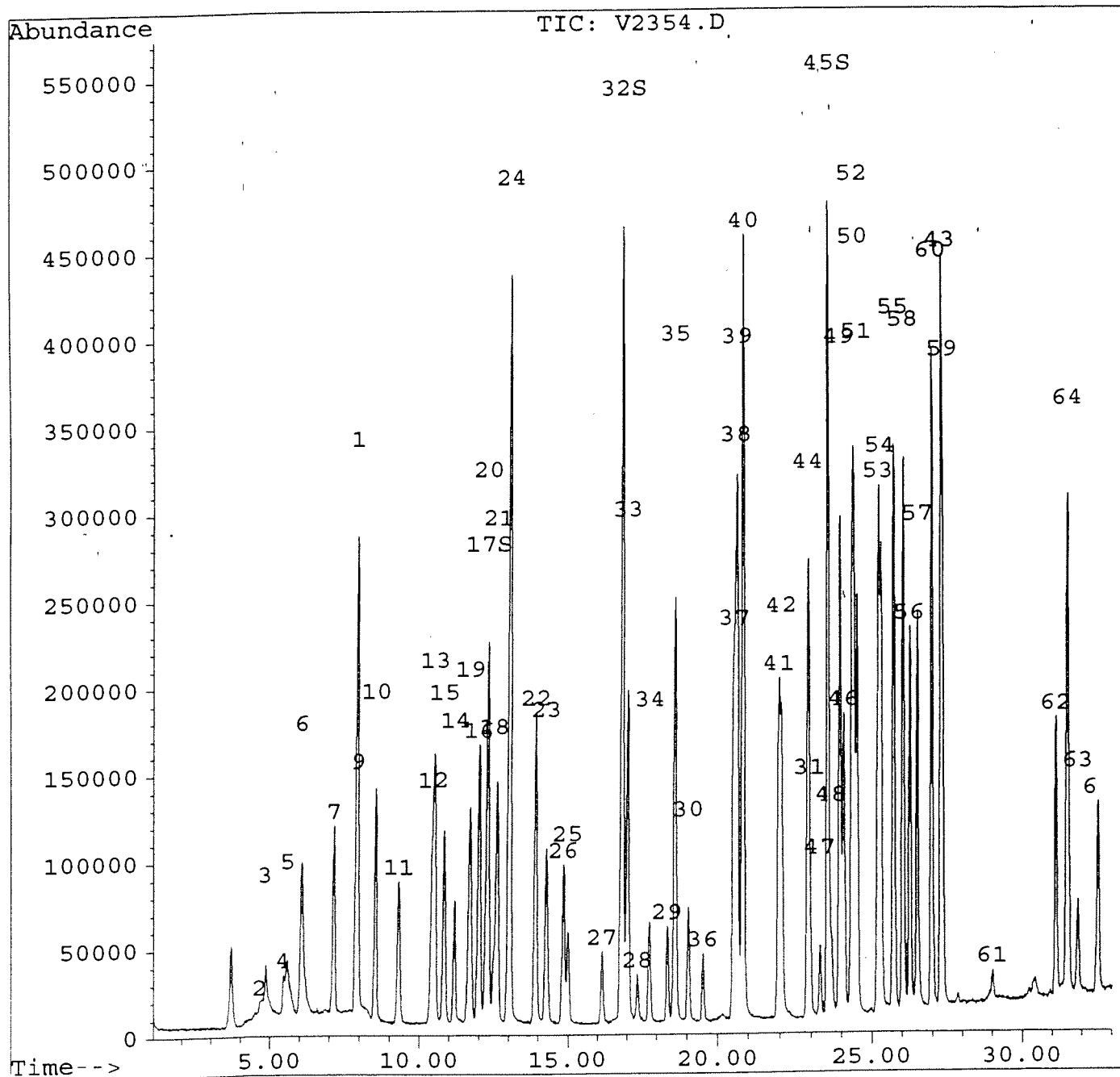
004097

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2354.D
 Acq Time : 14 Dec 93 4:10 pm
 Sample : LAB CONTROL SAMPLE
 Misc : LCS822 / SEACOR.SLO / b#822 / 25ML
 Quant Time: Dec 15 8:27 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Mon Dec 13 08:14:17 1993
 Response via : Multiple Level Calibration



004098

Quantitation Report

VOA-524.2 12-1299

Data File : C:\HPCHEM\1\DATA\DEC14\V2355.D
 Acq Time : 14 Dec 93 4:59 pm
 Sample : DUPLICATE LAB CONTROL SAMPLE
 Misc : LCSDUP822 / SEACOR.SLO / b#822 / 25ML
 Quant Time: Dec 15 8:25 1993

REVIEWED & APPROVED

BY AMS DATE 12/15/93 Operator: TERRI

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Mon Dec 13 08:14:17 1993
 Response via : Multiple Level Calibration

BATCH # 822
 DATE 12/15/93
 ANALYST W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Methylene Chloride-d2	7.88	53	149627	10.00	ug/l	-0.04
24) Fluorobenzene	12.99	96	1341048	10.00	ug/l	-0.06
43) 1,2-Dichlorobenzene-d4	27.28	150	502872	10.00	ug/l	-0.03
System Monitoring Compounds						
17) 1,2-Dichloroethane-d4	12.27	65	196245	9.14	ug/l	91.35%
32) Toluene-d8	16.80	98	1155041	9.97	ug/l	99.70%
45) Bromofluorobenzene	23.55	95	640404	11.62	ug/l	116.23%
Target Compounds						
2) Chloromethane	4.56	50	47435	2.52	ug/l	Qvalue 80
3) Vinyl Chloride	4.80	62	90170	3.04	ug/l	98
4) Bromomethane	5.47	94	107417	3.53	ug/l	92
5) Chloroethane	5.57	64	71641	3.19	ug/l	97
6) Trichlorofluoromethane	6.04	101	304238	4.02	ug/l m	0
7) 1,1-Dichloroethene	7.11	96	131785	4.01	ug/l	87
9) Methylene Chloride	7.95	84	102336	3.57	ug/l #	47
10) 1,2-Dichloroethene (trans-)	8.52	96	154887	3.88	ug/l	89
11) 1,1-Dichloroethane	9.29	63	288617	3.63	ug/l	100
12) 2,2-Dichloropropane	10.43	77	315806	4.23	ug/l	95
13) 1,2-Dichloroethene (cis-)	10.49	96	147125	3.79	ug/l	74
14) Bromochloromethane	11.16	130	69874	3.82	ug/l #	52
15) Chloroform	10.80	83	302633	3.72	ug/l	100
16) 1,1-Dichloropropene	11.98	75	296237	4.05	ug/l	98
18) 1,2-Dichloroethane	12.47	62	91488	3.32	ug/l	98
19) 1,1,1-Trichloroethane	11.67	97	340445	4.02	ug/l	99
20) Carbon Tetrachloride	12.25	117	328920	4.14	ug/l	96
21) Benzene	12.60	78	424301	3.73	ug/l	100
22) Trichloroethene	13.88	130	203131	4.06	ug/l	96
23) 1,2-Dichloropropane	14.25	63	149214	3.66	ug/l	100
25) Dibromomethane	14.98	174	62649	3.71	ug/l	90
26) Bromodichloromethane	14.82	83	229320	3.35	ug/l	96
27) cis-1,3-Dichloropropene	16.13	75	89651	1.70	ug/l	99
28) trans-1,3-Dichloropropene	17.34	75	47880	1.60	ug/l	93
29) 1,3-Dichloropropane	18.36	76	111851	3.42	ug/l	94
30) Dibromochloromethane	19.04	129	117023	3.25	ug/l	100
31) Bromoform	22.96	173	56600	3.19	ug/l	99
33) Toluene	16.99	92	304340	3.91	ug/l	94
34) 1,1,2-Trichloroethane	17.74	97	65288	3.39	ug/l	99
35) Tetrachloroethene	18.59	164	200432	4.35	ug/l	93
36) 1,2-Dibromoethane	19.50	107	88556	3.67	ug/l	98
37) Chlorobenzene	20.52	112	321718	3.79	ug/l	99
38) 1,1,1,2-Tetrachloroethane	20.59	131	146080	3.58	ug/l	99
39) Ethylbenzene	20.64	106	172779	3.96	ug/l m	75

(#) = qualifier out of range (m) = manual integration
 V2355.D 524SHORT.M Wed Dec 15 08:25:54 1993

VOA3

004099

Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2355.D
 Acq Time : 14 Dec 93 4:59 pm
 Sample : DUPLICATE LAB CONTROL SAMPLE
 Misc : LCSDUP822 / SEACOR.SLO / b#822 / 25ML
 Quant Time: Dec 15 8:25 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Mon Dec 13 08:14:17 1993
 Response via : Multiple Level Calibration

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
40) m,p-Xylenes	20.82	106	449146	7.55	ug/l	65
41) o-Xylene	21.95	106	201929	3.98	ug/l	71
42) Styrene	22.03	104	295509	3.69	ug/l	80
44) Isopropylbenzene	22.91	105	702807	4.90	ug/l	93
46) Bromobenzene	24.07	77	318051	4.66	ug/l	93
47) 1,1,2,2-Tetrachloroethane	23.30	83	81578	3.99	ug/l	95
48) 1,2,3-Trichloropropane	23.67	75	53075	3.80	ug/l m	60
49) n-Propylbenzene	23.95	91	903706	4.56	ug/l	96
50) 2-Chlorotoluene	24.40	91	558434	4.29	ug/l	99
51) 4-Chlorotoluene	24.51	91	502348	4.70	ug/l	97
52) 1,3,5-Trimethylbenzene	24.34	105	510070	4.43	ug/l	94
53) Tert-Butylbenzene	25.21	119	576524	4.68	ug/l	98
54) 1,2,4-Trimethylbenzene	25.31	105	489099	4.29	ug/l	80
55) Sec-Butylbenzene	25.72	105	872247	5.00	ug/l	97
56) 1,3-Dichlorobenzene	26.26	146	276419	4.59	ug/l	94
57) 1,4-Dichlorobenzene	26.50	146	270392	4.57	ug/l	93
58) p-Isopropyltoluene	26.04	119	650016	4.70	ug/l	99
59) 1,2-Dichlorobenzene	27.34	146	212010	4.47	ug/l	95
60) n-Butylbenzene	26.97	91	761348	4.88	ug/l	93
61) 1,2-Dibromo-3-Chloropropan	29.02	157	13300	3.75	ug/l	82
62) 1,2,4-Trichlorobenzene	31.12	180	163407	4.37	ug/l	98
63) Naphthalene	31.87	128	146815	3.36	ug/l	98
64) Hexachlorobutadiene	31.50	225	182872	4.60	ug/l m	92
65) 1,2,3-Trichlorobenzene	32.53	180	125230	4.32	ug/l	97

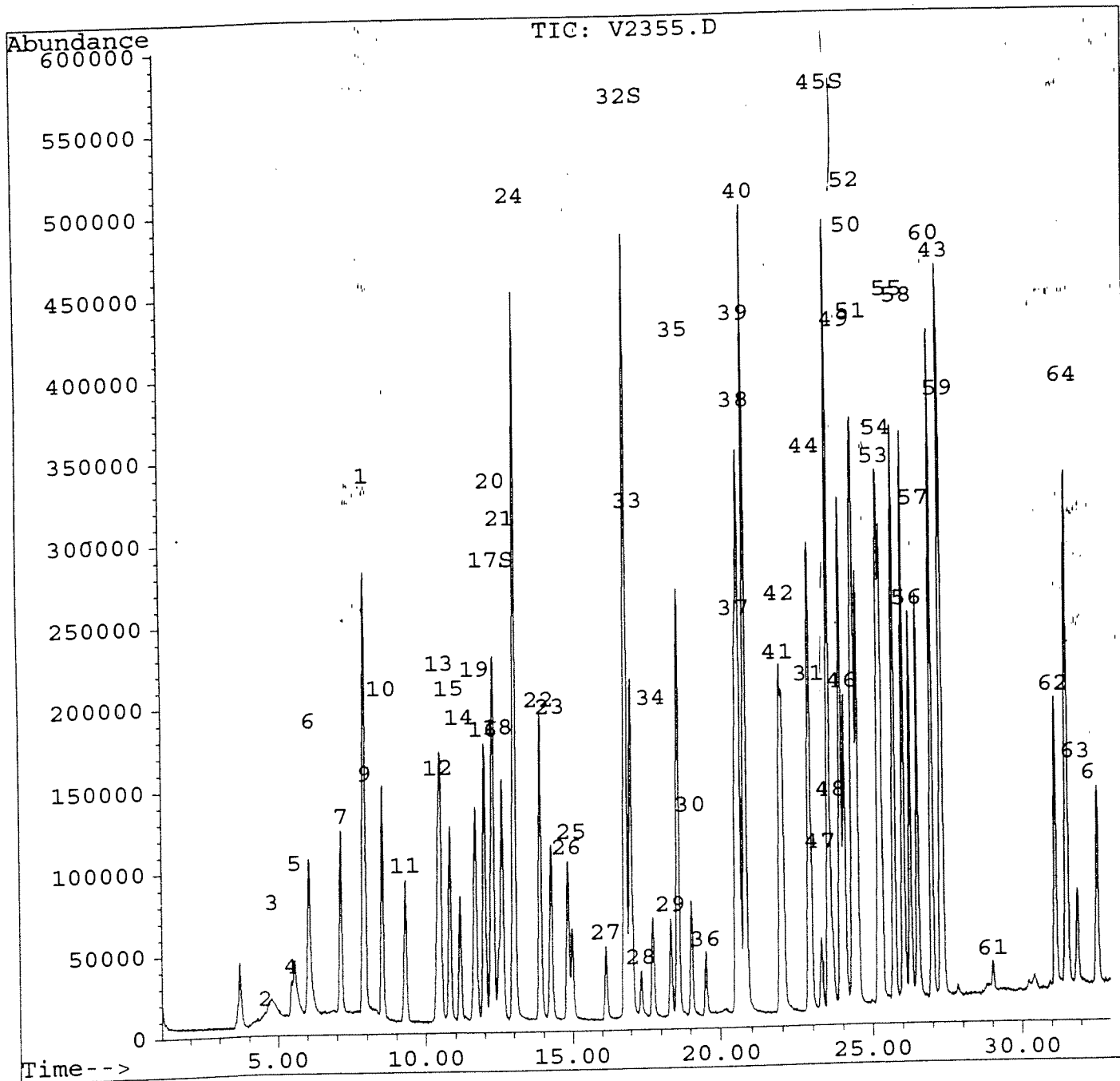
004100

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2355.D
 Acq Time : 14 Dec 93 4:59 pm
 Sample : DUPLICATE LAB CONTROL SAMPLE
 Misc : LCSDUP822 / SEACOR.SLO / b#822 / 25ML
 Quant Time: Dec 15 8:25 1993

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Mon Dec 13 08:14:17 1993
 Response via : Multiple Level Calibration



004101

APPENDIX G

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - LOS ANGELES
REGION - WIP FORMS**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM FOR PETROLEUM HYDROCARBONS

Laboratory Name: BC Analytical

Address: 801 Western Avenue Glendale, CA 91201

Telephone: 818 / 247-5737

Laboratory Certification
(ELAP) No.: 1411 Expiration Date: 12/94

Laboratory Director's Name (Print): James C. Hein

Laboratory Director's Signature: _____

Client: Seacor

Project No.: A0057-001-02

Analytical Method: EPA 418.1
(Circle One)

Other _____

EPA 8015 (Modified)

Date Sampled: _____

Date Received: _____

Date Reported: _____

Sample Matrix: _____

11-30-93

11-30-93

12-14-93

Groundwater

Chain of Custody Received: Yes No

Sample Condition: Good

-- Sample Headspace Description (%): C%

-- Sample Container Material: 40 mL VOA VIAL

ANALYTICAL TEST RESULT*

Reporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$

G93-11-378 -1 -151 -152

mg/L

DATE ANALYZED		12-7-93	12-7-93	12-7-93			
DATE EXTRACTED		12-7-93	12-7-93	12-7-93			
EXTRACTION METHOD		LUFT	LUFT	LUFT			
EXTRACTION MATERIAL		Methylene Chloride	Methylene Chloride	Methylene Chloride			
EXTRACTION DURATION (hr/min)		2min	2min	2min			
DILUTION FACTOR		1:1	1:1	1:1			
LAB SAMPLE I.D.		643-11-378-1	378-151	378-152			
CLIENT SAMPLE I.D.		GW-2	GW-2	GW-2			
PETROLEUM HYDROCARBONS		MDL	MB				
Total Petroleum Hydrocarbons (EPA 418.1)							
Gasoline (EPA 8015M)		1mg/L	0				
Jet Fuel (EPA 8015M)							
Kerosene (EPA 8015M)							
Diesel (EPA 8015M)		1mg/L	0				
Other (identified below)							
SURROGATE		SPK CONC	ACP%	MB %RC	%RC -1	%RC -151	%RC -152
Naphthalene		2.00	60-137	100	94	64	72

* = Report Any Value \geq MDL.

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed
SPK CONC = Spiking Concentration; ACP % = Acceptable Range of Percent; %RC = % Recovery

REQUIREMENT

- Provide details of corrective actions in any out of control events (e.g., re-calibration, blank contamination, etc.).
- Analytical results are not to be blank adjusted.
- Lowest concentration injected for initial calibration should not exceed three times of laboratory method detection limits.
- Chemical standards for QC check samples and calibration should be obtained from different supply sources.
- Raw data for calibration standards, quality control check samples, and selected environmental samples must be submitted upon request.

ANALYTICAL TEST RESULT*

Reporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$ mg/L

G93-11-378 -2 -3 -4

DATE ANALYZED	12-7-93	12-7-93	12-7-93			
DATE EXTRACTED	12-7-93	12-7-93	12-7-93			
EXTRACTION METHOD	LUFT	LUFT	LUFT			
EXTRACTION MATERIAL	Methylene Chloride	—	—			
EXTRACTION DURATION (hr/min)	2min	—	—			
DILUTION FACTOR	1:1	1:1	1:1			
LAB SAMPLE I.D.	G93-11-378-2	378-3	378-4			
CLIENT SAMPLE I.D.	GW-3	GW-4	GW-5			
PETROLEUM HYDROCARBONS	MDL	MB				
Total Petroleum Hydrocarbons (EPA 418.1)						
Gasoline (EPA 8015M)	1mg/L					
Jet Fuel (EPA 8015M)						
Kerosene (EPA 8015M)						
Diesel (EPA 8015M)	1mg/L					
Other (identified below)						
SURROGATE	SPK CONC	ACP%	MB %RC	%RC -2	%RC -3	%RC -4
Naphthalene	2.00	60-137		95	95	97

* = Report Any Value \geq MDL.

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed
SPK CONC = Spiking Concentration; ACP % = Acceptable Range of Percent; %RC = % Recovery

REQUIREMENT

1. Provide details of corrective actions in any out of control events (e.g., re-calibration, blank contamination, etc.).
2. Analytical results are not to be blank adjusted.
3. Lowest concentration injected for initial calibration should not exceed three times of laboratory method detection limits.
4. Chemical standards for QC check samples and calibration should be obtained from different supply sources.
5. Raw data for calibration standards, quality control check samples, and selected environmental samples must be submitted upon request.

ANALYTICAL TEST RESULT*

Reporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$

G93-11-378 -5 -6 -7

mg/L

DATE ANALYZED	12-7-93	→	
DATE EXTRACTED	12-7-93	→	
EXTRACTION METHOD	LUFT	→	
EXTRACTION MATERIAL	Methylene Chloride	→	
EXTRACTION DURATION (hr/min)	2 min	→	
DILUTION FACTOR	1:1	1:1	1:1
LAB SAMPLE I.D.	GW-6	BLANK	TRIP
CLIENT SAMPLE I.D.	G93-11-378-5	378-6	378-7
PETROLEUM HYDROCARBONS	MDL	MB	
Total Petroleum Hydrocarbons (EPA 418.1)			
Gasoline (EPA 8015M)	1 mg/L		
Jet Fuel (EPA 8015M)			
Kerosene (EPA 8015M)			
Diesel (EPA 8015M)	1 mg/L		
Other (identified below)			
SURROGATE	SPK CONC	ACP%	MB %RC
			%RC -5
			%RC -6
			%RC -7
Naphthalene	2.00	60-137	98
			63
			68

* = Report Any Value \geq MDL.

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

SPK CONC = Spiking Concentration; ACP % = Acceptable Range of Percent; %RC = % Recovery

REQUIREMENT

1. Provide details of corrective actions in any out of control events (e.g., re-calibration, blank contamination, etc.).
2. Analytical results are not to be blank adjusted.
3. Lowest concentration injected for initial calibration should not exceed three times of laboratory method detection limits.
4. Chemical standards for QC check samples and calibration should be obtained from different supply sources.
5. Raw data for calibration standards, quality control check samples, and selected environmental samples must be submitted upon request.

QA/QC REPORT
Reporting Unit (Circle One): mg/kg mg/l

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE PERFORMED: 12-7-93
BATCH #: 93129
LAB SAMPLE I.D.: G93-11-378-1

ANALYTE	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD
Gasoline	10mg/L	6.23	62	6.32	63	1.43	53-128	30%
Diesel	20mg/L	14.9	75	15.96	80	6.87	53-128	30%

II. Laboratory Quality Control Check Sample

DATE PERFORMED: 12-8-93
BATCH #: 93129
LAB SAMPLE I.D.: GC3-12-762-1LC/LT LCS#1

ANALYTE	SPK CONC	RESULT	%RECOVERY	ACP %
Gasoline	10mg/L	9.19	92	80-120
Diesel	20mg/L	19.2	96	80-120

III. Calibration Standard

3a. Submit Copies of Calibration Curves and Reference Standards

3b. Fill in Table Below If Quantification of Sample Result Is Based On Response Factor (RF)

COMPOUND	INITIAL CALIBRATION DATE: <u>9-10-93</u>		DAILY CALIBRATION DATE: _____	
	INITIAL RF _{avg}	%RSD ≤20%	DAILY RF DAILY CONCENTRATION	%DIFF w/RF _{avg} ≤±15%
Gasoline	7.558×10^{-5}	NA	46/50	8%
Diesel	5.4079×10^{-5}	NA	101/100	1%

NA = Not applicable. BSA does not use RSD to determine initial calibration suitability. BSA uses correlation factor of best line.
SPK CONC = Spiking Concentration; %MS = Percent Recovery of MS; %MSD = Percent Recovery of MSD
RPD = Relative Percent Difference; ACP = Acceptable Range of Percent
INITIAL RF_{avg} = Average Response Factor From Initial Calibration
DAILY RF = Response Factor From Daily Calibration
%RSD = Percent Relative Standard Deviation; %DIFF = Percent Difference

ANALYST: Audrey Morris-Saiz

DATE: 1-21-94

QA/OC REPORT

Reporting Unit (Circle One): mg/kg mg/l

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE PERFORMED: _____

BATCH #: _____

LAB SAMPLE I.D.: _____

ANALYTE	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD

II. Laboratory Quality Control Check Sample

DATE PERFORMED: 12-8-93

BATCH #: 93129

LAB SAMPLE I.D.: GC3-12-763-1LC/LT LCS #2

ANALYTE	SPK CONC	RESULT	%RECOVERY	ACP %
Gasoline	10mg/L	9.05	90	80-120
Diesel	20mg/L	19.1	95	80-120

III. Calibration Standard

3a. Submit Copies of Calibration Curves and Reference Standards

3b. Fill in Table Below If Quantification of Sample Result Is Based On Response Factor (RF)

COMPOUND	INITIAL CALIBRATION DATE: _____		DAILY CALIBRATION DATE: _____	
	INITIAL RF _{ave}	%RSD ≤20%	DAILY RF	%DIFF w/RF _{ave} ≤±15%

SPK CONC = Spiking Concentration;
 %MS = Percent Recovery of MS; %MSD = Percent Recovery of MSD
 RPD = Relative Percent Difference; ACP = Acceptable Range of Percent
 INITIAL RF_{ave} = Average Response factor from Initial Calibration
 DAILY RF = Response factor from Daily Calibration
 %RSD = Percent Relative Standard Deviation; %DIFF = Percent Difference

ANALYST: _____

DATE: _____

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM FOR PETROLEUM HYDROCARBONS

Laboratory Name: BC Analytical

Address: 801 Western Avenue Glendale, CA 91201

Telephone: 818/247-5737

Laboratory Certification
(ELAP) No.: 1411 Expiration Date: 12/94

Laboratory Director's Name (Print): James C. Hein

Laboratory Director's Signature: _____

Client: Seacor

Project No.: A0057-001-02

Analytical Method: EPA 418.1 EPA 8015 (Modified)
(Circle One)

Other _____

Date Sampled: _____

Date Received: _____

Date Reported: _____

Sample Matrix: _____

12-07-93

12-07-93

12-22-93

Groundwater

Chain of Custody Received: Yes No

Sample Condition: Good

-- Sample Headspace Description (%): 0

-- Sample Container Material: 40 mL Vial

ANALYTICAL TEST RESULT

Reporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$ mg/L
 G93-12-066 -1

DATE ANALYZED		12-9-93					
DATE EXTRACTED		12-9-93					
EXTRACTION METHOD		LUFT					
EXTRACTION MATERIAL		Methylene chloride					
EXTRACTION DURATION (hr/min)		2min					
DILUTION FACTOR		1:1					
LAB SAMPLE I.D.		G9312066-1					
CLIENT SAMPLE I.D.		GW-1					
PETROLEUM HYDROCARBONS		MDL	MB				
Total Petroleum Hydrocarbons (EPA 418.1)							
Gasoline (EPA 8015M)		1mg/L	0				
Jet Fuel (EPA 8015M)							
Kerosene (EPA 8015M)							
Diesel (EPA 8015M)		1mg/L	0				
Other (identified below)							
SURROGATE	SPK CONC	ACP%	MB %RC	%RC G9312066-1	%RC LCS#1	%RC LCS#2	
Naphthalene	2.00	60-137	96	94	74	95	

0 = Report Any Value \geq MDL.
 MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed
 SPK CONC = Spiking Concentration; ACP % = Acceptable Range of Percent; %RC = % Recovery

REQUIREMENT

1. Provide details of corrective actions in any out of control events (e.g., re-calibration, blank contamination, etc.).
2. Analytical results are not to be blank adjusted.
3. Lowest concentration injected for initial calibration should not exceed three times of laboratory method detection limits.
4. Chemical standards for QC check samples and calibration should be obtained from different supply sources.
5. Raw data for calibration standards, quality control check samples, and selected environmental samples must be submitted upon request.

QA/QC REPORT

Reporting Unit (Circle One): mg/kg mg/l

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE PERFORMED: _____

BATCH #: _____

LAB SAMPLE I.D.: _____

ANALYTE	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD

II. Laboratory Quality Control Check Sample

DATE PERFORMED: 12-9-93

BATCH #: 93131

LAB SAMPLE I.D.: GC312-939-1 LC/LT LCS#1

ANALYTE	SPK CONC	RESULT	%RECOVERY	ACP %
Gasoline	10 mg/L	6.73 mg/L	67%	80-120
Diesel	20 mg/L	15.9 mg/L	80%	80-120

III. Calibration Standard

3a. Submit Copies of Calibration Curves and Reference Standards

3b. Fill in Table Below If Quantification of Sample Result Is Based On Response Factor (RF)

COMPOUND	INITIAL CALIBRATION DATE: 12-2-93		DAILY CALIBRATION DATE: 12-9-93	
	INITIAL RF _{avg}	%RSD ≤20%	DAILY RF DAILY CONCENTRATION	%DIFF w/RF _{avg} ≤±15%
Gasoline	8.2072X10 ⁻⁵	NA	47/50	6%
Diesel	5.8843X10 ⁻⁵	NA	105/100	5%

NA = Not applicable. BCA does not use RSD to determine initial calibration suitability. BCA uses correlation factor of best line.
 SPK CONC = Spiking Concentration;
 %MS = Percent Recovery of MS; %MSD = Percent Recovery of MSD
 RPD = Relative Percent Difference; ACP = Acceptable Range of Percent
 INITIAL RF_{avg} = Average Response Factor From Initial Calibration
 DAILY RF = Response Factor From Daily Calibration
 %RSD = Percent Relative Standard Deviation; %DIFF = Percent Difference

ANALYST: Candice Morris Saly

DATE: 1-21-94

QA/OC REPORT

Reporting Unit (Circle One): mg/kg mg/l

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE PERFORMED: _____

BATCH #: _____

LAB SAMPLE I.D.: _____

ANALYTE	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD

II. Laboratory Quality Control Check Sample

DATE PERFORMED: 12-10-93

BATCH #: 93131

LAB SAMPLE I.D.: GC3-12-940-1LC/LT LCS #2

ANALYTE	SPK CONC	RESULT	%RECOVERY	ACP %
Gasoline	10mg/L	8.77mg/L	88%	80-120
Diesel	20mg/L	19.3mg/L	97%	80-120

III. Calibration Standard

3a. Submit Copies of Calibration Curves and Reference Standards

3b. Fill in Table Below If Quantification of Sample Result Is Based On Response Factor (RF)

COMPOUND	INITIAL CALIBRATION DATE: _____		DAILY CALIBRATION DATE: _____	
	INITIAL RF _{ave}	%RSD ≤20%	DAILY RF	%DIFF w/RF _{ave} ≤±15%

SPK CONC = Spiking Concentration;
 %MS = Percent Recovery of MS; %MSD = Percent Recovery of MSD
 RPD = Relative Percent Difference; ACP = Acceptable Range of Percent
 INITIAL RF_{ave} = Average Response Factor From Initial Calibration
 DAILY RF = Response Factor From Daily Calibration
 %RSD = Percent Relative Standard Deviation; %DIFF = Percent Difference

ANALYST: _____

DATE: _____

LABORATORY REPORT FORM

004113

ANALYTICAL TEST RESULT^a
Reporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$

DATE ANALYZED		12/14/93	12/14/93		
DATE EXTRACTED		12/14/93	12/14/93		
DILUTION FACTOR		1	1		
LAB SAMPLE I.D.		M-Brock	066-1		
CLIENT SAMPLE I.D.			GW-1		
COMPOUND^b	MDL	MB			
Bromobenzene	0.2	ND	ND		
Bromodichloromethane	0.2				
Bromoform	0.2				
Bromomethane	0.5				
Carbon tetrachloride	0.2				
Chloroethane	0.2				
Chloroform	0.2		0.30		
1-Chlorohexane			ND		
Chloromethane	0.2				
Dibromochloromethane	0.2				
Dibromomethane	0.2				
Dichlorodifluoromethane					
1,1-Dichloroethane (1,1-DCA)	0.2		0.30		
1,2-Dichloroethane (1,2-DCA)	0.2		ND		
1,1-Dichloroethylene (1,1-DCE)	0.2				
trans-1,2-Dichloroethylene	0.2				
Dichloromethane	0.2				
1,2-Dichloropropane	0.2				
cis-1,3-Dichloropropylene	0.2				
trans-1,3-Dichloropropylene	0.2				
1,1,1,2-Tetrachloroethane	0.2				
1,1,2,2-Tetrachloroethane	0.2				
Tetrachloroethylene (PCE)	0.2		2.6		
1,1,1-Trichloroethane (111-TCA)	0.2		0.30		
1,1,2-Trichloroethane (112-TCA)	0.2		ND		
Trichloroethylene (TCE)	0.2		4.4		
1,2,3-Trichloropropane	0.2		ND		
Trichlorofluoromethane	0.2				
Vinyl chloride	0.2				
Benzene	0.2	ND	ND		
Chlorobenzene	0.2				
1,2-Dichlorobenzene	0.2				
1,3-Dichlorobenzene	0.2				
1,4-Dichlorobenzene	0.2				
Ethyl benzene	0.2				
Toluene	0.2		0.30		

ANALYTICAL TEST RESULT (cont'd)

COMPOUND ^b	MDL	MB				
m,p-Xylenes	0.2	ND	0.30			
o-Xylene	0.2	1	ND			
Acetone		ND	ND			
Acrolein						
Acrylonitrile						
Bromochloromethane	0.2					
n-Butylbenzene	0.2					
sec-Butylbenzene	0.2					
tert-Butylbenzene	0.2					
2-Chloroethylvinyl ether						
2-Chlorotoluene	0.2					
4-Chlorotoluene	0.2					
Dichlorodifluoromethane						
cis-1,2-Dichloroethylene	0.2		2.1			
1,3-Dichloropropane	0.2		ND			
2,2-Dichloropropane	0.2					
1,1-Dichloropropylene	0.2					
Ethylene dibromide (EDB)						
Hexachlorobutadiene	0.2					
Isopropylbenzene	0.2					
p-Isopropyltoluene	0.2					
Methyl Ethyl Ketone						
Methyl Isobutyl Ketone						
Naphthalene	0.2					
n-Propylbenzene	0.2					
Styrene	0.2					
1,2,3-Trichlorobenzene	0.2					
1,2,4-Trichlorobenzene	0.2					
1,2,4-Trimethylbenzene	0.2					
1,3,5-Trimethylbenzene	0.2					
1,1,2-Trichloro-trifluoroethane						
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	%RC	%RC
1,2-Dichloroethane-d4	10	37- 144		91		
4-Bromofluorobenzene	10	32- 138		122		
Toluene-d8	10	39- 144		97		

a = Report Any Value \geq MDL; b = Listed Compounds Are Ordered by Laboratory Analytical Methods: Halogenated, Aromatic, then Remaining Compounds Identified by GC/MS.

QA/QC REPORT

Reporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE PERFORMED: _____

BATCH #: _____

LAB SAMPLE I.D.: _____

ANALYTE	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD
Bromomethane	4						47-142	30
1,1-Dichloroethane	4						59-140	30
1,2-Dichloroethane	4						62-147	30
Benzene	4						54-137	30
Dibromomethane	4						50-150	30
Toluene	4						64-136	30
Chlorobenzene	4						61-159	30
1,1,2,2-Tetrachloroethane	4						66-131	30
1,3-Dichlorobenzene	4						59-155	30
1,2,3-Trichlorobenzene	4						54-129	30

II. Laboratory Quality Control Check Sample - I

DATE PERFORMED: 12/14/93

BATCH #: 93822

LAB SAMPLE I.D.: _____

ANALYTE	SPK CONC	RESULT	%RECOVERY	ACP %
1,1-Dichloroethane	4	3.90	94	80-120
1,2-Dichloroethane	4	3.17	79	80-120
Benzene	4	3.57	89	80-120
Dibromomethane	4	3.55	89	80-120
Toluene	4	3.69	92	80-120

Chlorobenzene	4	352	22	80-120
1,1,2,2-Tetrachloroethane	4	4.01	100	80-120
1,3-Dichlorobenzene	4	4.34	110	80-120

ANALYST: T. Walsh

DATE: 1/21/94

QA/QC REPORTReporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$ **I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)**

DATE PERFORMED: _____

BATCH #: _____

LAB SAMPLE I.D.: _____

ANALYTE	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD
Bromomethane	4						47-142	30
1,1-Dichloroethane	4						59-140	30
1,2-Dichloroethane	4						62-147	30
Benzene	4						54-137	30
Dibromomethane	4						50-150	30
Toluene	4						64-136	30
Chlorobenzene	4						61-159	30
1,1,2,2-Tetrachloroethane	4						66-131	30
1,3-Dichlorobenzene	4						59-155	30
1,2,3-Trichlorobenzene	4						54-129	30

II. Laboratory Quality Control Check Sample - 2

DATE PERFORMED: 12/14/93

BATCH #: 93622

LAB SAMPLE I.D.: _____

ANALYTE	SPK CONC	RESULT	%RECOVERY	ACP %
1,1-Dichloroethane	4	3.63	91	80-120
1,2-Dichloroethane	4	3.32	83	80-120
Benzene	4	3.73	93	80-120
Dibromomethane	4	3.71	93	80-120
Toluene	4	3.71	94	80-120

Chlorobenzene	4	3.79	95	80-120
1,1,2,2-Tetrachloroethane	4	3.99	100	80-120
1,3-Dichlorobenzene	4	4.59	115	80-120

ANALYST: _____

DATE: _____

QA/QC REPORT

III. Calibration Standard

MOST RECENT
INITIAL
CALIBRATION
DATE: 11-3-93

DAILY
CALIBRATION
DATE: 12-14-93

SUPPLY SOURCE: _____

COMPOUND	INITIAL RF _{...}	%RSD ^a	DAILY RF	%DIFF ^b w/RF _{...}
Bromobenzene				
Bromochloromethane				
Bromodichloromethane				
Bromoform*				
Bromomethane				
Carbon tetrachloride				
Chloroethane				
Chloroform*				
1-Chlorohexane				
Chloromethane*				
Dibromochloromethane				
Dibromomethane				
Dichloromethane (Methylene chloride)				
1,1-Dichloroethane* (1,1-DCA)				
1,2-Dichloroethane (1,2-DCA)				
1,1-Dichloroethylene* (1,1-DCE)				
trans- 1,2-Dichloroethylene				
1,2-Dichloropropane*				
cis- 1,3-Dichloropropylene				
trans- 1,3-Dichloropropylene				
1,1,1,2- Tetrachloroethane				
1,1,1,2,2- Tetrachloroethane*				
Tetrachloroethylene (PCE)				

III. Calibration Standard (cont'd)

COMPOUND	INITIAL RF ₁₀₀	%RSD ^d	DAILY RF	%DIFF ^e w/RF ₁₀₀
1,1,1-Trichloroethane (1,1,1-TCA)				
1,1,2-Trichloroethane (1,1,2-TCA)				
Trichloroethylene (TCE)				
1,2,3-Trichloropropane				
Trichlorofluoromethane				
Vinyl chloride* (VC)				
Benzene				
Chlorobenzene*				
1,2-Dichlorobenzene				
1,3-Dichlorobenzene				
1,4-Dichlorobenzene				
Ethyl benzene*				
Toluene*				
m,p-Xylenes				
o-Xylene				
Acetone				
Acrolein				
Acrylonitrile				
n-Butylbenzene				
sec-Butylbenzene				
tert-Butylbenzene				
2-Chloroethylvinyl ether				
2-Chlorotoluene				
4-Chlorotoluene				
Dichloro- difluoromethane				
cis- 1,2-Dichloroethylene				
trans- 1,2-Dichloroethylene				
1,3-Dichloropropane				
2,2-Dichloropropane				
1,1-Dichloropropylene				
Ethylene dibromide (EDB)				
Hexachlorobutadiene				
Isopropylbenzene				

III. Calibration Standard (cont'd)

COMPOUND ^c	INITIAL RF _{ave}	%RSD ^d	DAILY RF	%DIFF ^e w/RF _{ave}
p-Isopropyltoluene				
Methyl Ethyl Ketone				
Methyl Isobutyl Ketone				
Naphthalene				
n-Propylbenzene				
Styrene				
1,2,3-Trichlorobenzene				
1,2,4-Trichlorobenzene				
1,2,4-Trimethylbenzene				
1,3,5-Trimethylbenzene				
1,1,2-Trichloro- trifluoroethane				

SPK CONC = Spiking Concentration ($\leq 5 \times \text{POL}$); POL = Practical Quantitation Limit
 %MS = Percent Recovery of MS; %MSD = Percent Recovery of MSD; RPD = Relative Percent Difference;
 ACP = Acceptable Range of Percent; INITIAL RF_{ave} = Average Response Factor from Initial Calibration;
 DAILY RF = Response Factor from Daily Calibration; %RSD = Percent Relative Standard Deviation;
 %DIFF = Percent Difference; c = Listed Compounds are Ordered by Laboratory Analytical Methods: Halogenated,
 Aromatic, then Remaining Compounds Identified by GC/MS.
^dValue $\leq 10\%$ for GC EPA Methods 500 & 600 Series, $\leq 20\%$ for GC EPA Methods 8000 Series, $\leq 30\%$ for GC/MS Methods.
^eValue $\leq 20\%$ for GC EPA Methods 500 & 600 Series, $\leq 15\%$ for GC EPA Methods 8000 Series, $\leq 25\%$ for GC/MS Methods.
^f=Calibration Check Compounds (CCC) for GC/MS Method;
^g=System Performance Check Compounds (SPCC) for GC/MS Method

REQUIREMENT

1. Indicate any modification made to the EPA Methods (e.g., testing constituent list, columns).
2. Provide details of corrective actions in any out of control events (e.g., re-calibration, blank contamination, etc.).
3. Co-elution must be resolved prior to reporting, except for xylenes.
4. Second column or MS confirmation must be performed for all compounds detected.
5. Analytical results are not to be blank adjusted.
6. Chemical standards for QC check samples and calibration should be obtained from different supply sources.
7. Any change of column, detector, chemical standard, etc. shall result in a new initial calibration.
8. Lowest concentration injected for initial calibration should not exceed three times of laboratory method detection limits.
9. Re-calibration is required whenever the RF from daily calibration is not within the range specified in item "e" above from initial calibration RF_{ave}.
10. Tentative identified compounds and all unidentified peaks must be reported.
11. Chromatogram for calibration standards, quality control check samples, and selected environmental samples must be submitted upon request.

Response Factor Report VOA3

Initial Calibration

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:30:04 1993
 Response via : Initial Calibration

EPA 524.2

Instrument 537-C3

11-3-93

Calibration Files

1 =V1916.D 2 =V1917.D 3 =V1918.D
 4 =V1919.D 5 =V1920.D

Compound		1	2	3	4	5	Avg	%RSD
-----ISTD-----								
1)	Methylene Chloride-d2	1.630	1.024	1.206	1.287	1.131	1.256	18.37
2)	Chloromethane	1.832	1.894	2.057	2.011	2.121	1.983	5.96
3)	Vinyl Chloride	2.406	1.877	1.885	1.946	2.059	2.035	10.82
4)	Bromomethane	1.578	1.421	1.481	1.462	1.553	1.499	4.33
5)	Chloroethane	4.100	4.793	5.266	5.416	5.729	5.061	12.53
6)	Trichlorofluoromethane	2.030	2.095	2.243	2.228	2.394	2.198	6.44
7)	1,1-Dichloroethene	3.382	3.821	4.250	4.543	4.694	4.138	13.00
8)	Freon 113	2.641	1.823	1.722	1.669	1.710	1.913	21.48
9)	Methylene Chloride	2.801	2.572	2.668	2.577	2.712	2.666	3.61
10)	1,2-Dichloroethene (trans	6.262	5.049	5.117	5.007	5.142	5.315	10.01
11)	1,1-Dichloroethane	4.864	4.899	5.233	4.887	5.070	4.990	3.17
12)	2,2-Dichloropropane	3.048	2.456	2.487	2.449	2.536	2.595	9.85
13)	1,2-Dichloroethene (cis-)	1.291	1.231	1.219	1.157	1.213	1.222	3.90
14)	Bromochloromethane	6.202	5.224	5.278	5.070	5.402	5.435	8.19
15)	Chloroform	4.907	4.638	5.000	4.800	5.127	4.894	3.83
16)	1,1-Dichloropropene	1.449	1.490	1.471	1.403	1.364	1.436	3.58
17) S	1,2-Dichloroethane-d4	2.173	1.818	1.751	1.727	1.745	1.843	10.19
18)	1,2-Dichloroethane	6.174	5.363	5.629	5.471	5.677	5.663	5.51
19)	1,1,1-Trichloroethane	4.967	5.064	5.550	5.285	5.674	5.308	5.73
20)	Carbon Tetrachloride	8.382	7.322	7.516	7.180	7.612	7.602	6.14
21)	Benzene	3.354	3.193	3.443	3.260	3.485	3.347	3.64
22)	Trichloroethene	3.130	2.653	2.623	2.566	2.645	2.723	8.43
23)	1,2-Dichloropropane	-----ISTD-----						
24)	Fluorobenzene	0.139	0.124	0.120	0.123	0.124	0.126	6.12
25)	Dibromomethane	0.576	0.498	0.480	0.493	0.502	0.510	7.44
26)	Bromodichloromethane	0.441	0.382	0.371	0.383	0.390	0.393	6.94
27)	cis-1,3-Dichloropropene	0.257	0.215	0.203	0.218	0.220	0.223	9.18
28)	trans-1,3-Dichloropropene	0.259	0.246	0.234	0.239	0.240	0.244	4.00
29)	1,3-Dichloropropane	0.304	0.261	0.251	0.261	0.266	0.269	7.65
30)	Dibromochloromethane	0.129	0.129	0.129	0.134	0.140	0.132	3.65
31)	Bromoform	0.851	0.871	0.871	0.872	0.855	0.864	1.17
32) S	Toluene-d8	0.659	0.555	0.557	0.556	0.574	0.580	7.73
33)	Toluene	0.170	0.140	0.132	0.138	0.138	0.144	10.54
34)	1,1,2-Trichloroethane	0.341	0.332	0.345	0.343	0.355	0.343	2.34
35)	Tetrachloroethene	0.184	0.176	0.174	0.182	0.185	0.180	2.64
36)	1,2-Dibromoethane	0.739	0.599	0.596	0.612	0.622	0.634	9.47
37)	Chlorobenzene	0.315	0.296	0.299	0.300	0.309	0.304	2.56
38)	1,1,1,2-Tetrachloroethane	0.345	0.307	0.322	0.321	0.331	0.325	4.25
39)	Ethylbenzene	0.499	0.420	0.424	0.430	0.445	0.444	7.27
40)	m,p-Xylenes	0.412	0.363	0.366	0.368	0.383	0.378	5.41
1)	o-Xylene	0.681	0.567	0.558	0.585	0.598	0.598	8.19
+2)	Styrene							

Response Factor Report VOA3

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Wed Nov 03 16:30:04 1993
Response via : Initial Calibration

Calibration Files

1 =V1916.D 2 =V1917.D 3 =V1918.D
4 =V1919.D 5 =V1920.D

Compound	1	2	3	4	5	Avg	%RSD
43) 1,2-Dichlorobenzene-d4	-----ISTD-----						
44) Isopropylbenzene	3.189	2.920	2.912	2.599	2.628	2.850	8.53
45) S Bromofluorobenzene	1.179	1.199	1.119	1.019	0.962	1.096	9.34
46) Bromobenzene	1.571	1.440	1.341	1.219	1.219	1.358	11.13
47) 1,1,2,2-Tetrachloroethane	0.522	0.436	0.380	0.350	0.343	0.406	18.37
48) 1,2,3-Trichloropropane	0.388	0.274	0.257	0.242	0.227	0.278	23.14
49) n-Propylbenzene	4.542	3.997	3.984	3.593	3.604	3.944	9.83
50) 2-Chlorotoluene	3.116	2.656	2.481	2.354	2.350	2.591	12.31
51) 4-Chlorotoluene	2.284	2.289	2.107	1.989	1.955	2.125	7.43
52) 1,3,5-Trimethylbenzene	2.678	2.362	2.284	2.056	2.070	2.290	11.11
53) Tert-Butylbenzene	2.887	2.440	2.455	2.244	2.230	2.451	10.83
54) 1,2,4-Trimethylbenzene	2.907	2.291	2.182	1.987	1.966	2.267	16.88
55) Sec-Butylbenzene	3.763	3.539	3.585	3.232	3.208	3.466	6.90
56) 1,3-Dichlorobenzene	1.398	1.231	1.166	1.073	1.050	1.184	11.86
57) 1,4-Dichlorobenzene	1.386	1.225	1.159	1.067	1.047	1.177	11.65
) p-Isopropyltoluene	3.189	2.739	2.780	2.519	2.515	2.748	10.00
59) 1,2-Dichlorobenzene	1.150	0.976	0.935	0.836	0.815	0.942	14.24
60) n-Butylbenzene	3.567	3.104	3.173	2.872	2.795	3.102	9.79
61) 1,2-Dibromo-3-Chloropropa	0.092	0.075	0.065	0.061	0.059	0.070	19.47
62) 1,2,4-Trichlorobenzene	0.900	0.760	0.743	0.672	0.638	0.743	13.63
63) Naphthalene	1.242	0.985	0.864	0.649	0.608	0.870	29.81
64) Hexachlorobutadiene	0.911	0.793	0.828	0.738	0.687	0.791	10.86
65) 1,2,3-Trichlorobenzene	0.663	0.581	0.632	0.519	0.486	0.576	12.90

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2346.D

Acq Time : 14 Dec 93 10:59 am

Sample : VSTD010

Misc : 10 PPB VOA 524.2 STD / / b#822 / 25ML

Operator: TERRI

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M

Title : method 524.2

Last Update : Mon Dec 13 08:14:17 1993

Response via : Multiple Level Calibration

*2 out
OK w/ 12/14/93*

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev (Min)
1	Methylene Chloride-d2	1.000	1.000	0.0	121	-0.03
2	Chloromethane	1.256	0.763	39.3#	77	0.00
3	Vinyl Chloride	1.983	2.149	-8.4	126	-0.03
4	Bromomethane	2.035	1.436	29.4#	92	-0.03
5	Chloroethane	1.499	1.604	-7.0	131	-0.04
6	Trichlorofluoromethane	5.061	3.256	35.7#	75	-0.04
7	1,1-Dichloroethene	2.198	2.654	-20.8	143	-0.04
8	Freon 113	4.138	4.533	-9.5	129	-0.03
9	Methylene Chloride	1.913	1.357	29.0#	95	-0.04
10	1,2-Dichloroethene (trans-)	2.666	3.058	-14.7	139	-0.04
11	1,1-Dichloroethane	5.315	4.002	24.7	95	-0.05
12	2,2-Dichloropropane	4.990	4.842	3.0	112	-0.05
13	1,2-Dichloroethene (cis-)	2.595	2.036	21.5	99	-0.05
	Bromochloromethane	1.222	1.325	-8.4	131	-0.05
	Chloroform	5.435	5.377	1.1	123	-0.04
16	1,1-Dichloropropene	4.894	4.855	0.8	118	-0.04
17 S	1,2-Dichloroethane-d4	1.436	1.342	6.5	110	-0.05
18	1,2-Dichloroethane	1.843	1.381	25.1#	95	-0.05
19	1,1,1-Trichloroethane	5.663	4.503	20.5	97	-0.06
20	Carbon Tetrachloride	5.308	5.656	-6.6	123	-0.04
21	Benzene	7.602	8.125	-6.9	131	-0.04
22	Trichloroethene	3.347	3.707	-10.7	130	-0.04
23	1,2-Dichloropropane	2.723	2.248	17.5	104	-0.05
24	Fluorobenzene	1.000	1.000	0.0	112	-0.05
25	Dibromomethane	0.126	0.141	-12.1	132	-0.05
26	Bromodichloromethane	0.510	0.529	-3.7	124	-0.05
27	cis-1,3-Dichloropropene	0.393	0.354	9.9	107	-0.05
28	trans-1,3-Dichloropropene	0.223	0.206	7.3	114	-0.04
29	1,3-Dichloropropane	0.244	0.262	-7.7	126	-0.04
30	Dibromochloromethane	0.269	0.272	-1.4	122	-0.05
31	Bromoform	0.132	0.137	-3.9	120	-0.05
32 S	Toluene-d8	0.864	0.854	1.2	110	-0.05
33	Toluene	0.580	0.654	-12.6	132	-0.04
34	1,1,2-Trichloroethane	0.144	0.145	-1.0	123	-0.04
35	Tetrachloroethene	0.343	0.392	-14.3	128	-0.05
36	1,2-Dibromoethane	0.180	0.201	-11.6	130	-0.04
37	Chlorobenzene	0.634	0.630	0.6	119	-0.05
	1,1,1,2-Tetrachloroethane	0.304	0.319	-5.0	120	-0.04
	Ethylbenzene	0.325	0.379	-16.6	132	-0.04
40	m,p-Xylenes	0.444	0.465	-4.7	123	-0.04
41	o-Xylene	0.378	0.425	-12.4	131	-0.05

(#) = Out of Range

V2346.D 524SHORT.M

Tue Dec 14 11:36:47 1993

VOA3

Page 1

004125

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC14\V2346.D

Acq Time : 14 Dec 93 10:59 am

Sample : VSTD010

Misc : 10 PPB VOA 524.2 STD / / b#822 / 25ML

Operator: TERRI

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524SHORT.M

Title : method 524.2

Last Update : Mon Dec 13 08:14:17 1993

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRFF	%Dev	Area%	Dev (Min)
42	Styrene	0.598	0.620	-3.7	125	-0.06
43	1,2-Dichlorobenzene-d4	1.000	1.000	0.0	112	-0.03
44	Isopropylbenzene	2.850	3.105	-9.0	120	-0.05
45 S	Bromofluorobenzene	1.096	1.158	-5.7	116	-0.04
46	Bromobenzene	1.358	1.439	-6.0	120	-0.05
47	1,1,2,2-Tetrachloroethane	0.406	0.427	-5.1	126	-0.05
48	1,2,3-Trichloropropane	0.278	0.305	-9.7	133	-0.04
49	n-Propylbenzene	3.944	4.158	-5.4	117	-0.05
50	2-Chlorotoluene	2.591	2.613	-0.8	118	-0.05
51	4-Chlorotoluene	2.125	2.337	-10.0	124	-0.05
52	1,3,5-Trimethylbenzene	2.290	2.424	-5.8	119	-0.04
53	Tert-Butylbenzene	2.451	2.578	-5.2	118	-0.04
54	1,2,4-Trimethylbenzene	2.267	2.265	0.1	116	-0.05
55	Sec-Butylbenzene	3.466	3.748	-8.1	117	-0.05
56	1,3-Dichlorobenzene	1.197	1.381	-15.4	126	-0.04
57	1,4-Dichlorobenzene	1.177	1.263	-7.4	122	-0.04
58	p-Isopropyltoluene	2.748	2.862	-4.1	115	-0.04
59	1,2-Dichlorobenzene	0.942	0.983	-4.4	118	-0.03
60	n-Butylbenzene	3.102	3.172	-2.3	112	-0.04
61	1,2-Dibromo-3-Chloropropane	0.070	0.071	-1.2	123	-0.04
62	1,2,4-Trichlorobenzene	0.743	0.770	-3.6	116	-0.05
63	Naphthalene	0.870	0.756	13.1	98	-0.04
64	Hexachlorobutadiene	0.791	0.923	-16.7	125	-0.04
65	1,2,3-Trichlorobenzene	0.576	0.587	-1.9	104	-0.05

004126

LABORATORY REPORT FORM

004127

ANALYTICAL TEST RESULT^a
Reporting Unit (Circle One): $\mu\text{g}/\text{kg}$ $\mu\text{g}/\text{l}$

DATE ANALYZED		12/3/93	12/3/93	12/6/93	12/6/93
DATE EXTRACTED		12/3/93	12/3/93	12/6/93	12/6/93
DILUTION FACTOR		1	1	1	1
LAB SAMPLE I.D.		H. Blank	374-1	374-2	374-3
CLIENT SAMPLE I.D.			GW-2	GW-3	GW-4
COMPOUND ^b	MDL	MB			
Bromobenzene	0.2	ND	ND	ND	ND
Bromodichloromethane	0.2				
Bromoform	0.2				
Bromomethane	0.5				
Carbon tetrachloride	0.2				
Chloroethane	0.2				
Chloroform	0.2		0.33	0.30	0.30
1-Chlorohexane			ND	ND	ND
Chloromethane	0.2				
Dibromochloromethane	0.2				
Dibromomethane	0.2				
Dichlorodifluoromethane					
1,1-Dichloroethane (1,1-DCA)	0.2				
1,2-Dichloroethane (1,2-DCA)	0.2				
1,1-Dichloroethylene (1,1-DCE)	0.2			0.40	
trans-1,2-Dichloroethylene	0.2			ND	
Dichloromethane	0.2				
1,2-Dichloropropane	0.2				
cis-1,3-Dichloropropylene	0.2				
trans-1,3-Dichloropropylene	0.2				
1,1,1,2-Tetrachloroethane	0.2				
1,1,2,2-Tetrachloroethane	0.2				
Tetrachloroethylene (PCE)	0.2		1.7	1.6	0.30
1,1,1-Trichloroethane (111-TCA)	0.2		0.37	0.60	ND
1,1,2-Trichloroethane (112-TCA)	0.2		ND	ND	1
Trichloroethylene (TCE)	0.2		29	15	0.60
1,2,3-Trichloropropane	0.2		ND	ND	ND
Trichlorofluoromethane	0.2				
Vinyl chloride	0.2				
Benzene	0.2	ND	ND	ND	ND
Chlorobenzene	0.2				
1,2-Dichlorobenzene	0.2				
1,3-Dichlorobenzene	0.2				
1,4-Dichlorobenzene	0.2				
Ethyl benzene	0.2				
Toluene	0.2			0.20	

ANALYTICAL TEST RESULT (cont'd)

COMPOUND ^b		MDL	MB			
m,p-Xylenes		0.2	ND	ND	ND	ND
o-Xylene		0.2	1	1	1	1
Acetone			ND	ND	ND	ND
Acrolein						
Acrylonitrile						
Bromochloromethane		0.2				
n-Butylbenzene		0.2				
sec-Butylbenzene		0.2				
tert-Butylbenzene		0.2				
2-Chloroethylvinyl ether						
2-Chlorotoluene		0.2				
4-Chlorotoluene		0.2				
Dichlorodifluoromethane						
cis-1,2-Dichloroethylene		0.2		0.40		
1,3-Dichloropropane		0.2		ND		
2,2-Dichloropropane		0.2				
1,1-Dichloropropylene		0.2				
Ethylene dibromide (EDB)						
Hexachlorobutadiene		0.2				
Isopropylbenzene		0.2				
p-Isopropyltoluene		0.2				
Methyl Ethyl Ketone						
Methyl Isobutyl Ketone						
Naphthalene		0.2				
n-Propylbenzene		0.2				
Styrene		0.2				
1,2,3-Trichlorobenzene		0.2				
1,2,4-Trichlorobenzene		0.2				
1,2,4-Trimethylbenzene		0.2				
1,3,5-Trimethylbenzene		0.2				
1,1,2-Trichloro-trifluoroethane						
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	%RC	%RC
1,2-Dichloroethane-d4	10	37- 144		91	93	96
4-Bromofluorobenzene	10	32- 138		122	122	120
Toluene-d8	10	39- 144		100	97	99

a = Report Any Value \geq MDL; b = Listed Compounds Are Ordered by Laboratory Analytical Methods: Halogenated, Aromatic, then Remaining Compounds Identified by GC/MS.

QA/QC REPORT

Reporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE PERFORMED: 12-3-93
 BATCH #: 93 815
 LAB SAMPLE I.D.:

ANALYTE	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD
Bromomethane	4	3.74	95	3.83	96	1	47-142	30
1,1-Dichloroethane	4	3.83	96	3.94	99	3	59-140	30
1,2-Dichloroethane	4	3.37	84	3.45	86	2	62-147	30
Benzene	4	3.76	94	3.67	97	3	54-137	30
Dibromomethane	4	3.56	89	3.86	97	8	50-150	30
Toluene	4	4.0	100	4.31	108	8	64-136	30
Chlorobenzene	4	3.67	92	3.94	99	7	61-159	30
1,1,2,2-Tetrachloroethane	4	4.15	104	4.26	107	3	66-131	30
1,3-Dichlorobenzene	4	4.64	116	4.66	116	6	59-155	30
1,2,3-Trichlorobenzene	4	4.27	107	4.28	107	6	54-129	30

II. Laboratory Quality Control Check Sample

DATE PERFORMED: 12-3-93
 BATCH #: 93 415
 LAB SAMPLE I.D.:

ANALYTE	SPK CONC	RESULT	%RECOVERY	ACP %
1,1-Dichloroethane	4	3.54	89	80-120
1,2-Dichloroethane	4	3.23	81	80-120
Benzene	4	3.54	89	80-120
Dibromomethane	4	3.44	96	80-120
Toluene	4	3.56	90	80-120

Chlorobenzene	4	3.41	85	80-120
1,1,2,2-Tetrachloroethane	4	3.82	96	80-120
1,3-Dichlorobenzene	4	4.15	104	80-120

ANALYST: T. W. Hall

DATE: 1/21/94

QA/QC REPORT

III. Calibration Standard

MOST RECENT
INITIAL
CALIBRATION
DATE: 11-3-93

DAILY
CALIBRATION
DATE: 12-3-93

SUPPLY SOURCE: _____

COMPOUND	INITIAL RF _{...}	%RSD ^a	DAILY RF	%DIFF ^a w/RF _{...}
Bromobenzene				
Bromochloromethane				
Bromodichloromethane				
Bromoform*				
Bromomethane				
Carbon tetrachloride				
Chloroethane				
Chloroform*				
1-Chlorohexane				
Chloromethane*				
Dibromochloromethane				
Dibromomethane				
Dichloromethane (Methylene chloride)				
1,1-Dichloroethane* (1,1-DCA)				
1,2-Dichloroethane (1,2-DCA)				
1,1-Dichloroethylene* (1,1-DCE)				
trans- 1,2-Dichloroethylene				
1,2-Dichloropropane*				
cis- 1,3-Dichloropropylene				
trans- 1,3-Dichloropropylene				
1,1,1,2- Tetrachloroethane				
1,1,2,2- Tetrachloroethane*				
Tetrachloroethylene (PCE)				

Please see
Attach.

III. Calibration Standard (cont'd)

COMPOUND	INITIAL RF ₁₀₀	%RSD ^d	DAILY RF	%DIFF ^e w/RF ₁₀₀
1,1,1-Trichloroethane (1,1,1-TCA)				
1,1,2-Trichloroethane (1,1,2-TCA)				
Trichloroethylene (TCE)				
1,2,3-Trichloropropane				
Trichlorofluoromethane				
Vinyl chloride* (VC)				
Benzene				
Chlorobenzene*				
1,2-Dichlorobenzene				
1,3-Dichlorobenzene				
1,4-Dichlorobenzene				
Ethyl benzene*				
Toluene*				
m,p-Xylenes				
o-Xylene				
Acetone				
Acrolein				
Acrylonitrile				
n-Butylbenzene				
sec-Butylbenzene				
tert-Butylbenzene				
2-Chloroethylvinyl ether				
2-Chlorotoluene				
4-Chlorotoluene				
Dichloro- difluoromethane				
cis- 1,2-Dichloroethylene				
trans- 1,2-Dichloroethylene				
1,3-Dichloropropane				
2,2-Dichloropropane				
1,1-Dichloropropylene				
Ethylene dibromide (EDB)				
Hexachlorobutadiene				
Isopropylbenzene				

III. Calibration Standard (cont'd)

COMPOUND ^c	INITIAL RF _{avg}	%RSD ^d	DAILY RF	%DIFF ^e w/RF _{avg}
p-Isopropyltoluene				
Methyl Ethyl Ketone				
Methyl Isobutyl Ketone				
Naphthalene				
n-Propylbenzene				
Styrene				
1,2,3-Trichlorobenzene				
1,2,4-Trichlorobenzene				
1,2,4-Trimethylbenzene				
1,3,5-Trimethylbenzene				
1,1,2-Trichloro- trifluoroethane				

SPK CONC = Spiking Concentration ($\leq 5 \times$ POL); POL = Practical Quantitation Limit
 XMS = Percent Recovery of MS; XMSD = Percent Recovery of MSD; RPD = Relative Percent Difference;
 ACP = Acceptable Range of Percent; INITIAL RF_{avg} = Average Response Factor from Initial Calibration;
 DAILY RF = Response Factor from Daily Calibration; %RSD = Percent Relative Standard Deviation;
 %DIFF = Percent Difference; c = Listed Compounds are Ordered by Laboratory Analytical Methods: Halogenated,
 Aromatic, then Remaining Compounds Identified by GC/MS.
^d=Value $\leq 10\%$ for GC EPA Methods 500 & 600 Series, $\leq 20\%$ for GC EPA Methods 8000 Series, $\leq 30\%$ for GC/MS Methods.
^e=Value $\leq 20\%$ for GC EPA Methods 500 & 600 Series, $\leq 15\%$ for GC EPA Methods 8000 Series, $\leq 25\%$ for GC/MS Methods.
^a=Calibration Check Compounds (CCC) for GC/MS Method;
^b=System Performance Check Compounds (SPCC) for GC/MS Method

REQUIREMENT

1. Indicate any modification made to the EPA Methods (e.g., testing constituent list, columns).
2. Provide details of corrective actions in any out of control events (e.g., re-calibration, blank contamination, etc.).
3. Co-elution must be resolved prior to reporting, except for xylenes.
4. Second column or MS confirmation must be performed for all compounds detected.
5. Analytical results are not to be blank adjusted.
6. Chemical standards for QC check samples and calibration should be obtained from different supply sources.
7. Any change of column, detector, chemical standard, etc. shall result in a new initial calibration.
8. Lowest concentration injected for initial calibration should not exceed three times of laboratory method detection limits.
9. Re-calibration is required whenever the RF from daily calibration is not within the range specified in item "e" above from initial calibration RF_{avg}.
10. Tentative identified compounds and all unidentified peaks must be reported.
11. Chromatogram for calibration standards, quality control check samples, and selected environmental samples must be submitted upon request.

Response Factor Report VOA3

Initial Calibration

EPA 524.2

Instrument 537-03

11-3-93

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:30:04 1993
 Response via : Initial Calibration

Calibration Files

1 =V1916.D 2 =V1917.D 3 =V1918.D
 4 =V1919.D 5 =V1920.D

Compound	1	2	3	4	5	Avg	%RSD
1) Methylene Chloride-d2	-----ISTD-----						
2) Chloromethane	1.630	1.024	1.206	1.287	1.131	1.256	18.37
3) Vinyl Chloride	1.832	1.894	2.057	2.011	2.121	1.983	5.96
4) Bromomethane	2.406	1.877	1.885	1.946	2.059	2.035	10.82
5) Chloroethane	1.578	1.421	1.481	1.462	1.553	1.499	4.33
6) Trichlorofluoromethane	4.100	4.793	5.266	5.416	5.729	5.061	12.53
7) 1,1-Dichloroethene	2.030	2.095	2.243	2.228	2.394	2.198	6.44
8) Freon 113	3.382	3.821	4.250	4.543	4.694	4.138	13.00
9) Methylene Chloride	2.641	1.823	1.722	1.669	1.710	1.913	21.48
10) 1,2-Dichloroethene (trans)	2.801	2.572	2.668	2.577	2.712	2.666	3.61
11) 1,1-Dichloroethane	6.262	5.049	5.117	5.007	5.142	5.315	10.01
12) 2,2-Dichloropropane	4.864	4.899	5.233	4.887	5.070	4.990	3.17
13) 1,2-Dichloroethene (cis-)	3.048	2.456	2.487	2.449	2.536	2.595	9.85
14) Bromochloromethane	1.291	1.231	1.219	1.157	1.213	1.222	3.90
15) Chloroform	6.202	5.224	5.278	5.070	5.402	5.435	8.19
16) 1,1-Dichloropropene	4.907	4.638	5.000	4.800	5.127	4.894	3.83
17) S 1,2-Dichloroethane-d4	1.449	1.490	1.471	1.403	1.364	1.436	3.58
18) 1,2-Dichloroethane	2.173	1.818	1.751	1.727	1.745	1.843	10.19
19) 1,1,1-Trichloroethane	6.174	5.363	5.629	5.471	5.677	5.663	5.51
20) Carbon Tetrachloride	4.967	5.064	5.550	5.285	5.674	5.308	5.73
21) Benzene	8.382	7.322	7.516	7.180	7.612	7.602	6.14
22) Trichloroethene	3.354	3.193	3.443	3.260	3.485	3.347	3.64
23) 1,2-Dichloropropane	3.130	2.653	2.623	2.566	2.645	2.723	8.43
24) Fluorobenzene	-----ISTD-----						
25) Dibromomethane	0.139	0.124	0.120	0.123	0.124	0.126	6.12
26) Bromodichloromethane	0.576	0.498	0.480	0.493	0.502	0.510	7.44
27) cis-1,3-Dichloropropene	0.441	0.382	0.371	0.383	0.390	0.393	6.94
28) trans-1,3-Dichloropropene	0.257	0.215	0.203	0.218	0.220	0.223	9.18
29) 1,3-Dichloropropane	0.259	0.246	0.234	0.239	0.240	0.244	4.00
30) Dibromochloromethane	0.304	0.261	0.251	0.261	0.266	0.269	7.65
31) Bromoform	0.129	0.129	0.129	0.134	0.140	0.132	3.65
32) S Toluene-d8	0.851	0.871	0.871	0.872	0.855	0.864	1.17
33) Toluene	0.659	0.555	0.557	0.556	0.574	0.580	7.73
34) 1,1,2-Trichloroethane	0.170	0.140	0.132	0.138	0.138	0.144	10.54
35) Tetrachloroethene	0.341	0.332	0.345	0.343	0.355	0.343	2.34
36) 1,2-Dibromoethane	0.184	0.176	0.174	0.182	0.185	0.180	2.64
37) Chlorobenzene	0.739	0.599	0.596	0.612	0.622	0.634	9.47
38) 1,1,1,2-Tetrachloroethane	0.315	0.296	0.299	0.300	0.309	0.304	2.56
39) Ethylbenzene	0.345	0.307	0.322	0.321	0.331	0.325	4.25
40) m,p-Xylenes	0.499	0.420	0.424	0.430	0.445	0.444	7.27
41) o-Xylene	0.412	0.363	0.366	0.368	0.383	0.378	5.41
42) Styrene	0.681	0.567	0.558	0.585	0.598	0.598	8.19

004135

Response Factor Report VOA3

Method : C:\HPCHEM\1\METHODS\524SHORT.M
File : method 524.2
Last Update : Wed Nov 03 16:30:04 1993
Response via : Initial Calibration

Calibration Files

1 =V1916.D 2 =V1917.D 3 =V1918.D
4 =V1919.D 5 =V1920.D

Compound	1	2	3	4	5	Avg	%RSD
43) 1,2-Dichlorobenzene-d4	-----ISTD-----						
44) Isopropylbenzene	3.189	2.920	2.912	2.599	2.628	2.850	8.53
45) S Bromofluorobenzene	1.179	1.199	1.119	1.019	0.962	1.096	9.34
46) Bromobenzene	1.571	1.440	1.341	1.219	1.219	1.358	11.13
47) 1,1,2,2-Tetrachloroethane	0.522	0.436	0.380	0.350	0.343	0.406	18.37
48) 1,2,3-Trichloropropane	0.388	0.274	0.257	0.242	0.227	0.278	23.14
49) n-Propylbenzene	4.542	3.997	3.984	3.593	3.604	3.944	9.83
50) 2-Chlorotoluene	3.116	2.656	2.481	2.354	2.350	2.591	12.31
51) 4-Chlorotoluene	2.284	2.289	2.107	1.989	1.955	2.125	7.43
52) 1,3,5-Trimethylbenzene	2.678	2.362	2.284	2.056	2.070	2.290	11.11
53) Tert-Butylbenzene	2.887	2.440	2.455	2.244	2.230	2.451	10.83
54) 1,2,4-Trimethylbenzene	2.907	2.291	2.182	1.987	1.966	2.267	16.88
55) Sec-Butylbenzene	3.763	3.539	3.585	3.232	3.208	3.466	6.90
56) 1,3-Dichlorobenzene	1.398	1.231	1.166	1.073	1.050	1.184	11.86
57) 1,4-Dichlorobenzene	1.386	1.225	1.159	1.067	1.047	1.177	11.65
58) p-Isopropyltoluene	3.189	2.739	2.780	2.519	2.515	2.748	10.00
59) 1,2-Dichlorobenzene	1.150	0.976	0.935	0.836	0.815	0.942	14.24
60) n-Butylbenzene	3.567	3.104	3.173	2.872	2.795	3.102	9.79
61) 1,2-Dibromo-3-Chloropropa	0.092	0.075	0.065	0.061	0.059	0.070	19.47
62) 1,2,4-Trichlorobenzene	0.900	0.760	0.743	0.672	0.638	0.743	13.63
63) Naphthalene	1.242	0.985	0.864	0.649	0.608	0.870	29.81
64) Hexachlorobutadiene	0.911	0.793	0.828	0.738	0.687	0.791	10.86
65) 1,2,3-Trichlorobenzene	0.663	0.581	0.632	0.519	0.486	0.576	12.90

004136

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2222D.D
 Acq Time : 3 Dec 93 10:03 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
1	Methylene Chloride-d2	1.000	1.000	0.0	118	-0.11
2	Chloromethane	1.256	1.014	19.3	99	-0.04
3	Vinyl Chloride	1.983	2.198	-10.8	126	-0.10
4	Bromomethane	2.035	1.710	16.0	107	-0.09
5	Chloroethane	1.499	1.640	-9.4	131	-0.09
6	Trichlorofluoromethane	5.061	4.841	4.3	109	-0.10
7	1,1-Dichloroethene	2.198	2.623	-19.4	138	-0.10
8	Freon 113	4.138	4.883	-18.0	136	-0.07
9	Methylene Chloride	1.913	1.662	13.1	114	-0.11
10	1,2-Dichloroethene (trans-)	2.666	3.029	-13.6	134	-0.11
11	1,1-Dichloroethane	5.315	5.085	4.3	118	-0.12
12	2,2-Dichloropropane	4.990	5.287	-5.9	120	-0.12
13	1,2-Dichloroethene (cis-)	2.595	2.436	6.1	116	-0.13
14	Bromochloromethane	1.222	1.194	2.3	116	-0.13
15	Chloroform	5.435	5.344	1.7	120	-0.12
16	1,1-Dichloropropene	4.894	5.026	-2.7	119	-0.12
17 S	1,2-Dichloroethane-d4	1.436	1.318	8.2	106	-0.13
18	1,2-Dichloroethane	1.843	1.568	14.9	106	-0.13
19	1,1,1-Trichloroethane	5.663	5.673	-0.2	119	-0.14
20	Carbon Tetrachloride	5.308	5.913	-11.4	126	-0.11
21	Benzene	7.602	8.254	-8.6	130	-0.12
22	Trichloroethene	3.347	3.736	-11.6	128	-0.13
23	1,2-Dichloropropane	2.723	2.533	7.0	114	-0.13
24	Fluorobenzene	1.000	1.000	0.0	118	-0.12
25	Dibromomethane	0.126	0.116	8.1	114	-0.13
26	Bromodichloromethane	0.510	0.498	2.4	123	-0.14
27	cis-1,3-Dichloropropene	0.393	0.350	11.0	112	-0.13
28	trans-1,3-Dichloropropene	0.223	0.189	15.3	110	-0.11
29	1,3-Dichloropropane	0.244	0.239	1.7	121	-0.12
30	Dibromochloromethane	0.269	0.232	13.5	110	-0.12
31	Bromoform	0.132	0.116	12.2	107	-0.12
32 S	Toluene-d8	0.864	0.863	0.2	117	-0.13
33	Toluene	0.580	0.614	-5.8	131	-0.12
34	1,1,2-Trichloroethane	0.144	0.126	12.3	113	-0.13
35	Tetrachloroethene	0.343	0.382	-11.2	131	-0.12
36	1,2-Dibromoethane	0.180	0.169	6.4	115	-0.12
37	Chlorobenzene	0.634	0.598	5.7	119	-0.12
38	1,1,1,2-Tetrachloroethane	0.304	0.285	6.1	113	-0.11
39	Ethylbenzene	0.325	0.356	-9.5	131	-0.11
40	m,p-Xylenes	0.444	0.462	-4.1	129	-0.11
41	o-Xylene	0.378	0.393	-3.8	127	-0.14

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2222D.D

Acq Time : 3 Dec 93 10:03 am

Sample : VSTD010

Misc : 10 PPB VOA 524.2 STD / 25ML

Operator: TERRI

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M

Title : method 524.2

Last Update : Fri Dec 03 09:20:02 1993

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
42	Styrene	0.598	0.568	4.9	121	-0.13
43	1,2-Dichlorobenzene-d4	1.000	1.000	0.0	115	-0.10
44	Isopropylbenzene	2.850	3.097	-8.7	123	-0.11
45 S	Bromofluorobenzene	1.096	1.143	-4.3	118	-0.11
46	Bromobenzene	1.358	1.395	-2.7	120	-0.12
47	1,1,2,2-Tetrachloroethane	0.406	0.447	-9.9	135	-0.13
48	1,2,3-Trichloropropane	0.278	0.258	7.1	116	-0.12
49	n-Propylbenzene	3.944	4.521	-14.6	131	-0.11
50	2-Chlorotoluene	2.591	2.335	9.9	109	0.00
51	4-Chlorotoluene	2.125	2.338	-10.0	128	-0.12
52	1,3,5-Trimethylbenzene	2.290	2.565	-12.0	130	-0.11
53	Tert-Butylbenzene	2.451	2.838	-15.8	133	-0.10
	1,2,4-Trimethylbenzene	2.267	2.226	1.8	118	-0.11
55	Sec-Butylbenzene	3.466	3.917	-13.0	126	-0.11
56	1,3-Dichlorobenzene	1.197	1.295	-8.2	121	-0.10
57	1,4-Dichlorobenzene	1.177	1.257	-6.8	125	-0.10
58	p-Isopropyltoluene	2.748	3.250	-18.3	135	-0.10
59	1,2-Dichlorobenzene	0.942	0.971	-3.0	120	-0.10
60	n-Butylbenzene	3.102	3.737	-20.5	136	-0.10
61	1,2-Dibromo-3-Chloropropane	0.070	0.071	-0.8	126	-0.11
62	1,2,4-Trichlorobenzene	0.743	0.723	2.7	112	-0.11
63	Naphthalene	0.870	0.784	9.9	105	-0.12
64	Hexachlorobutadiene	0.791	0.833	-5.3	116	-0.12
65	1,2,3-Trichlorobenzene	0.576	0.541	6.2	99	-0.13

004138

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM

Laboratory Name: BC Analytical

Address: 201 Western Ave.

Telephone: (418) 247-5737

Laboratory Certification
(ELAP) No.: 1411 Expiration Date: 12/94

Laboratory Director's Name (Print): Jim Hein

Laboratory Director's Signature: [Signature]

Client: Seacor

Project No.: A0057-001-02

Analytical Method: EPA 502.1 EPA 503.1 EPA 502.2 EPA 524.1
(Circle One) EPA 524.2

EPA 601 EPA 602 EPA 624
EPA 8010 EPA 8020 EPA 8021 EPA 8240
EPA 8260

Other _____

Date Sampled: 11/30/93

Date Received: 11/30/93

Date Reported: 1/20/94

Sample Matrix: GW

Extraction Method: 5030

Extraction Material: _____

Chain of Custody Received: (Yes) No

Sample Condition: Good

-- Sample Headspace Description (%): < 1/

-- Sample Container Material: 40 ml vial

ANALYTICAL TEST RESULT^a

Reporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$

DATE ANALYZED			12/3/93	12/6/93	12/6/93
DATE EXTRACTED			12/3/93	12/6/93	12/6/93
DILUTION FACTOR			1	1	1
LAB SAMPLE I.D.			378-4	378-5	378-6
CLIENT SAMPLE I.D.			GW-5	GW-6	Eg. Blank
COMPOUND ^b	MDL	MB			
Bromobenzene	0.2		ND	ND	ND
Bromodichloromethane	0.2				
Bromoform	0.2				
Bromomethane	0.5				
Carbon tetrachloride	0.2				
Chloroethane	0.2				
Chloroform	0.2		0.37	0.40	
1-Chlorohexane			ND	ND	
Chloromethane	0.2				
Dibromochloromethane	0.2				
Dibromomethane	0.2				
Dichlorodifluoromethane					
1,1-Dichloroethane (1,1-DCA)	0.2				
1,2-Dichloroethane (1,2-DCA)	0.2				
1,1-Dichloroethylene (1,1-DCE)	0.2				
trans-1,2-Dichloroethylene	0.2				
Dichloromethane	0.2				
1,2-Dichloropropane	0.2				
cis-1,3-Dichloropropylene	0.2				
trans-1,3-Dichloropropylene	0.2				
1,1,1,2-Tetrachloroethane	0.2				
1,1,2,2-Tetrachloroethane	0.2				
Tetrachloroethylene (PCE)	0.2		0.97	1.2	
1,1,1-Trichloroethane (111-TCA)	0.2		ND	ND	
1,1,2-Trichloroethane (112-TCA)	0.2				
Trichloroethylene (TCE)	0.2		0.78	1.2	
1,2,3-Trichloropropane	0.2		ND	ND	
Trichlorofluoromethane	0.2				
Vinyl chloride	0.2				
Benzene	0.2		ND	ND	ND
Chlorobenzene	0.2				
1,2-Dichlorobenzene	0.2				
1,3-Dichlorobenzene	0.2				
1,4-Dichlorobenzene	0.2				
Ethyl benzene	0.2				
Toluene	0.2				

ANALYTICAL TEST RESULT (cont'd)

COMPOUND ^b	MDL	MB				
m,p-Xylenes	0.2		ND	ND	ND	
o-Xylene	0.2		1	1	1	
Acetone			ND	ND	ND	
Acrolein						
Acrylonitrile						
Bromochloromethane	0.2					
n-Butylbenzene	0.2					
sec-Butylbenzene	0.2					
tert-Butylbenzene	0.2					
2-Chloroethylvinyl ether						
2-Chlorotoluene	0.2					
4-Chlorotoluene	0.2					
Dichlorodifluoromethane						
cis-1,2-Dichloroethylene	0.2		0.63	0.40		
1,3-Dichloropropane	0.2		ND	ND		
2,2-Dichloropropane	0.2					
1,1-Dichloropropylene	0.2					
Ethylene dibromide (EDB)						
Hexachlorobutadiene	0.2					
Isopropylbenzene	0.2					
p-Isopropyltoluene	0.2					
Methyl Ethyl Ketone						
Methyl Isobutyl Ketone						
Naphthalene	0.2		0.45	0.40		
n-Propylbenzene	0.2		ND	ND		
Styrene	0.2		1	1		
1,2,3-Trichlorobenzene	0.2		0.25	0.30		
1,2,4-Trichlorobenzene	0.2		ND	0.30		
1,2,4-Trimethylbenzene	0.2			ND		
1,3,5-Trimethylbenzene	0.2					
1,1,2-Trichloro-trifluoroethane						
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	%RC	%RC
1,2-Dichloroethane-d4	10	37- 144		94	95	99
4-Bromofluorobenzene	10	32- 138		123	122	119
Toluene-d8	10	39- 144		99	94	100

a = Report Any Value \geq MDL; b = Listed Compounds Are Ordered by Laboratory Analytical Methods: Halogenated, Aromatic, then Remaining Compounds Identified by GC/MS.

QA/QC REPORT

Reporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE PERFORMED: 12-6-93
 BATCH #: 23816
 LAB SAMPLE I.D.:

ANALYTE	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD
Bromomethane	4	3.43	86	3.61	90	5	47-142	30
1,1-Dichloroethane	4	3.51	88	3.71	93	6	59-140	30
1,2-Dichloroethane	4	3.34	84	3.42	86	2	62-147	30
Benzene	4	3.48	87	3.78	95	8	54-137	30
Dibromomethane	4	3.74	94	3.72	93	1	50-150	30
Toluene	4	3.95	99	3.93	98	1	64-136	30
Chlorobenzene	4	3.64	91	3.62	90	1	61-159	30
1,1,2,2-Tetrachloroethane	4	3.86	97	4.11	103	6	66-131	30
1,3-Dichlorobenzene	4	4.16	104	4.46	111	7	59-155	30
1,2,3-Trichlorobenzene	4	3.92	100	4.28	107	7	54-129	30

II. Laboratory Quality Control Check Sample

DATE PERFORMED: 12-6-93
 BATCH #: 23816
 LAB SAMPLE I.D.:

ANALYTE	SPK CONC	RESULT	%RECOVERY	ACP %
1,1-Dichloroethane	4	3.65	91	80-120
1,2-Dichloroethane	4	3.55	89	80-120
Benzene	4	3.70	93	80-120
Dibromomethane	4	3.57	89	80-120
Toluene	4	3.71	93	80-120

Chlorobenzene	4	3.65	91	80-120
1,1,2,2-Tetrachloroethane	4	4.05	101	80-120
1,3-Dichlorobenzene	4	4.36	110	80-120

ANALYST: T. Walsh

DATE: 1/21/94

QA/QC REPORT

III. Calibration Standard

MOST RECENT
INITIAL
CALIBRATION
DATE: 11-3-93

DAILY
CALIBRATION
DATE: 12-6-93

SUPPLY SOURCE: _____

COMPOUND	INITIAL RF _{...}	%RSD ^a	DAILY RF	%DIFF ^a w/RF _{...}
Bromobenzene				
Bromochloromethane				
Bromodichloromethane				
Bromoform ^a				
Bromomethane				
Carbon tetrachloride				
Chloroethane				
Chloroform ^a				
1-Chlorohexane				
Chloromethane ^a				
Dibromochloromethane				
Dibromomethane				
Dichloromethane (Methylene chloride)				
1,1-Dichloroethane ^a (1,1-DCA)				
1,2-Dichloroethane (1,2-DCA)				
1,1-Dichloroethylene ^a (1,1-DCE)				
trans- 1,2-Dichloroethylene				
1,2-Dichloropropane ^a				
cis- 1,3-Dichloropropylene				
trans- 1,3-Dichloropropylene				
1,1,1,2- Tetrachloroethane				
1,1,2,2- Tetrachloroethane ^a				
Tetrachloroethylene (PCE)				

*Please see
Attach*

III. Calibration Standard (cont'd)

COMPOUND	INITIAL RF _{...}	%RSD ^d	DAILY RF	%DIFF ^e w/RF _{...}
1,1,1-Trichloroethane (1,1,1-TCA)				
1,1,2-Trichloroethane (1,1,2-TCA)				
Trichloroethylene (TCE)				
1,2,3-Trichloropropane				
Trichlorofluoromethane				
Vinyl chloride* (VC)				
Benzene				
Chlorobenzene*				
1,2-Dichlorobenzene				
1,3-Dichlorobenzene				
1,4-Dichlorobenzene				
Ethyl benzene*				
Toluene*				
m,p-Xylenes				
o-Xylene				
Acetone				
Acrolein				
Acrylonitrile				
n-Butylbenzene				
sec-Butylbenzene				
tert-Butylbenzene				
2-Chloroethylvinyl ether				
2-Chlorotoluene				
4-Chlorotoluene				
Dichloro- difluoromethane				
cis- 1,2-Dichloroethylene				
trans- 1,2-Dichloroethylene				
1,3-Dichloropropane				
2,2-Dichloropropane				
1,1-Dichloropropylene				
Ethylene dibromide (EDB)				
Hexachlorobutadiene				
Isopropylbenzene				

III. Calibration Standard (cont'd)

COMPOUND ^c	INITIAL RF ₁₀₀	%RSD ^d	DAILY RF	%DIFF ^e w/RF ₁₀₀
p-Isopropyltoluene				
Methyl Ethyl Ketone				
Methyl Isobutyl Ketone				
Naphthalene				
n-Propylbenzene				
Styrene				
1,2,3-Trichlorobenzene				
1,2,4-Trichlorobenzene				
1,2,4-Trimethylbenzene				
1,3,5-Trimethylbenzene				
1,1,2-Trichloro- trifluoroethane				

SPK CONC = Spiking Concentration ($\leq 5 \times \text{POL}$); POL = Practical Quantitation Limit
 %MS = Percent Recovery of MS; %MSD = Percent Recovery of MSD; RPD = Relative Percent Difference;
 ACP = Acceptable Range of Percent; INITIAL RF₁₀₀ = Average Response Factor from Initial Calibration;
 DAILY RF = Response Factor from Daily Calibration; %RSD = Percent Relative Standard Deviation;
 %DIFF = Percent Difference; c = Listed Compounds are Ordered by Laboratory Analytical Methods; Halogenated,
 Aromatic, then Remaining Compounds Identified by GC/MS.
^dValue $\leq 10\%$ for GC EPA Methods 500 & 600 Series, $\leq 20\%$ for GC EPA Methods 8000 Series, $\leq 30\%$ for GC/MS Methods.
^eValue $\leq 20\%$ for GC EPA Methods 500 & 600 Series, $\leq 15\%$ for GC EPA Methods 8000 Series, $\leq 25\%$ for GC/MS Methods.
^a=Calibration Check Compounds (CCC) for GC/MS Method;
^b=System Performance Check Compounds (SPCC) for GC/MS Method

REQUIREMENT

1. Indicate any modification made to the EPA Methods (e.g., testing constituent list, columns).
2. Provide details of corrective actions in any out of control events (e.g., re-calibration, blank contamination, etc.).
3. Co-elution must be resolved prior to reporting, except for xylenes.
4. Second column or MS confirmation must be performed for all compounds detected.
5. Analytical results are not to be blank adjusted.
6. Chemical standards for QC check samples and calibration should be obtained from different supply sources.
7. Any change of column, detector, chemical standard, etc. shall result in a new initial calibration.
8. Lowest concentration injected for initial calibration should not exceed three times of laboratory method detection limits.
9. Re-calibration is required whenever the RF from daily calibration is not within the range specified in item "e" above from initial calibration RF₁₀₀.
10. Tentative identified compounds and all unidentified peaks must be reported.
11. Chromatogram for calibration standards, quality control check samples, and selected environmental samples must be submitted upon request.

Response Factor Report VOA3

Initial Calibration

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:30:04 1993
 Response via : Initial Calibration

EPA 524.2

Instrument 537-C3

11-3-93

Calibration Files

1 =V1916.D 2 =V1917.D 3 =V1918.D
 4 =V1919.D 5 =V1920.D

Compound	1	2	3	4	5	Avg	%RSD
1) Methylene Chloride-d2	-----ISTD-----						
2) Chloromethane	1.630	1.024	1.206	1.287	1.131	1.256	18.37
3) Vinyl Chloride	1.832	1.894	2.057	2.011	2.121	1.983	5.96
4) Bromomethane	2.406	1.877	1.885	1.946	2.059	2.035	10.82
5) Chloroethane	1.578	1.421	1.481	1.462	1.553	1.499	4.33
6) Trichlorofluoromethane	4.100	4.793	5.266	5.416	5.729	5.061	12.53
7) 1,1-Dichloroethene	2.030	2.095	2.243	2.228	2.394	2.198	6.44
8) Freon 113	3.382	3.821	4.250	4.543	4.694	4.138	13.00
9) Methylene Chloride	2.641	1.823	1.722	1.669	1.710	1.913	21.48
10) 1,2-Dichloroethene (trans	2.801	2.572	2.668	2.577	2.712	2.666	3.61
11) 1,1-Dichloroethane	6.262	5.049	5.117	5.007	5.142	5.315	10.01
12) 2,2-Dichloropropane	4.864	4.899	5.233	4.887	5.070	4.990	3.17
13) 1,2-Dichloroethene (cis-)	3.048	2.456	2.487	2.449	2.536	2.595	9.85
14) Bromochloromethane	1.291	1.231	1.219	1.157	1.213	1.222	3.90
15) Chloroform	6.202	5.224	5.278	5.070	5.402	5.435	8.19
16) 1,1-Dichloropropene	4.907	4.638	5.000	4.800	5.127	4.894	3.83
17) S 1,2-Dichloroethane-d4	1.449	1.490	1.471	1.403	1.364	1.436	3.58
18) 1,2-Dichloroethane	2.173	1.818	1.751	1.727	1.745	1.843	10.19
19) 1,1,1-Trichloroethane	6.174	5.363	5.629	5.471	5.677	5.663	5.51
20) Carbon Tetrachloride	4.967	5.064	5.550	5.285	5.674	5.308	5.73
21) Benzene	8.382	7.322	7.516	7.180	7.612	7.602	6.14
22) Trichloroethene	3.354	3.193	3.443	3.260	3.485	3.347	3.64
23) 1,2-Dichloropropane	3.130	2.653	2.623	2.566	2.645	2.723	8.43
24) Fluorobenzene	-----ISTD-----						
25) Dibromomethane	0.139	0.124	0.120	0.123	0.124	0.126	6.12
26) Bromodichloromethane	0.576	0.498	0.480	0.493	0.502	0.510	7.44
27) cis-1,3-Dichloropropene	0.441	0.382	0.371	0.383	0.390	0.393	6.94
28) trans-1,3-Dichloropropene	0.257	0.215	0.203	0.218	0.220	0.223	9.18
29) 1,3-Dichloropropane	0.259	0.246	0.234	0.239	0.240	0.244	4.00
30) Dibromochloromethane	0.304	0.261	0.251	0.261	0.266	0.269	7.65
31) Bromoform	0.129	0.129	0.129	0.134	0.140	0.132	3.65
32) S Toluene-d8	0.851	0.871	0.871	0.872	0.855	0.864	1.17
33) Toluene	0.659	0.555	0.557	0.556	0.574	0.580	7.73
34) 1,1,2-Trichloroethane	0.170	0.140	0.132	0.138	0.138	0.144	10.54
35) Tetrachloroethene	0.341	0.332	0.345	0.343	0.355	0.343	2.34
36) 1,2-Dibromoethane	0.184	0.176	0.174	0.182	0.185	0.180	2.64
37) Chlorobenzene	0.739	0.599	0.596	0.612	0.622	0.634	9.47
38) 1,1,1,2-Tetrachloroethane	0.315	0.296	0.299	0.300	0.309	0.304	2.56
39) Ethylbenzene	0.345	0.307	0.322	0.321	0.331	0.325	4.25
40) m,p-Xylenes	0.499	0.420	0.424	0.430	0.445	0.444	7.27
41) o-Xylene	0.412	0.363	0.366	0.368	0.383	0.378	5.41
42) Styrene	0.681	0.567	0.558	0.585	0.598	0.598	8.19

Response Factor Report VOA3

Method : C:\HPCHEM\1\METHODS\524SHORT.M
Title : method 524.2
Last Update : Wed Nov 03 16:30:04 1993
Response via : Initial Calibration

Calibration Files

1 =V1916.D 2 =V1917.D 3 =V1918.D
4 =V1919.D 5 =V1920.D

Compound		1	2	3	4	5	Avg	%RSD
-----		-----						
43)	1,2-Dichlorobenzene-d4	-----ISTD-----						
44)	Isopropylbenzene	3.189	2.920	2.912	2.599	2.628	2.850	8.53
45) S	Bromofluorobenzene	1.179	1.199	1.119	1.019	0.962	1.096	9.34
46)	Bromobenzene	1.571	1.440	1.341	1.219	1.219	1.358	11.13
47)	1,1,2,2-Tetrachloroethane	0.522	0.436	0.380	0.350	0.343	0.406	18.37
48)	1,2,3-Trichloropropane	0.388	0.274	0.257	0.242	0.227	0.278	23.14
49)	n-Propylbenzene	4.542	3.997	3.984	3.593	3.604	3.944	9.83
50)	2-Chlorotoluene	3.116	2.656	2.481	2.354	2.350	2.591	12.31
51)	4-Chlorotoluene	2.284	2.289	2.107	1.989	1.955	2.125	7.43
52)	1,3,5-Trimethylbenzene	2.678	2.362	2.284	2.056	2.070	2.290	11.11
53)	Tert-Butylbenzene	2.887	2.440	2.455	2.244	2.230	2.451	10.83
54)	1,2,4-Trimethylbenzene	2.907	2.291	2.182	1.987	1.966	2.267	16.88
55)	Sec-Butylbenzene	3.763	3.539	3.585	3.232	3.208	3.466	6.90
56)	1,3-Dichlorobenzene	1.398	1.231	1.166	1.073	1.050	1.184	11.86
57)	1,4-Dichlorobenzene	1.386	1.225	1.159	1.067	1.047	1.177	11.65
58)	p-Isopropyltoluene	3.189	2.739	2.780	2.519	2.515	2.748	10.00
59)	1,2-Dichlorobenzene	1.150	0.976	0.935	0.836	0.815	0.942	14.24
60)	n-Butylbenzene	3.567	3.104	3.173	2.872	2.795	3.102	9.79
61)	1,2-Dibromo-3-Chloropropa	0.092	0.075	0.065	0.061	0.059	0.070	19.47
62)	1,2,4-Trichlorobenzene	0.900	0.760	0.743	0.672	0.638	0.743	13.63
63)	Naphthalene	1.242	0.985	0.864	0.649	0.608	0.870	29.81
64)	Hexachlorobutadiene	0.911	0.793	0.828	0.738	0.687	0.791	10.86
65)	1,2,3-Trichlorobenzene	0.663	0.581	0.632	0.519	0.486	0.576	12.90

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2233.D
 Acq Time : 6 Dec 93 9:17 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

part
2/14/93

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev (Min)
1	Methylene Chloride-d2	1.000	1.000	0.0	114	-0.10
2	Chloromethane	1.256	0.904	28.0#	86	-0.06
3	Vinyl Chloride	1.983	2.163	-9.1	120	-0.08
4	Bromomethane	2.035	1.470	27.8#	89	-0.09
5	Chloroethane	1.499	1.613	-7.6	125	-0.10
6	Trichlorofluoromethane	5.061	4.770	5.7	104	-0.10
7	1,1-Dichloroethene	2.198	2.584	-17.6	132	-0.10
8	Freon 113	4.138	4.912	-18.7	132	-0.07
9	Methylene Chloride	1.913	1.605	16.1	107	-0.10
10	1,2-Dichloroethene (trans-)	2.666	2.991	-12.2	128	-0.10
11	1,1-Dichloroethane	5.315	4.933	7.2	110	-0.11
12	2,2-Dichloropropane	4.990	5.653	-13.3	124	-0.11
13	1,2-Dichloroethene (cis-)	2.595	2.449	5.6	113	-0.12
14	Bromochloromethane	1.222	1.275	-4.3	120	-0.12
15	Chloroform	5.435	5.285	2.8	115	-0.11
16	1,1-Dichloropropene	4.894	5.291	-8.1	121	-0.12
17 S	1,2-Dichloroethane-d4	1.436	1.353	5.8	105	-0.13
18	1,2-Dichloroethane	1.843	1.685	8.6	110	-0.12
19	1,1,1-Trichloroethane	5.663	5.602	1.1	114	-0.12
20	Carbon Tetrachloride	5.308	5.969	-12.5	123	-0.11
21	Benzene	7.602	8.181	-7.6	125	-0.12
22	Trichloroethene	3.347	3.658	-9.3	122	-0.12
23	1,2-Dichloropropane	2.723	2.593	4.8	113	-0.13
24	Fluorobenzene	1.000	1.000	0.0	114	-0.12
25	Dibromomethane	0.126	0.123	2.5	117	-0.13
26	Bromodichloromethane	0.510	0.487	4.5	116	-0.13
27	cis-1,3-Dichloropropene	0.393	0.359	8.6	110	-0.12
28	trans-1,3-Dichloropropene	0.223	0.198	10.9	111	-0.11
29	1,3-Dichloropropane	0.244	0.232	4.7	113	-0.12
30	Dibromochloromethane	0.269	0.246	8.3	112	-0.12
31	Bromoform	0.132	0.126	4.6	111	-0.12
32 S	Toluene-d8	0.864	0.845	2.2	111	-0.12
33	Toluene	0.580	0.604	-4.1	124	-0.11
34	1,1,2-Trichloroethane	0.144	0.134	7.0	115	-0.11
35	Tetrachloroethene	0.343	0.375	-9.2	124	-0.12
36	1,2-Dibromoethane	0.180	0.178	1.0	117	-0.11
37	Chlorobenzene	0.634	0.596	5.9	114	-0.12
38	1,1,1,2-Tetrachloroethane	0.304	0.307	-0.9	117	-0.11
39	Ethylbenzene	0.325	0.345	-6.2	122	-0.11
40	m,p-Xylenes	0.444	0.448	-0.9	120	-0.11
41	o-Xylene	0.378	0.390	-3.1	121	-0.14

(#) = Out of Range

V2233.D 524METH.M

Mon Dec 06 09:55:23 1993

VOA3

004149

Page 1

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2233.D
 Acq Time : 6 Dec 93 9:17 am
 Sample : VSTD010
 Misc : 10 BPB VOA 524.2 STD / 25ML

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
42	Styrene	0.598	0.570	4.6	116	-0.13
43	1,2-Dichlorobenzene-d4	1.000	1.000	0.0	113	-0.09
44	Isopropylbenzene	2.850	3.207	-12.6	124	-0.11
45 S	Bromofluorobenzene	1.096	1.110	-1.3	112	-0.11
46	Bromobenzene	1.358	1.443	-6.3	121	-0.11
47	1,1,2,2-Tetrachloroethane	0.406	0.389	4.3	115	-0.12
48	1,2,3-Trichloropropane	0.278	0.250	10.0	110	-0.10
49	n-Propylbenzene	3.944	4.349	-10.3	123	-0.11
50	2-Chlorotoluene	2.591	2.317	10.6	105	0.00
51	4-Chlorotoluene	2.125	2.317	-9.1	124	-0.11
52	1,3,5-Trimethylbenzene	2.290	2.468	-7.8	122	-0.10
53	Tert-Butylbenzene	2.451	2.683	-9.4	123	-0.10
54	1,2,4-Trimethylbenzene	2.267	2.262	0.2	117	-0.10
55	Sec-Butylbenzene	3.466	4.074	-17.6	128	-0.11
56	1,3-Dichlorobenzene	1.197	1.297	-8.4	119	-0.10
57	1,4-Dichlorobenzene	1.177	1.253	-6.5	122	-0.10
58	p-Isopropyltoluene	2.748	3.116	-13.4	127	-0.09
59	1,2-Dichlorobenzene	0.942	0.977	-3.7	118	-0.09
60	n-Butylbenzene	3.102	3.620	-16.7	129	-0.09
61	1,2-Dibromo-3-Chloropropane	0.070	0.069	2.2	120	-0.10
62	1,2,4-Trichlorobenzene	0.743	0.775	-4.3	118	-0.12
63	Naphthalene	0.870	0.715	17.7	93	-0.13
64	Hexachlorobutadiene	0.791	0.905	-14.3	123	-0.12
65	1,2,3-Trichlorobenzene	0.576	0.582	-1.1	104	-0.14

ANALYTICAL TEST RESULT^aReporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$

DATE ANALYZED			12/6/93		
DATE EXTRACTED			12/6/93		
DILUTION FACTOR			1		
LAB SAMPLE I.D.			374-7		
CLIENT SAMPLE I.D.			Trig-Aest		
COMPOUND ^b	MDL	MB			
Bromobenzene	0.2		ND		
Bromodichloromethane	0.2				
Bromoform	0.2				
Bromomethane	0.5				
Carbon tetrachloride	0.2				
Chloroethane	0.2				
Chloroform	0.2				
1-Chlorohexane					
Chloromethane	0.2				
Dibromochloromethane	0.2				
Dibromomethane	0.2				
Dichlorodifluoromethane					
1,1-Dichloroethane (1,1-DCA)	0.2				
1,2-Dichloroethane (1,2-DCA)	0.2				
1,1-Dichloroethylene (1,1-DCE)	0.2				
trans-1,2-Dichloroethylene	0.2				
Dichloromethane	0.2				
1,2-Dichloropropane	0.2				
cis-1,3-Dichloropropylene	0.2				
trans-1,3-Dichloropropylene	0.2				
1,1,1,2-Tetrachloroethane	0.2				
1,1,2,2-Tetrachloroethane	0.2				
Tetrachloroethylene (PCE)	0.2				
1,1,1-Trichloroethane (111-TCA)	0.2				
1,1,2-Trichloroethane (112-TCA)	0.2				
Trichloroethylene (TCE)	0.2				
1,2,3-Trichloropropane	0.2				
Trichlorofluoromethane	0.2				
Vinyl chloride	0.2				
Benzene	0.2		ND		
Chlorobenzene	0.2				
1,2-Dichlorobenzene	0.2				
1,3-Dichlorobenzene	0.2				
1,4-Dichlorobenzene	0.2				
Ethyl benzene	0.2				
Toluene	0.2				

ANALYTICAL TEST RESULT (cont'd)

COMPOUND ^b		MDL	MB			
m,p-Xylenes		0.2		ND		
o-Xylene		0.2				
Acetone				ND		
Acrolein						
Acrylonitrile						
Bromochloromethane		0.2				
n-Butylbenzene		0.2				
sec-Butylbenzene		0.2				
tert-Butylbenzene		0.2				
2-Chloroethylvinyl ether						
2-Chlorotoluene		0.2				
4-Chlorotoluene		0.2				
Dichlorodifluoromethane						
cis-1,2-Dichloroethylene		0.2				
1,3-Dichloropropane		0.2				
2,2-Dichloropropane		0.2				
1,1-Dichloropropylene		0.2				
Ethylene dibromide (EDB)						
Hexachlorobutadiene		0.2				
Isopropylbenzene		0.2				
p-Isopropyltoluene		0.2				
Methyl Ethyl Ketone						
Methyl Isobutyl Ketone						
Naphthalene		0.2				
n-Propylbenzene		0.2				
Styrene		0.2				
1,2,3-Trichlorobenzene		0.2				
1,2,4-Trichlorobenzene		0.2				
1,2,4-Trimethylbenzene		0.2				
1,3,5-Trimethylbenzene		0.2				
1,1,2-Trichloro-trifluoroethane						
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	%RC	%RC
1,2-Dichloroethane-d4	10	37- 144		75		
4-Bromofluorobenzene	10	32- 138		119		
Toluene-d8	10	39- 144		195		

a = Report Any Value \geq MDL; b = Listed Compounds Are Ordered by Laboratory Analytical Methods: Halogenated, Aromatic, then Remaining Compounds Identified by GC/MS.

QA/QC REPORT

Reporting Unit (Circle One): $\mu\text{g/kg}$ $\mu\text{g/l}$

I. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

DATE PERFORMED: 12-6-93
 BATCH #: 93416
 LAB SAMPLE I.D.:

ANALYTE	SPK CONC	MS	% MS	MSD	% MSD	RPD	ACP %MS	ACP RPD
Bromomethane	4	3.43	86	3.61	90	5	47-142	30
1,1-Dichloroethane	4	3.51	88	3.71	93	6	59-140	30
1,2-Dichloroethane	4	3.34	84	3.42	86	2	62-147	30
Benzene	4	3.44	87	3.74	95	8	54-137	30
Dibromomethane	4	3.74	94	3.72	93	1	50-150	30
Toluene	4	3.95	99	3.93	98	1	64-136	30
Chlorobenzene	4	3.64	91	3.62	90	1	61-159	30
1,1,2,2-Tetrachloroethane	4	3.86	97	4.11	103	6	66-131	30
1,3-Dichlorobenzene	4	4.16	104	4.46	111	7	59-155	30
1,2,3-Trichlorobenzene	4	3.99	100	4.24	107	7	54-129	30

II. Laboratory Quality Control Check Sample

DATE PERFORMED: 12-6-93
 BATCH #: 93416
 LAB SAMPLE I.D.:

ANALYTE	SPK CONC	RESULT	%RECOVERY	ACP %
1,1-Dichloroethane	4	3.65	91	80-120
1,2-Dichloroethane	4	3.55	89	80-120
Benzene	4	3.70	93	80-120
Dibromomethane	4	3.57	89	80-120
Toluene	4	3.71	93	80-120

Chlorobenzene	4	3.65	91	80-120
1,1,2,2-Tetrachloroethane	4	4.05	101	80-120
1,3-Dichlorobenzene	4	4.38	110	80-120

ANALYST: T. W. [signature]

DATE: 1/21/84

Response Factor Report VOA3

Initial Calibration

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:30:04 1993
 Response via : Initial Calibration

EPA 524.2

Instrument 537-C3

11-3-93

Calibration Files

1 =V1916.D 2 =V1917.D 3 =V1918.D
 4 =V1919.D 5 =V1920.D

Compound	1	2	3	4	5	Avg	%RSD
-----ISTD-----							
1) Methylene Chloride-d2	1.630	1.024	1.206	1.287	1.131	1.256	18.37
2) Chloromethane	1.832	1.894	2.057	2.011	2.121	1.983	5.96
3) Vinyl Chloride	2.406	1.877	1.885	1.946	2.059	2.035	10.82
4) Bromomethane	1.578	1.421	1.481	1.462	1.553	1.499	4.33
5) Chloroethane	4.100	4.793	5.266	5.416	5.729	5.061	12.53
6) Trichlorofluoromethane	2.030	2.095	2.243	2.228	2.394	2.198	6.44
7) 1,1-Dichloroethene	3.382	3.821	4.250	4.543	4.694	4.138	13.00
8) Freon 113	2.641	1.823	1.722	1.669	1.710	1.913	21.48
9) Methylene Chloride	2.801	2.572	2.668	2.577	2.712	2.666	3.61
10) 1,2-Dichloroethene (trans)	6.262	5.049	5.117	5.007	5.142	5.315	10.01
11) 1,1-Dichloroethane	4.864	4.899	5.233	4.887	5.070	4.990	3.17
12) 2,2-Dichloropropane	3.048	2.456	2.487	2.449	2.536	2.595	9.85
13) 1,2-Dichloroethene (cis-)	1.291	1.231	1.219	1.157	1.213	1.222	3.90
14) Bromochloromethane	6.202	5.224	5.278	5.070	5.402	5.435	8.19
15) Chloroform	4.907	4.638	5.000	4.800	5.127	4.894	3.83
16) 1,1-Dichloropropene	1.449	1.490	1.471	1.403	1.364	1.436	3.58
17) 1,2-Dichloroethane-d4	2.173	1.818	1.751	1.727	1.745	1.843	10.19
18) 1,2-Dichloroethane	6.174	5.363	5.629	5.471	5.677	5.663	5.51
19) 1,1,1-Trichloroethane	4.967	5.064	5.550	5.285	5.674	5.308	5.73
20) Carbon Tetrachloride	8.382	7.322	7.516	7.180	7.612	7.602	6.14
21) Benzene	3.354	3.193	3.443	3.260	3.485	3.347	3.64
22) Trichloroethene	3.130	2.653	2.623	2.566	2.645	2.723	8.43
23) 1,2-Dichloropropane	-----ISTD-----						
24) Fluorobenzene	0.139	0.124	0.120	0.123	0.124	0.126	6.12
25) Dibromomethane	0.576	0.498	0.480	0.493	0.502	0.510	7.44
26) Bromodichloromethane	0.441	0.382	0.371	0.383	0.390	0.393	6.94
27) cis-1,3-Dichloropropene	0.257	0.215	0.203	0.218	0.220	0.223	9.18
28) trans-1,3-Dichloropropene	0.259	0.246	0.234	0.239	0.240	0.244	4.00
29) 1,3-Dichloropropane	0.304	0.261	0.251	0.261	0.266	0.269	7.65
30) Dibromochloromethane	0.129	0.129	0.129	0.134	0.140	0.132	3.65
31) Bromoform	0.851	0.871	0.871	0.872	0.855	0.864	1.17
32) Toluene-d8	0.659	0.555	0.557	0.556	0.574	0.580	7.73
33) Toluene	0.170	0.140	0.132	0.138	0.138	0.144	10.54
34) 1,1,2-Trichloroethane	0.341	0.332	0.345	0.343	0.355	0.343	2.34
35) Tetrachloroethene	0.184	0.176	0.174	0.182	0.185	0.180	2.64
36) 1,2-Dibromoethane	0.739	0.599	0.596	0.612	0.622	0.634	9.47
37) Chlorobenzene	0.315	0.296	0.299	0.300	0.309	0.304	2.56
38) 1,1,1,2-Tetrachloroethane	0.345	0.307	0.322	0.321	0.331	0.325	4.25
39) Ethylbenzene	0.499	0.420	0.424	0.430	0.445	0.444	7.27
40) m,p-Xylenes	0.412	0.363	0.366	0.368	0.383	0.378	5.41
41) o-Xylene	0.681	0.567	0.558	0.585	0.598	0.598	8.19
42) Styrene	-----ISTD-----						

Response Factor Report VOA3

Method : C:\HPCHEM\1\METHODS\524SHORT.M
 Title : method 524.2
 Last Update : Wed Nov 03 16:30:04 1993
 Response via : Initial Calibration

Calibration Files

1 =V1916.D 2 =V1917.D 3 =V1918.D
 4 =V1919.D 5 =V1920.D

Compound	1	2	3	4	5	Avg	%RSD
43) 1,2-Dichlorobenzene-d4	-----ISTD-----						
44) Isopropylbenzene	3.189	2.920	2.912	2.599	2.628	2.850	8.53
45) S Bromofluorobenzene	1.179	1.199	1.119	1.019	0.962	1.096	9.34
46) Bromobenzene	1.571	1.440	1.341	1.219	1.219	1.358	11.13
47) 1,1,2,2-Tetrachloroethane	0.522	0.436	0.380	0.350	0.343	0.406	18.37
48) 1,2,3-Trichloropropane	0.388	0.274	0.257	0.242	0.227	0.278	23.14
49) n-Propylbenzene	4.542	3.997	3.984	3.593	3.604	3.944	9.83
50) 2-Chlorotoluene	3.116	2.656	2.481	2.354	2.350	2.591	12.31
51) 4-Chlorotoluene	2.284	2.289	2.107	1.989	1.955	2.125	7.43
52) 1,3,5-Trimethylbenzene	2.678	2.362	2.284	2.056	2.070	2.290	11.11
53) Tert-Butylbenzene	2.887	2.440	2.455	2.244	2.230	2.451	10.83
54) 1,2,4-Trimethylbenzene	2.907	2.291	2.182	1.987	1.966	2.267	16.88
55) Sec-Butylbenzene	3.763	3.539	3.585	3.232	3.208	3.466	6.90
56) 1,3-Dichlorobenzene	1.398	1.231	1.166	1.073	1.050	1.184	11.86
57) 1,4-Dichlorobenzene	1.386	1.225	1.159	1.067	1.047	1.177	11.65
58) p-Isopropyltoluene	3.189	2.739	2.780	2.519	2.515	2.748	10.00
59) 1,2-Dichlorobenzene	1.150	0.976	0.935	0.836	0.815	0.942	14.24
60) n-Butylbenzene	3.567	3.104	3.173	2.872	2.795	3.102	9.79
61) 1,2-Dibromo-3-Chloropropa	0.092	0.075	0.065	0.061	0.059	0.070	19.47
62) 1,2,4-Trichlorobenzene	0.900	0.760	0.743	0.672	0.638	0.743	13.63
63) Naphthalene	1.242	0.985	0.864	0.649	0.608	0.870	29.81
64) Hexachlorobutadiene	0.911	0.793	0.828	0.738	0.687	0.791	10.86
65) 1,2,3-Trichlorobenzene	0.663	0.581	0.632	0.519	0.486	0.576	12.90

004157

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2233.D

Acq Time : 6 Dec 93 9:17 am

Sample : VSTD010

Misc : 10 PPB VOA 524.2 STD / 25ML

Operator: TERRI

Inst : VOA3

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M

Title : method 524.2

Last Update : Fri Dec 03 09:20:02 1993

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev (Min)
1	Methylene Chloride-d2	1.000	1.000	0.0	114	-0.10
2	Chloromethane	1.256	0.904	28.0#	86	-0.06
3	Vinyl Chloride	1.983	2.163	-9.1	120	-0.08
4	Bromomethane	2.035	1.470	27.8#	89	-0.09
5	Chloroethane	1.499	1.613	-7.6	125	-0.10
6	Trichlorofluoromethane	5.061	4.770	5.7	104	-0.10
7	1,1-Dichloroethene	2.198	2.584	-17.6	132	-0.10
8	Freon 113	4.138	4.912	-18.7	132	-0.07
9	Methylene Chloride	1.913	1.605	16.1	107	-0.10
10	1,2-Dichloroethene (trans-)	2.666	2.991	-12.2	128	-0.10
11	1,1-Dichloroethane	5.315	4.933	7.2	110	-0.11
12	2,2-Dichloropropane	4.990	5.653	-13.3	124	-0.11
13	1,2-Dichloroethene (cis-)	2.595	2.449	5.6	113	-0.12
14	Bromochloromethane	1.222	1.275	-4.3	120	-0.12
	Chloroform	5.435	5.285	2.8	115	-0.11
16	1,1-Dichloropropene	4.894	5.291	-8.1	121	-0.12
17 S	1,2-Dichloroethane-d4	1.436	1.353	5.8	105	-0.13
18	1,2-Dichloroethane	1.843	1.685	8.6	110	-0.12
19	1,1,1-Trichloroethane	5.663	5.602	1.1	114	-0.12
20	Carbon Tetrachloride	5.308	5.969	-12.5	123	-0.11
21	Benzene	7.602	8.181	-7.6	125	-0.12
22	Trichloroethene	3.347	3.658	-9.3	122	-0.12
23	1,2-Dichloropropane	2.723	2.593	4.8	113	-0.13
24	Fluorobenzene	1.000	1.000	0.0	114	-0.12
25	Dibromomethane	0.126	0.123	2.5	117	-0.13
26	Bromodichloromethane	0.510	0.487	4.5	116	-0.13
27	cis-1,3-Dichloropropene	0.393	0.359	8.6	110	-0.12
28	trans-1,3-Dichloropropene	0.223	0.198	10.9	111	-0.11
29	1,3-Dichloropropane	0.244	0.232	4.7	113	-0.12
30	Dibromochloromethane	0.269	0.246	8.3	112	-0.12
31	Bromoform	0.132	0.126	4.6	111	-0.12
32 S	Toluene-d8	0.864	0.845	2.2	111	-0.12
33	Toluene	0.580	0.604	-4.1	124	-0.11
34	1,1,2-Trichloroethane	0.144	0.134	7.0	115	-0.11
35	Tetrachloroethene	0.343	0.375	-9.2	124	-0.12
36	1,2-Dibromoethane	0.180	0.178	1.0	117	-0.11
37	Chlorobenzene	0.634	0.596	5.9	114	-0.12
38	1,1,1,2-Tetrachloroethane	0.304	0.307	-0.9	117	-0.11
	Ethylbenzene	0.325	0.345	-6.2	122	-0.11
40	m,p-Xylenes	0.444	0.448	-0.9	120	-0.11
41	o-Xylene	0.378	0.390	-3.1	121	-0.14

(#) = Out of Range

V2233.D 524METH.M

Mon Dec 06 09:55:23 1993

VOA3

004158

Page 1

(4)

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\DEC3\V2233.D
 Acq Time : 6 Dec 93 9:17 am
 Sample : VSTD010
 Misc : 10 PPB VOA 524.2 STD / 25ML

Operator: TERRI
 Inst : VOA3
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\524METH.M
 Title : method 524.2
 Last Update : Fri Dec 03 09:20:02 1993
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
42	Styrene	0.598	0.570	4.6	116	-0.13
43	1,2-Dichlorobenzene-d4	1.000	1.000	0.0	113	-0.09
44	Isopropylbenzene	2.850	3.207	-12.6	124	-0.11
45 S	Bromofluorobenzene	1.096	1.110	-1.3	112	-0.11
46	Bromobenzene	1.358	1.443	-6.3	121	-0.11
47	1,1,2,2-Tetrachloroethane	0.406	0.389	4.3	115	-0.12
48	1,2,3-Trichloropropane	0.278	0.250	10.0	110	-0.10
49	n-Propylbenzene	3.944	4.349	-10.3	123	-0.11
50	2-Chlorotoluene	2.591	2.317	10.6	105	0.00
51	4-Chlorotoluene	2.125	2.317	-9.1	124	-0.11
52	1,3,5-Trimethylbenzene	2.290	2.468	-7.8	122	-0.10
53	Tert-Butylbenzene	2.451	2.683	-9.4	123	-0.10
54	1,2,4-Trimethylbenzene	2.267	2.262	0.2	117	-0.10
	Sec-Butylbenzene	3.466	4.074	-17.6	128	-0.11
56	1,3-Dichlorobenzene	1.197	1.297	-8.4	119	-0.10
57	1,4-Dichlorobenzene	1.177	1.253	-6.5	122	-0.10
58	p-Isopropyltoluene	2.748	3.116	-13.4	127	-0.09
59	1,2-Dichlorobenzene	0.942	0.977	-3.7	118	-0.09
60	n-Butylbenzene	3.102	3.620	-16.7	129	-0.09
61	1,2-Dibromo-3-Chloropropane	0.070	0.069	2.2	120	-0.10
62	1,2,4-Trichlorobenzene	0.743	0.775	-4.3	118	-0.12
63	Naphthalene	0.870	0.715	17.7	93	-0.13
64	Hexachlorobutadiene	0.791	0.905	-14.3	123	-0.12
65	1,2,3-Trichlorobenzene	0.576	0.582	-1.1	104	-0.14

QA/OC REPORT

III. Calibration Standard

MOST RECENT
INITIAL
CALIBRATION

DATE: 11-3-93

DAILY
CALIBRATION

DATE: 12-6-93

SUPPLY SOURCE:

COMPOUND	INITIAL RF _{ave}	%RSD ^a	DAILY RF	%DIFF ^b w/RF _{ave}
Bromobenzene				
Bromochloromethane				
Bromodichloromethane				
Bromoform ^a				
Bromomethane				
Carbon tetrachloride				
Chloroethane				
Chloroform ^a				
1-Chlorohexane				
Chloromethane ^a				
Dibromochloromethane				
Dibromomethane				
Dichloromethane (Methylene chloride)				
1,1-Dichloroethane ^a (1,1-DCA)				
1,2-Dichloroethane (1,2-DCA)				
1,1-Dichloroethylene ^a (1,1-DCE)				
trans- 1,2-Dichloroethylene				
1,2-Dichloropropane ^a				
cis- 1,3-Dichloropropylene				
trans- 1,3-Dichloropropylene				
1,1,1,2- Tetrachloroethane				
1,1,2,2- Tetrachloroethane ^a				
Tetrachloroethylene (PCE)				

III. Calibration Standard (cont'd)

COMPOUND	INITIAL RF ₁₀₀	%RSD ^d	DAILY RF	%DIFF ^e w/RF ₁₀₀
1,1,1-Trichloroethane (1,1,1-TCA)				
1,1,2-Trichloroethane (1,1,2-TCA)				
Trichloroethylene (TCE)				
1,2,3-Trichloropropane				
Trichlorofluoromethane				
Vinyl chloride* (VC)				
Benzene				
Chlorobenzene*				
1,2-Dichlorobenzene				
1,3-Dichlorobenzene				
1,4-Dichlorobenzene				
Ethyl benzene*				
Toluene*				
m,p-Xylenes				
o-Xylene				
Acetone				
Acrolein				
Acrylonitrile				
n-Butylbenzene				
sec-Butylbenzene				
tert-Butylbenzene				
2-Chloroethylvinyl ether				
2-Chlorotoluene				
4-Chlorotoluene				
Dichloro- difluoromethane				
cis- 1,2-Dichloroethylene				
trans- 1,2-Dichloroethylene				
1,3-Dichloropropane				
2,2-Dichloropropane				
1,1-Dichloropropylene				
Ethylene dibromide (EDB)				
Hexachlorobutadiene				
Isopropylbenzene				

III. Calibration Standard (cont'd)

COMPOUND ^c	INITIAL RF _{ave}	%RSD ^d	DAILY RF	%DIFF ^e w/RF _{ave}
p-Isopropyltoluene				
Methyl Ethyl Ketone				
Methyl Isobutyl Ketone				
Naphthalene				
n-Propylbenzene				
Styrene				
1,2,3-Trichlorobenzene				
1,2,4-Trichlorobenzene				
1,2,4-Trimethylbenzene				
1,3,5-Trimethylbenzene				
1,1,2-Trichloro- trifluoroethane				

SPK CONC = Spiking Concentration ($\leq 5 \times \text{PQL}$); PQL = Practical Quantitation Limit
 XMS = Percent Recovery of MS; XMSD = Percent Recovery of MSD; RPD = Relative Percent Difference;
 ACP = Acceptable Range of Percent; INITIAL RF_{ave} = Average Response Factor from Initial Calibration;
 DAILY RF = Response Factor from Daily Calibration; %RSD = Percent Relative Standard Deviation;
 %DIFF = Percent Difference; c = Listed Compounds are Ordered by Laboratory Analytical Methods: Halogenated,
 Aromatic, then Remaining Compounds Identified by GC/MS.
^dValue $\leq 10\%$ for GC EPA Methods 500 & 600 Series, $\leq 20\%$ for GC EPA Methods 8000 Series, $\leq 30\%$ for GC/MS Methods.
^eValue $\leq 20\%$ for GC EPA Methods 500 & 600 Series, $\leq 15\%$ for GC EPA Methods 8000 Series, $\leq 25\%$ for GC/MS Methods.
^fCalibration Check Compounds (CCC) for GC/MS Method:
^gSystem Performance Check Compounds (SPECC) for GC/MS Method

REQUIREMENT

1. Indicate any modification made to the EPA Methods (e.g., testing constituent list, columns).
2. Provide details of corrective actions in any out of control events (e.g., re-calibration, blank contamination, etc.).
3. Co-elution must be resolved prior to reporting, except for xylenes.
4. Second column or MS confirmation must be performed for all compounds detected.
5. Analytical results are not to be blank adjusted.
6. Chemical standards for QC check samples and calibration should be obtained from different supply sources.
7. Any change of column, detector, chemical standard, etc. shall result in a new initial calibration.
8. Lowest concentration injected for initial calibration should not exceed three times of laboratory method detection limits.
9. Re-calibration is required whenever the RF from daily calibration is not within the range specified in item "e" above from initial calibration RF_{ave}.
10. Tentative identified compounds and all unidentified peaks must be reported.
11. Chromatogram for calibration standards, quality control check samples, and selected environmental samples must be submitted upon request.

**RESULTS OF GROUNDWATER MONITORING
SECOND QUARTER 1994
ALLIEDSIGNAL AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

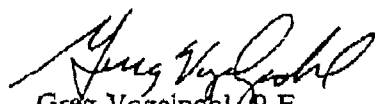
VOLUME I

Prepared for:
AlliedSignal Aerospace
2525 West 190th Street
Torrance, California 90509

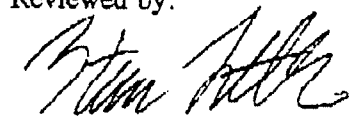
Prepared by:
SECOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

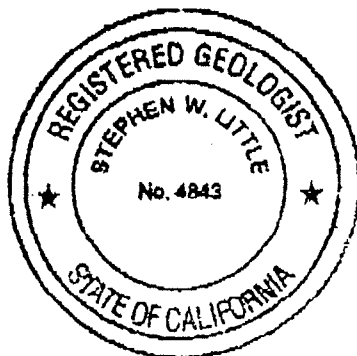
October 27, 1994
Job Number: A0057-001-01/ASN15

Prepared by:


Greg Vogelpohl, P.E.
Associate Engineer

Reviewed by:


Steve Little, R.G.
Principal Geologist



**RESULTS OF GROUNDWATER MONITORING
SECOND QUARTER 1994
ALLIEDSIGNAL AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

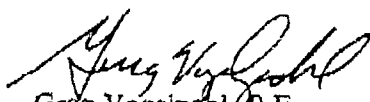
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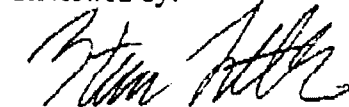
Prepared by:
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

October 27, 1994
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SECOND QUARTER 1994
ALLIEDSIGNAL AEROSPACE
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December 7, 1994

Mr. Barry Foose
Kaiser Regional Laboratories
Health and Environmental Safety Officer
11668 Sherman Way
North Hollywood, California 91605

Dear Mr. Foose:

Per your request, one (1) copy is enclosed for each of the below referenced documents:

1. RESULTS OF GROUNDWATER MONITORING
SECOND QUARTER 1994
AlliedSignal AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA
VOLUME I
dated October 27, 1994
Prepared by SEACOR
2. RESULTS OF GROUNDWATER MONITORING
FIRST QUARTER 1994
AlliedSignal AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA
VOLUME I
dated May 31, 1994
Prepared by SEACOR
3. RESULTS OF GROUNDWATER MONITORING
FOURTH QUARTER 1993
AlliedSignal AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA
VOLUMES I and II
dated January 27, 1994
Prepared by SEACOR

iedSignal
AEROSPACE

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December 7, 1994

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004167

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1.0 QUALITY ASSURANCE/QUALITY CONTROL REPORT

Appendix A	QC Summary
Appendix B	Case Narrative
Appendix C	General Chemistry
Appendix D	Metals
Appendix E	Fuels (EPA 8015 Modified)
Appendix F	Volatiles (EPA 524.2)

1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the second quarter of 1994 was conducted at the AlliedSignal Aerospace property in North Hollywood, California on May 16-18, 1994 in accordance with the California Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. Six on-site groundwater monitoring wells (GW-1 through GW-6) and four off-site groundwater monitoring wells (GW-7 through GW-10) were sampled during the May, 1994 monitoring event.

Groundwater levels in the wells have risen between 5.58 (well GW-6) and 6.26 (well GW-8) feet during the period between March 7 and June 16, 1994. Based on the water level measurements obtained on April 15, May 16, and June 16, 1994, the instantaneous groundwater flow direction was northeasterly beneath the eastern portion of the site and easterly beneath the central and western portions of the site. However, determination of an average groundwater flow direction based on the groundwater contours in a transient system may be questionable and open to interpretation.

Consistent with regional data, nitrate was detected in the groundwater samples collected from monitoring wells GW-2 through GW-6 and GW-8 at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL) during the May 1994 sampling event. The compound trichloroethene (TCE) was detected in the groundwater samples collected from wells GW-2, GW-3 and GW-10 during the May 1994 sampling event at concentrations above the DHS MCL. All other Volatile Organic Compounds (VOCs) detected in the groundwater samples collected from the six on-site and four off-site monitoring wells during the May 1994 sampling event were present at concentrations below their respective MCLs.

During the last four sampling events, concentrations of TCE generally increased from November 1993 to February 1994 but subsequently decreased in several of the wells between February/March 1994 and May 1994. For example, the TCE concentrations detected in wells GW-1, GW-2, GW-4 and GW-7 through GW-10 increased between one and two orders of magnitude from the November, 1993 to the February 1994 sampling episode, whereas the TCE concentrations in wells GW-3, GW-5 and GW-6 remained consistent during this period. However, the TCE concentrations detected in all ten monitoring wells have decreased as much as two orders of magnitude from the February/March 1994 sampling episode to the May 1994 sampling event. Pumping of the production wells in the Tujunga and Rinaldi-Toluca well fields has increased immediately after the January 17, 1994 Northridge Earthquake. The pumping effect may account for the fluctuation in TCE concentrations detected in wells at the subject site.

2.0 INTRODUCTION

On behalf of AlliedSignal Aerospace, Science & Engineering Analysis Corporation (*SEACOR*) has prepared this report presenting the results of groundwater monitoring conducted by *SEACOR* in May 1994 at the AlliedSignal Aerospace property located at 11600 Sherman Way in North Hollywood, California (see Figure 1). Groundwater monitoring and sampling of wells GW-1 through GW-6 at the subject site and wells GW-7 through GW-10 at the adjacent Kaiser facility (see Figure 2) was conducted in accordance with the RWQCB WIP guidelines.

Groundwater monitoring activities commenced at the site with the installation of two wells in 1987. After two monitoring events were conducted, the wells were abandoned at the request of the RWQCB. One of these former wells, W-1, was located near the southwestern corner of the AlliedSignal property (see Figure 2) and was abandoned by *SEACOR* in June 1993 in accordance with a workplan approved by the RWQCB. VOC analytical results obtained from well W-1 in May and June 1987 are presented in Table 15.

Quarterly groundwater monitoring at the site has been conducted regularly since the third quarter of 1991. Historical groundwater elevations and analytical results from the most recent and previous groundwater monitoring events are presented in Tables 4 through 25 and Figures 7 through 62.

3.0 WATER LEVEL MEASUREMENTS

During the second quarter of 1994, depth to groundwater was measured in the six on-site monitoring wells and the four off-site monitoring wells on April 15, May 16, and June 16, 1994 with an Environmental Instruments Company (EI) water level meter according to the protocol described in Appendix A. Water level data obtained on April 15, May 16, and June 16, 1994 are summarized in Table 1.

The data indicate that groundwater levels beneath the site have risen between 5.58 (well GW-6) and 6.26 (well GW-8) feet during the period between March 7 and June 16, 1994. Historic groundwater elevations are presented in Table 4.

The groundwater level measurements obtained on April 15, 1994 indicate that the instantaneous average groundwater flow direction was northeasterly at a gradient of 0.0014 beneath the eastern portion of the site and easterly at a gradient of 0.0017 beneath the central and western portions of the site and the Kaiser facility. Based on water level measurements obtained May 16, 1994, the average groundwater flow direction was northeasterly at a gradient of 0.0017 beneath the eastern portion of the site and easterly at a gradient of 0.0021 beneath the central and western portions of the site and the Kaiser facility. The groundwater level measurements obtained on June 16, 1994 indicate that the average groundwater flow direction was northeasterly at a gradient of 0.001 beneath the eastern portion of the site and easterly at a gradient of 0.0021 beneath the central and western portions of the site and the Kaiser facility. Figures 3 through 5 present groundwater elevation contour maps based on the April 15, May 16, and June 16, 1994 groundwater surface elevations, respectively.

The groundwater flow direction beneath, and in the vicinity of the site, appears to be influenced by groundwater extraction from aeration wells and North Hollywood and Rinaldi-Toluca well fields located west and northwest of the subject site, respectively (Remedial Investigation Report for Groundwater Contamination in the San Fernando Valley - Volume 1, James M. Montgomery, December 1992). Although groundwater elevation contour maps have been prepared based on groundwater elevations measured at the site, the calculated groundwater flow direction(s) may not be accurate or representative due to the influence of regional pumping. Under transient conditions (regional pumping), groundwater pathlines and streamlines are not coincident.

4.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater monitoring wells GW-1 through GW-10 were purged and sampled on May 16-18, 1994 according to the protocol described in Appendix A. Prior to purging, the bladder pump intakes in the wells were placed approximately 8-10 feet below the top of the screened intervals and the packers were inflated. This enabled the upper 8 to 10 feet of water below the top of the screened interval in the wells to be isolated during sampling.

All groundwater analyses were conducted by BC Analytical (BCA) in Glendale, California. For Quality Assurance/Quality Control (QA/QC) purposes, a field blank and a trip blank sample were collected on May 16-18, 1994. The primary groundwater samples obtained from monitoring wells GW-1 through GW-10 on May 16-18, 1994 were delivered to BCA in Glendale and analyzed for the following:

- Method 524.2 - Volatile organics;
- Method 8015M - Total Petroleum Hydrocarbons;
- Method 300.0-L - Sulfates, chlorides;
- Method 310.1-L - Alkalinity - total, hydroxyl, carbonate, bicarbonate;
- Method 6010-L - Calcium, magnesium, potassium, sodium;
- Method 160.1 and 180.1 - Total Dissolved Solids and turbidity;
- Method 300.0-N - Nitrate and nitrite;
- Method 350.1-L - Ammonia nitrogen

All samples were immediately placed on ice following collection. Individual samples were collected in pre-cleaned, analysis-specific containers supplied by the laboratory with the appropriate preservative and clearly marked and dated for identification. Samples were securely packed and delivered to the laboratory within 24 hours of collection via courier. All samples were preserved and stored for analysis no longer than the maximum allowable holding time. The following table presents the appropriate sample containers, holding time, container size and preservative for each analytical method used in this project.

TABLE 4.1 - SAMPLING GUIDE			
ANALYSIS	HOLDING TIME	CONTAINER SIZE	PRESERVATIVE
Volatile Organics-EPA Test Method 524.2	14 days	2-40 ml (glass) with septum	Cool, No HS, HCL
Total Petroleum Hydrocarbons-EPA Test Method 8015M	14 days	4 oz (amber glass) with septum	Cool, No HS, HCL
Sulfates & Chlorides-EPA Test Method 300.0	28 days	4 oz (plastic)	Cool
Alkalinity (total, hydroxyl, carbonate, bicarbonate)-EPA Test Method 310.1	14 Days	4 oz (plastic)	Cool
Calcium, Magnesium, Potassium, Sodium-EPA Test Method 6010	6 months	16 oz (plastic)	Cool, HNO ₃
Total Dissolved Solids-EPA Test Method 160.1	7 days	16 oz (plastic)	Cool
Turbidity-EPA Test Method 180.1	2 days	4 oz (plastic)	Cool
Nitrate & Nitrite-EPA Test Method 300.0	48 hours	4 oz (plastic)	Cool
Ammonia Nitrogen-EPA Test Method 350.1	28 days	4 oz (plastic)	Cool, H ₂ SO ₄

Note:

HS	- Headspace
HCL	- Hydrochloric Acid
H ₂ SO ₄	- Sulfuric Acid
HNO ₃	- Nitric Acid

Laboratory reports and chain-of-custody documents for this groundwater monitoring event are presented in Volume 2, Appendices A and B, respectively.

by the National Academy of Sciences. The turbidity levels detected in the samples collected from wells GW-2 through GW-4 and GW-6 through GW-8 were above the DHS Secondary MCL of 5 Nephelometric Turbidity Units (NTU). Primary MCLs include a potential of health risk, whereas, secondary MCLs are derived from human welfare considerations (usually taste and odor) and do not include a consideration of health risk. The concentrations of nitrate detected in the groundwater samples collected from wells GW-2 through GW-6 and GW-8 were above the DHS MCL of 45 mg/l.

Turbidity was detected in the equipment blank sample at a concentration of 0.81 nephelometric turbidity units (NTUs). All other inorganic compounds were not detected in the equipment blank sample above their respective detection limits.

Inorganic compound analytical results for the second quarter 1994 monitoring event are presented in Table 2. Historic inorganic compound analytical results are presented in Tables 5 through 14. Please note that nitrate values reported prior to January 1993 were quantified as nitrate as N, whereas recent data are reported as nitrate as NO₃ in accordance with the Sampling and Analysis Plan approved by the RWQCB. Nitrate concentrations detected during the second quarter 1994 monitoring event are shown on Figure 6.

6.2 VOLATILE ORGANIC COMPOUNDS

TCE was detected at concentrations ranging from 0.36 (GW-7) to 12 micrograms per liter ($\mu\text{g}/\ell$) (GW-10) in the groundwater samples collected from the ten monitoring wells. The highest concentrations of TCE were detected in wells GW-2, GW-3 and GW-10 located near the boundary of Kaiser property and the site. The concentrations of TCE detected in wells GW-2, GW-3 and GW-10 were above the DHS MCL of 5 $\mu\text{g}/\ell$.

The compound tetrachloroethene (PCE) was detected at concentrations ranging from 0.22 (GW-4) to 1.4 $\mu\text{g}/\ell$ (GW-1) in the groundwater samples collected from wells other than GW-7 and GW-9. PCE was not detected in the groundwater samples collected from wells GW-7 and GW-9 above a detection limit of 0.2 $\mu\text{g}/\ell$. All the concentrations of PCE detected were below the DHS MCL of 5 $\mu\text{g}/\ell$.

TPH was not present above a detection limit of 1,000 $\mu\text{g}/\ell$ in any of the ten groundwater samples.

1,3-dichloropropane (1,3-DCP) was detected at a concentration of 0.48 $\mu\text{g}/\ell$ in the groundwater samples collected from well GW-9. 1,3-DCP was not detected above a detection limit of 0.2 $\mu\text{g}/\ell$ in the other nine groundwater samples.

Toluene was detected at a concentration of 0.15 $\mu\text{g}/\ell$ in the groundwater samples collected from well GW-7. Toluene was not detected above a detection limit of 0.2 $\mu\text{g}/\ell$ in the other nine groundwater

samples.

Chloroform was detected at concentrations ranging from 0.18 to 0.33 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-2 through GW-6, GW-8 and GW-10. Chloroform was not detected in the other three groundwater samples above a detection limit of 0.2 $\mu\text{g}/\ell$. The concentrations of chloroform detected were below the DHS MCL of 100 $\mu\text{g}/\ell$ for total trihalomethanes (THMs).

The compound cis-1,2-dichloroethene (cis-1,2-DCE) was detected at concentrations ranging from 0.25 to 1.1 $\mu\text{g}/\ell$ in the groundwater samples collected from wells GW-1, GW-2, GW-5, GW-6, GW-8 and GW-10. cis-1,2-DCE was not detected in the other four groundwater samples above a detection limit of 0.2 $\mu\text{g}/\ell$. All the detected concentrations of cis-1,2-DCE were below the DHS MCL of 6 $\mu\text{g}/\ell$.

All other VOCs were not detected in the ten groundwater samples above detection limits of 0.2 to 1 $\mu\text{g}/\ell$.

Chloroform was detected at a concentration of 0.54 $\mu\text{g}/\ell$ in the equipment blank samples. No other VOCs were detected in the equipment blank samples above their respective detection limits. No VOCs were detected in the trip blank samples above their respective detection limits.

VOC analytical results for the groundwater samples collected from the monitoring wells during the second quarter 1994 monitoring event are presented in Table 3 and Figure 6. Historical VOC analytical results are presented in Tables 15 through 25. Historical groundwater surface elevations, nitrate and VOC concentrations for wells GW-1 through GW-10 are presented in Figures 7 through 62.

7.0 DISCUSSION

Based on groundwater level measurements obtained between March 7 and June 16, 1994, groundwater elevations have increased between 5.58 (well GW-6) and 6.26 (well GW-8) feet beneath the site. Figure 63 presents the change in groundwater elevations beneath the site and the Kaiser facility between March and June 1994. Based on the water level measurements obtained on April 15, May 16, and June 16, 1994, the instantaneous groundwater flow direction was northeasterly beneath the eastern portion of the site and easterly beneath the central and western portions of the site and the Kaiser facility. Instantaneous groundwater flow beneath the site is significantly impacted by pumping of aeration wells and supply wells located within the Rinaldi-Toluca and North Hollywood well fields.

TCE was detected in the groundwater samples collected from wells GW-2, GW-3 and GW-10 during the May 16-18, 1994 sampling event at concentrations above the MCL. All other VOCs detected in the groundwater samples collected from the six on-site wells and four off-site wells were present at concentrations below their respective MCLs.

In general, the concentrations of VOCs detected in all ten groundwater monitoring wells have decreased from the February/March 1994 sampling event to the May, 1994 sampling episode. The concentrations of TCE detected in wells GW-1 through GW-10 decreased from 62, 890, 15, 65, 0.97, 1.2, 3,100, 30, 16 and 2,300 $\mu\text{g}/\ell$, respectively, during the February 1994 sampling event to 3.5, 9.6, 6.0, 0.63, 0.77, 0.95, 0.36, 1.2, 3.4 and 12 $\mu\text{g}/\ell$, respectively, during the May 1994 sampling event. The pumping of the production wells in the Tujunga and Rinaldi-Toluca well fields may account for the fluctuation in TCE concentrations detected in certain wells at the subject site.

Nitrate was detected in the groundwater samples collected from wells GW-2 through GW-6 and GW-8 at concentrations above the MCL during the May 16-18, 1994 sampling episode. The turbidity levels in wells GW-2 through GW-4 and GW-6 through GW-8 were above the secondary MCL during the May 16-18, 1994 sampling event. No other inorganic constituents were detected above the primary or secondary MCLs during the May 16-18, 1994 sampling episode.

The next groundwater monitoring episode at the site is scheduled for early August (3rd Quarter 1994).

8.0 LIMITATIONS

SEACOR has prepared this report for the exclusive use of AlliedSignal Aerospace, their representatives, and other authorized parties. The findings and conclusions presented herein are based primarily upon the laboratory analyses of groundwater samples collected during this study. All work has been conducted in accordance with generally accepted practices in the fields of environmental engineering, geology, and hydrogeology that exist in Los Angeles County at this time. No other warranty, either expressed or implied, is made.

TABLES

TABLE 1 - GROUNDWATER SURFACE ELEVATIONS
(all elevations in feet above mean sea level)

Well ID	Wellhead Elevation	Depth to Water (04/15/94)	Groundwater Elevation (04/15/94)	Depth to Water (05/16/94)	Groundwater Elevation (05/16/94)	Depth to Water (06/16/94)	Groundwater Elevation (06/16/94)
GW-1	734.39	222.48	511.91	220.05	514.34	218.29	516.10
GW-2	737.82	225.31	512.51	222.81	515.01	220.95	516.87
GW-3	735.53	223.19	512.34	220.72	514.81	218.95	516.58
GW-4	734.63	223.25	511.38	220.83	513.80	219.03	515.60
GW-5	735.72	223.76	511.96	221.42	514.30	219.76	515.77
GW-6	739.92	228.83	511.09	226.61	513.31	224.82	515.10
GW-7	734.48	221.96	512.52	219.48	515.00	217.73	516.75
GW-8	741.80	228.82	512.98	226.19	515.61	224.25	517.55
GW-9	740.55	227.47	513.08	224.82	515.73	222.93	517.62
GW-10	737.44	224.64	512.80	222.08	515.36	220.31	517.13

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS
(all results in micrograms per liter)

Organic Constituent	GW-1 (05/16/94)	GW-2 (05/18/94)	GW-3 (05/18/94)	GW-4 (05/17/94)	GW-5 (05/17/94)	GW-6 (05/16/94)	GW-7 (05/18/94)	GW-8 (05/17/94)	GW-9 (05/17/94)	GW-10 (05/18/94)	Equipment Blank (05/18/94)	Trip Blank (05/18/94)
TPH	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
1,1,1,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,1-Trichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,4-Trichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3,5-Trimethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.48	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS
(all results in micrograms per liter)

Organic Constituent	GW-1 (05/16/94)	GW-2 (05/18/94)	GW-3 (05/18/94)	GW-4 (05/17/94)	GW-5 (05/17/94)	GW-6 (05/16/94)	GW-7 (05/18/94)	GW-8 (05/17/94)	GW-9 (05/17/94)	GW-10 (05/18/94)	Equipment Blank (05/18/94)	Trip Blank (05/18/94)
2,2-Dichloropropane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
4-Chlorotoluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromoform	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	<0.2	0.33	0.31	0.25	0.26	0.28	<0.2	0.31	<0.2	0.18	0.54	<0.2
Chloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromochloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichloromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromomethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichlorodifluoromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Freon 113	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Hexachlorobutadiene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS
(all results in micrograms per liter)

Organic Constituent	GW-1 (05/16/94)	GW-2 (05/18/94)	GW-3 (05/18/94)	GW-4 (05/17/94)	GW-5 (05/17/94)	GW-6 (05/16/94)	GW-7 (05/18/94)	GW-8 (05/17/94)	GW-9 (05/17/94)	GW-10 (05/18/94)	Equipment Blank (05/18/94)	Trip Blank (05/18/94)
Isopropylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
N-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
N-Propylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene	3.5	9.6	6.0	0.63	0.77	0.95	0.36	1.2	3.4	12	<0.2	<0.2
Trichlorofluoromethane	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.15	<0.2	<0.2	<0.2	<0.2	<0.2
Tetrachloroethene	1.4	0.99	0.71	0.22	1.0	0.81	<0.2	0.79	<0.2	1.0	<0.2	<0.2
Vinyl Chloride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	1.1	0.49	<0.2	<0.2	0.94	0.33	<0.2	0.55	<0.2	0.25	<0.2	<0.2
cis-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
m- & p-xylenes	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p-Isopropyl toluene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
sec-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,3-Dichloropropene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
tert-Butylbenzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Total Petroleum Hydrocarbons.
Less than the detection limit of 0.2.

TABLE 4 - HISTORIC GROUNDWATER SURFACE ELEVATIONS
(all elevations in feet above mean sea level)

Date	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10
07/19/91	472.30	472.33	472.15	473.38	473.78	474.63	NC	NC	NC	NC
08/12/91	470.38	470.53	470.45	470.52	471.98	473.34	NC	NC	NC	NC
09/17/91	468.38	468.17	468.11	468.47	470.05	470.84	NC	NC	NC	NC
11/18/91	467.66	467.97	467.76	467.56	468.91	469.43	NC	NC	NC	NC
12/10/91	471.32	471.56	471.45	470.78	471.86	476.06	NC	NC	NC	NC
01/13/92	475.52	475.88	475.64	475.19	477.13	475.66	NC	NC	NC	NC
02/19/92	478.72	479.14	479.09	477.95	478.99	477.53	NC	NC	NC	NC
03/17/92	475.67	475.92	475.85	475.36	476.22	476.82	NC	NC	NC	NC
04/01/92	474.12	476.07	474.70	474.66	475.33	476.33	NC	NC	NC	NC
05/19/92	472.11	472.52	471.96	471.28	472.42	474.01	NC	NC	NC	NC
06/15/92	472.80	473.12	472.87	472.47	473.75	473.79	NC	NC	NC	NC
07/22/92	471.87	471.94	471.95	471.47	472.78	472.55	NC	NC	NC	NC
08/10/92	469.97	470.13	470.03	469.76	471.03	471.55	NC	NC	NC	NC
09/04/92	463.93	464.95	464.00	464.37	466.04	468.38	NC	NC	NC	NC
11/12/92	462.97	462.55	462.82	462.75	464.85	464.38	NC	NC	NC	NC
12/21/92	468.71	468.22	468.66	468.20	470.04	468.33	NC	NC	NC	NC
01/14/93	473.10	473.00	473.27	472.44	473.99	471.78	NC	NC	NC	NC
02/16/93	477.70	478.02	478.11	477.00	478.14	475.24	NC	NC	NC	NC
03/02/93	479.52	479.91	479.95	478.89	480.04	476.84	NC	NC	NC	NC
03/25/93	482.56	482.92	482.95	481.99	483.02	480.12	NC	NC	NC	NC
05/09/93	487.59	488.15	488.13	487.21	488.04	486.07	NC	NC	NC	NC
06/01/93	490.08	490.83	490.67	489.63	490.40	488.53	NC	NC	NC	NC
06/17/93	488.29	489.63	488.85	487.80	488.65	488.59	NC	NC	NC	NC
06/30/93	491.29	492.34	491.99	491.28	492.16	490.31	NC	NC	NC	NC
08/02/93	496.49	497.40	497.24	496.22	496.86	494.70	NC	NC	NC	NC
08/18/93	496.44	497.61	497.19	495.73	496.06	495.36	NC	NC	NC	NC
09/08/09/93	NM	NM	NM	NM	NM	NM	498.56	499.90	500.30	499.04
09/13/93	498.72	499.91	499.41	498.48	498.98	497.89	NC	NC	NC	NC

TABLE 4 - HISTORIC GROUNDWATER SURFACE ELEVATIONS
(all elevations in feet above mean sea level)

Date	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10
10/14/93	501.79	502.84	502.45	501.13	501.53	500.57	NC	NC	NC	NC
11/29/93	506.29	507.14	506.93	505.90	506.24	504.53	507.16	507.91	508.16	507.52
12/07/93	506.99	507.83	507.60	506.56	506.96	505.37	NM	NM	NM	NM
01/07/94	509.37	510.20	509.88	508.93	509.28	507.90	510.19	510.96	511.21	510.57
02/15/94	508.77	509.44	509.09	508.29	508.50	508.84	508.97	509.66	509.36	509.03
03/07/94	510.18	510.78	510.53	509.71	510.15	509.52	510.74	511.29	511.37	510.88
04/15/94	511.91	512.51	512.34	511.38	511.96	511.09	512.52	512.98	513.08	512.80
05/16/94	514.34	515.01	514.81	513.80	514.30	513.31	515.00	515.61	515.73	515.36
06/16/94	516.10	516.87	516.58	515.60	515.77	515.10	516.75	517.55	517.62	517.13

NC: Not calculated.
NM: Not measured.

004184

TABLE 5 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date											
	08/21/91	09/17/91	01/14/92	03/16/92	05/19/92	08/11/92	01/14/93	03/02/93	06/01/93	12/07/93	02/18/94	05/16/94
Chloride	44.7/46.9	38.5	31.0	24.2	29.0	37.0	22	27	27	25	27	26
Sulfate	74.7/67.1	69.3	59.3	50.8	59.4	64.0	55	59	55	56	56	65
Carbonate Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210	210
Hydroxide Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1
Total Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210	210
Calcium	113/111	103	81.5	79.8	88.9	85	86	86	89	91	95	92
Magnesium	24.9/24.7	23.6	18.3	17.1	17.8	19.9	18	17	19	19	20	19
Potassium	ND/ND	ND	ND	ND	ND	ND	3.9	3.7	3.8	3.8	5.2	3.9
Sodium	24.5/23.9	23.6	23.6	22.7	24	26.1	25	24	26	27	26	26
TDS	551/514	580	437	441	440	581	400	360	400	410	420	430
Turbidity	ND/ND	0.38	0.40	0.60	0.20	0.2	0.68	1.0	2.4	1.42	3.1	3.9
Nitrate	18/17.8	17.7	10.5	10.9	14.9	17.3	45	42	38	36	49	37
Nitrite	ND/ND	ND	3.9	ND	ND	ND	<0.05	<0.05	<0.05	<0.1	<0.1	<0.2
Ammonia Nitrogen	0.48/0.35	0.51	ND	0.20	ND	ND	<0.1	0.21	<0.1	0.38	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units
TDS: Total Dissolved Solids
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 6 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date												
	08/21/91	09/17/91	01/16/92	03/17/92	05/20/92	08/10/92	01/14/93	03/02/93	06/02/93	08/19/93	11/00/93	02/16/94	05/18/94
Chloride	40.8	34.8/33.4	28.9	25.2	26.4	24.3	31	30	30	28	31	32	35
Sulfate	63.7	63.7/61.9	57.3	48.5	59	52.6	58	55	55	65	56	56	61
Carbonate Alkalinity	ND	ND/ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	246	248/248	172	197	261	264	210	210	210	220	280	290	240
Hydroxide Alkalinity	ND	ND/ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	246	248/248	172	197	261	264	210	210	210	220	280	290	240
Calcium	111	96.9/100	79.2	85	89	87.6	79	98	84	95	86	130	100
Magnesium	24.2	23.1/17.8	17.8	19	20.1	20.0	17	20	18	20	19	27	22
Potassium	ND	ND/ND	ND	ND	ND	ND	3.3	3.9	3.4	3.7	3.3	4.4	4.2
Sodium	24.1	23.5/24.1	25.2	27.9	23.5	25.2	23	26	24	25	24	27	26
TDS	490	541/534	443	369	441	485	430	400	440	440	460	550	430
Turbidity	ND	3.8/4.0	3.0	1.40	0.20	0.5	19	23	8.7	39	4.4	21	180
Nitrate	13.9	14.5/14.4	19.9	11.4	10.6	9.1	69	64	58	66	61	60	68
Nitrite	ND	ND/ND	3.5	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2
Ammonia Nitrogen	0.35	ND/ND	ND	2.7	ND	ND	<0.1	0.11	<0.1	<0.1	<0.1	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected.

TABLE 7 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date												
	08/22/91	09/17/91	01/16/92	03/16/92	05/19/92	06/12/92	01/14/93	03/02/93	06/02/93	08/19/93	11/20/93	02/16/94	05/18/94
Chloride	42.2	36.3	33.3/34	30.3/39	33.3/32	36.0	33	28	33	26	27	28	31
Sulfate	66.9	68.5	61.1/54	52.1/59	61.9/61.9	66.1	54	53	52	56	50	52	57
Carbonate Alkalinity	ND	ND	ND/ND	ND/ND	ND/ND	ND	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	240	244	208/201	232/228	245/253	248	190	190	200	200	210	210	190
Hydroxide Alkalinity	ND	ND	ND/ND	ND/ND	ND/ND	ND	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	240	244	208/201	232/228	245/253	248	190	190	200	200	210	210	190
Calcium	98.3	107	81.4/101	86.6/96.7	88.6/92.4	110	89	86	90	91	82	100	98
Magnesium	22.3	24.5	19.8/21.7	19.7/22.1	20.1/21.0	23.6	19	18	19	19	18	21	20
Potassium	ND	ND	ND/4	ND/4	ND/ND	ND	3.9	3.5	3.9	3.8	3.6	4.2	4.6
Sodium	22.4	25.1	24.8/26.8	25.1/29.5	24.4/25.5	23.8	26	24	26	25	24	25	26
TDS	524	521	477/330	429/450	455/492	1,070	420	360	400	380	500	460	360
Turbidity	ND	ND	0.50/0.15	0.40/0.20	0.20/0.20	0.20	4.3	0.85	2.0	8.9	4.7	27	160
Nitrate	16.0	16.3	12.4/15.2	13.9/15.8	15.7/15.6	15.5	66	60	56	66	57	60	67
Nitrite	ND	ND	4.4/ND	ND/ND	ND/ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2
Ammonia Nitrogen	0.15	ND	ND/ND	0.12/ND	ND/ND	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.10	<0.1

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

004187

TABLE 8 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW 4
(all results in milligram per liter, except turbidity)

Inorganic Constituent	Sample Date											
	08/19/91	01/15/92	03/18/92	05/19/92	06/16/92	01/16/93	03/03/93	06/02/93	08/19/93	11/30/93	02/15/94	05/17/94
Chloride	37.4	33.8/34.1	33.7	34.8	39.1/39.2	28	27	23	24	26	31	30
Sulfate	66.9	61.5/61.5	55.0	63.9	63.6/74.2	60	47	45	62	52	55	57
Carbonate Alkalinity	ND	ND/ND	ND	ND	ND/ND	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	246	216/212	225	227	240/228	220	210	190	200	210	220	240
Hydroxide Alkalinity	ND	ND/ND	ND	ND	ND/ND	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	246	216/212	225	227	240/228	220	210	190	200	210	220	240
Calcium	99.4	89.9/89.7	101	96.4	101/102	100	95	86	87	80	110	91
Magnesium	23.3	20.6/20.5	23.0	22.4	23.8/24.1	22	20	19	18	17	23	20
Potassium	ND	ND/ND	ND	ND	ND/ND	3.9	3.8	3.7	3.6	3.3	3.9	3.8
Sodium	23.0	23.4/23.3	23.2	23.9	36.0/44.2	26	24	24	23	23	25	25
TDS	495	481/481	453	485	625/585	490	440	400	400	500	440	420
Turbidity	0.40	0.40/0.50	0.80	0.20	0.20/1	3.1	8.5	0.58	5.2	1.1	39	6.0
Nitrate	18.1	12.6/12.5	14.8	17.5	18.6/18.4	52	64	41	52	51	64	64
Nitrite	ND	4.3/4.2	ND	ND	ND/ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2
Ammonia Nitrogen	1.0	ND/ND	0.23	ND	ND/ND	<0.1	0.11	<0.1	<0.1	<0.1	0.11	<0.1

Turbidity measured in Nephelometric Turbidity Units
TDS: Total Dissolved Solids
<1: Less than the detection limit of 1
ND: Not Detected

004188

TABLE 9 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-5
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date													
	06/20/91	09/17/91	01/15/92	03/18/92	05/20/92	06/12/92	01/16/93	03/02/93	06/02/93	08/18/93	11/20/93	02/18/94	05/17/94	
Chloride	38.2	37.4	30.3	27.8	40.8	38.3	33	24	26	22	26	26	28	
Sulfate	67.5	65.7	66.6	55.6	68.2	62.5	58	54	51	60	56	56	63	
Carbonate Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity	234	232	196	205	277	243	190	190	190	200	220	210	200	
Hydroxide Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	
Total Alkalinity	234	232	196	205	277	243	190	190	190	200	220	210	200	
Calcium	94.6	106	86.9	88.3	100	108	87	81	77	85	83	96	90	
Magnesium	22.8	25.2	20.1	20.2	23.7	24.3	19	17	17	18	18	20	19	
Potassium	ND	ND	ND	ND	ND	ND	3.4	3.2	3.0	3.3	3.2	3.4	3.4	
Sodium	22.4	24.7	22.6	21.9	24.3	22.8	23	21	21	22	23	23	22	
TDS	493	519	456	397	485	720	420	370	400	400	450	390	430	
Turbidity	0.50	ND	0.90	1.9	0.20	0.40	11	1.2	0.58	1.3	20	28	3.9	
Nitrate	18.0	18.2	10.4	11.7	18.8	17.9	77	50	44	49	45	50	50	
Nitrite	ND	ND	4.0	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	
Ammonia Nitrogen	0.55	0.11	ND	0.34	0.11	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.21	<0.1	

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

004189

TABLE 10 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-4
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date													
	08/22/91	09/19/91	01/16/92	03/17/92	05/20/92	06/11/92	01/14/93	03/03/93	06/01/93	08/18/93	11/30/93	02/18/94	05/16/94	
Chloride	41.3	36.2	38.2	32.7	40.3	40.1	35	31	36	30	32	36	35	
Sulfate	65.2	70.4	68.8	54.2	67.5	65.7	60	52	54	60	54	57	59	
Carbonate Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity	ND	236	208	244	253	243	270	250	240	230	260	240	220	
Hydroxide Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1	<1	
Total Alkalinity	ND	236	208	244	253	243	270	250	240	230	260	240	220	
Calcium	101	103	101	105	105	103	110	110	110	98	97	110	110	
Magnesium	24.3	26.3	23.6	24.4	25.1	25.4	24	24	24	21	21	25	24	
Potassium	ND	5.1	ND	ND	ND	ND	4.2	4.0	4.0	3.6	3.6	3.9	4.3	
Sodium	22.9	24.0	23.6	25.0	25.6	27.7	26	26	27	24	23	26	25	
TDS	513	589	553	457	491	605	470	490	500	480	700	460	490	
Turbidity	ND	96	2.2	0.50	0.20	0.4	9.5	33	2.0	1.4	34	56	37	
Nitrate	19.6	19.1	13.1	13.9	18.7	19.1	74	65	71	75	63	69	69	
Nitrite	ND	ND	4.9	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	<0.2	
Ammonia Nitrogen	0.23	ND	ND	1.5	ND	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.10	<0.1	

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

004190

TABLE 11 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date			
	09/08/93	11/29/93	02/16/94	05/18/94
Chloride	27	27	27	26
Sulfate	57	53	66	62
Carbonate Alkalinity	<20	<2	<1	<1
Bicarbonate Alkalinity	180	190	260	190
Hydroxide Alkalinity	<20	<2	<1	<1
Total Alkalinity	180	190	260	190
Calcium	96	72	130	80
Magnesium	21	18	26	17
Potassium	4	3.7	4.2	3.6
Sodium	29	26	30	27
TDS	420	860	550	350
Turbidity	7.0	<1.0	7.8	5.1
Nitrate	63	49	71	44
Nitrite	ND	<1.0	<0.1	<0.2
Ammonia Nitrogen	<0.02	<1.0	0.12	<0.1

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 12 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-8
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date			
	09/09/93	11/29/93	02/16/94	05/17/94
Chloride	34	35	34	38
Sulfate	60	56	55	62
Carbonate Alkalinity	<20	<2	<1	<1
Bicarbonate Alkalinity	230	240	240	240
Hydroxide Alkalinity	<20	<2	<1	<1
Total Alkalinity	230	240	240	240
Calcium	110	92	110	98
Magnesium	25	23	24	21
Potassium	4.9	4.4	4.5	3.9
Sodium	29	28	28	25
TDS	500	510	500	510
Turbidity	5.0	<1.0	23	8.2
Nitrate	74	56	69	76
Nitrite	ND	<1.0	<0.1	<0.2
Ammonia Nitrogen	0.03	<1.0	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 13 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-9
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date			
	09/08/93	11/29/93	02/16/94	05/17/94
Chloride	26	21	31	22
Sulfate	1,000	59	58	66
Carbonate Alkalinity	<20	<2	<1	<1
Bicarbonate Alkalinity	180	190	180	190
Hydroxide Alkalinity	<20	<2	<1	<1
Total Alkalinity	180	190	180	190
Calcium	86	64	82	85
Magnesium	20	17	18	18
Potassium	4.4	3.9	3.8	4.1
Sodium	29	25	26	26
TDS	3,400	420	410	360
Turbidity	30	<1.0	1.9	2.9
Nitrate	45	30	41	32
Nitrite	ND	<1.0	<0.1	<0.2
Ammonia Nitrogen	<0.02	<1.0	0.11	<0.1

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 14 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR CW-10
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date			
	09/09/93	11/29/93	02/16/94	5/18/94
Chloride	21	20	22	20
Sulfate	63	58	64	64
Carbonate Alkalinity	<20	<2	<1	<1
Bicarbonate Alkalinity	190	200	260	190
Hydronide Alkalinity	<20	<2	<1	<1
Total Alkalinity	190	200	260	190
Calcium	85	68	110	77
Magnesium	20	17	23	16
Potassium	4.1	3.6	4.4	3.8
Sodium	30	26	33	27
TDS	390	360	480	340
Turbidity	10	<1.0	7.2	0.52
Nitrate	38	25	33	27
Nitrite	ND	<1.0	<0.1	<0.1
Ammonia Nitrogen	0.02	<1.0	0.11	0.31

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 15 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR W-1 (all results in micrograms per liter)									
Sample ID	Sampling Method	Date	1,1,1-TCA	1,1-DCA	1,1-DCE	TCE	Toluene	PCE	
W-1 @ 290'	AL	5/14/87	<1	<1	<1	<1	<1	<1	
W-1 @ 426'	AL	5/15/87	<1	<1	<1	<1	<1	<1	
W-1 @ 290'	SP	6/8/87	<1	<1	<1	<1	5	<1	
W-1 @ 420'	SP	6/11/87	<1	<1	<1	<1	7	<1	

1,1,1-TCA:
 1,1-DCA:
 1,1-DCE:
 TCE:
 PCE:
 <1:
 AL:
 SP:
 1,1,1-Trichloroethane.
 1,1-Dichloroethane.
 1,1-Dichloroethane.
 Trichloroethane.
 Tetrachloroethane.
 Less than the detection limit of 1.
 Air Lift Pump.
 Submersible Pump.
 Toluene was detected at a concentration of 2 µg/l in the trip blank samples collected on 6/8/87.

TABLE 16 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in micrograms per liter)

Organic Constituent	Sample Date											
	08/21/91	09/17/91	01/14/92	03/15/92	05/19/92	06/11/92	01/14/93	03/02/93	06/17/93	12/07/93	02/16/94	05/16/94
1,1,1-Trichloroethane	2.4/2.3	1.6	ND	5.1	3.1	4.3	<3	<0.5	3.0	0.3	1.4	<0.2
1,1-Dichloroethane	ND/ND	ND	ND	1.3	0.75	0.51	<3	<0.5	<3	0.3	<1	<0.2
1,1-Dichloroethene	*3.7/3.5*	2.8	ND	3.1	3.3	5.5	<3	<0.5	2.9	<0.2	1.0	<0.2
1,2,3-Trichlorobenzene	ND/0.75	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1	<0.2
Carbon Tetrachloride	*1.1/0.70*	1.3	ND	ND	0.85	1.6	<3	<0.5	<3	<0.2	<1	<0.2
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	<3	1.4	<3	<0.2	<1	<0.2
Trichloroethene	*40/39*	27	3.6	130	58	100	54	25	91	4.4	62	3.5
Toluene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2
Tetrachloroethene	1.2/1.0	1.1	ND	1.7	1.4	2.1	<3	2.2	4.9	2.6	1.7	1.4
cis-1,2-Dichloroethene	ND/ND	ND	ND	3.0	1.6	1.4	<3	0.71	5.0	2.1	3.0	1.1
m,p-xylenes	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1	<0.2

ND: Not Detected.
<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and tetrahydrofuran (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 17 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2
(all results in micrograms per liter)

Organic Constituent	Sample Date													
	06/21/91	09/17/91	01/15/92	05/17/92	05/29/92	08/10/92	01/14/93	03/02/93	06/18/93	08/19/93	11/20/93	02/16/94	03/09/94	05/18/94
1,1,1-Trichloroethane	6.7	5.4/5.8	ND	2.5	12	15	0.54	<0.5	<3	<1	0.37	<20	<1	<0.2
1,1-Dichloroethane	ND	ND/ND	ND	ND	0.53	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2
1,1-Dichloroethene	7	5.3/5.5	ND	2.4	13	17	0.64	<0.5	<3	<1	<0.2	<20	<1	<0.2
Carbon Tetrachloride	1.7	1.8/1.9	ND	0.57	3.3	3.8	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2
Trichloroethene	50	42/44	1.6	31	83	150	24	19	48	48	29	890	60	9.6
Tetrachloroethene	1	1.0/1.0	ND	0.58	1.9	2.3	0.71	0.62	<3	<1	1.7	<20	1.4	0.99
Toluene	0.84	0.53/ND	ND	ND	ND	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1	<0.2
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<3	<1	0.4	<20	<1	0.49

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihaloethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 18 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in micrograms per liter)

Organic Constituent	Sample Date											
	08/22/91	09/17/91	01/16/92	03/16/92	05/19/92	06/12/92	01/14/93	03/02/93	06/18/93	08/19/93	11/30/93	02/16/94
1,1,1-Trichloroethane	7.3	7.9	ND/ND	22/20	7.5/7.0	13	<5	<5	<50	<1	0.6	0.31
1,1-Dichloroethane	ND	0.55	ND/ND	6.6/ND	1.5/1.4	ND	<5	<5	<50	<1	<0.2	<0.2
1,1-Dichloroethene	10	8.5	ND/ND	11/ND	6.6/5.5	13	<5	<5	<50	<1	0.4	0.31
Carbon Tetrachloride	ND	2	ND/ND	ND/ND	1.1/ND	ND	<5	<5	<50	<1	<0.2	<0.2
Trichloroethene	110	100	4.7/6.4	620/820	100/160	240	68	47	2200	49	15	15
Tetrachloroethene	ND	2.7	ND/ND	ND/ND	2.0/1.8	3.3	<5	<5	<50	2.2	1.6	<4
cis-1,2-Dichloroethene	ND	0.8	ND/ND	13/ND	2.1/1.9	2.8	<5	<5	<50	<1	<0.2	0.26
Toluene	ND	ND	ND/ND	ND/ND	ND/ND	ND	<5	<5	<50	<1	0.2	<4

ND: Not Detected.

<1: Less than the detection limit of 1.

Common laboratory solvents (e.g., methylene chloride) and carbon tetrachloride (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 19 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-4
(all results in micrograms per liter)

Organic Constituent	Sample Date											
	08/19/91	01/15/92	03/18/92	05/19/92	08/10/92	01/16/93	03/03/93	06/16/93	08/19/93	11/30/93	02/18/94	05/17/94
1,1,1-Trichloroethane	ND	ND/ND	0.59	ND	ND/ND	<0.5	<0.5	<0.5	<0.2	<0.2	5.0	<0.2
1,2,3-Trichlorobenzene	ND	ND/ND	ND	ND	ND/ND	0.59	<0.5	<0.5	<0.2	<0.2	<1	<0.2
1,1-Dichloroethene	ND	ND/ND	1.2	1.0	0.60/0.66	<0.5	<0.5	1.7	<0.2	<0.2	6.7	<0.2
Carbon Tetrachloride	ND	ND/ND	0.73	0.75	0.68/0.63	<0.5	<0.5	<0.5	<0.2	<0.2	1.2	<0.2
Trichloroethene	1.5	ND/ND	10	4.7	3.9/3.8	1.4	2.5	20	1.0	0.6	65	0.63
Tetrachloroethene	ND	ND/ND	ND	ND	ND/ND	0.52	<0.5	0.6	0.32	0.3	1.2	0.22
m- & p-Xylenes	ND	ND/ND	0.69	ND	ND/ND	0.59	<0.5	<0.5	<0.2	<0.2	<1	<0.2
Naphthalene	ND	ND/ND	ND	ND	ND/ND	0.59	<0.5	<0.5	<0.2	<0.2	<5	<1

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihaloethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

004199

TABLE 20 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-5
(all results in micrograms per liter)

Organic Constituent	Sample Date													
	06/20/91	09/17/91	01/15/92	03/18/92	05/20/92	08/12/92	01/16/93	03/02/93	06/18/93	08/18/93	11/04/93	02/18/94	05/17/94	
1,1,1-Trichloroethene	ND	ND	ND	ND	ND	ND	0.51	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.2	0.25	<0.2	<0.2	
Freon 113	ND	ND	ND	ND	ND	ND	<0.5	0.66	<0.5	<0.2	<0.2	<0.2	<0.2	
Trichloroethene	ND	ND	ND	ND	0.69	0.51	0.59	0.55	0.51	0.4	0.78	0.97	0.77	
Tetrachloroethene	ND	ND	ND	ND	0.52	ND	0.85	0.9	0.69	0.77	0.97	0.66	1.0	
m- & p-xylene	ND	ND	ND	ND	ND	ND	0.63	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	
Naphthalene	ND	ND	ND	ND	ND	ND	0.53	<0.5	<0.5	<0.2	0.45	<1	<1	
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.2	0.63	<0.2	0.94	

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 21 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-4
(all results in micrograms per liter)

Organic Constituent	Sample Date												
	08/22/91	09/19/91	01/16/92	03/17/92	05/20/92	06/11/92	01/14/93	03/03/93	06/17/93	08/18/93	11/20/93	02/16/94	05/16/94
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.3	<0.2	<0.2
Naphthalene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.4	<1	<1
Trichloroethene	0.63	0.77	1.2	1.8	0.85	0.52	1.7	1.7	1.2	0.84	1.2	1.2	0.95
Tetrachloroethene	ND	ND	1.1	0.98	ND	ND	0.95	1.6	1.1	0.87	1.2	0.94	0.81
cis-1,2-dichloroethene	ND	ND	0.65	ND	ND	ND	<0.5	<0.5	0.50	0.36	0.4	0.56	0.33
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.3	<0.2	<0.2

ND: Not Detected.

<1: Less than the detection limit of 1.

Common laboratory solvents (e.g., methylene chloride and carbon tetrachloride) that were reported at 10 µg/l or less are not included in this table.

TABLE 22 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7
(all results in micrograms per liter)

Organic Constituent	Sample Date				
	09/08/93	11/29/93	02/16/94	03/08/94	5/18/94
1,1,1-Trichloroethane	0.19	<0.5	<40	<0.4	<0.2
1,1,2,2-Tetrachloroethane	<0.2	<0.5	<40	0.46	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.5	<40	0.50	<0.2
Trichloroethene	33	7.7	3100	35	0.36
Tetrachloroethene	0.21	<0.5	<40	0.72	<0.2
cis-1,2-dichloroethene	0.58	<0.5	56	1.0	<0.2
Toluene	<0.2	<0.5	<40	<0.4	0.15

ND: Not Detected
<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 23 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-8 (all results in micrograms per liter)				
Organic Constituent	Sample Date			
	09/09/93	11/29/93	02/16/94	05/17/94
1,1,1-Trichloroethane	<0.2	<0.5	0.25	<0.2
1,2,3-Trichlorobenzene	<0.2	<0.5	0.29	<0.2
1,2,4-Trichlorobenzene	<0.2	<0.5	0.23	<0.2
1,2-Dichloroethane	0.17	<0.5	<0.2	<0.2
Carbon Tetrachloride	<0.2	<0.5	0.92	<0.2
Trichloroethene	0.80	0.9	30	1.2
Tetrachloroethene	0.30	0.6	0.77	0.79
cis-1,2-dichloroethene	0.22	0.6	0.5	0.55

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylane chloride) and trihalobenzenes (e.g., chlorobenzene) that were reported at 10 µg/l or less are not included in this table.

TABLE 24 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-9
(all results in micrograms per liter)

Organic Constituent	Sample Date			
	09/08/93	11/29/93	02/16/94	5/17/94
1,1,1-Trichloroethane	<0.2	<0.5	0.42	<0.2
1,1-Dichloroethene	<0.2	<0.5	0.4	<0.2
Dichlorodifluoromethane	1.0	<0.5	<0.2	<0.2
Trichloroethene	2.4	3.1	16	3.4
Tetrachloroethene	0.28	0.5	1.1	<0.2
cis-1,2-dichloroethene	0.31	<0.5	<0.2	<0.2
1,3-Dichloropropane	<0.2	<0.5	<0.2	0.48

ND: Not Detected

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trichloroethane (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

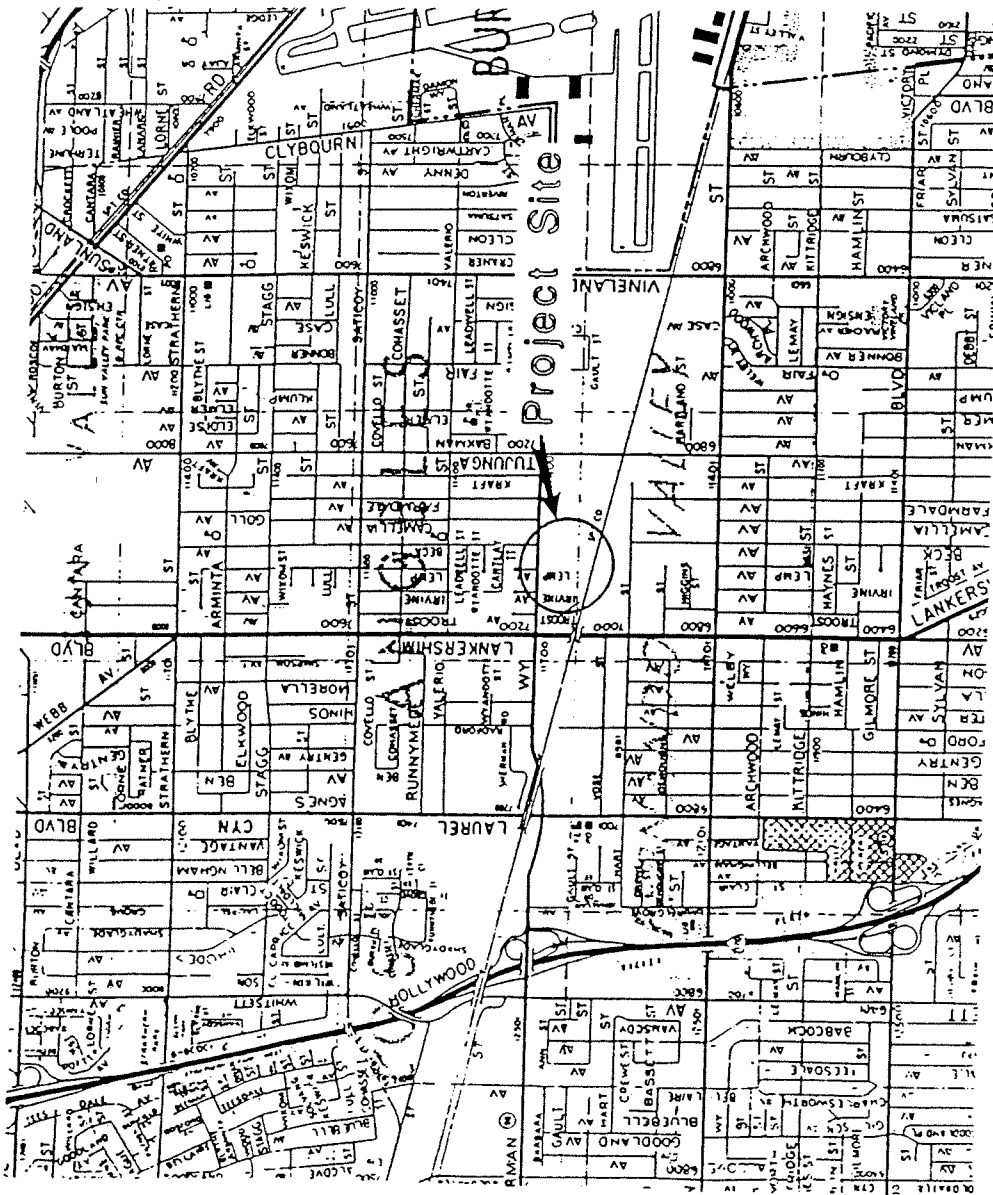
TABLE 25 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-10
(all results in micrograms per liter)

Organic Constituent	Sample Date				
	09/09/93	11/29/93	02/16/94	03/07/94	5/18/94
1,1-Dichloroethane	0.10	<0.5	<40	<2	<0.2
Dichlorodifluoromethane	4.2	<0.5	<40	<2	<0.2
1,1,1-Trichloroethane	0.14	<0.5	<40	<2	<0.2
Trichloroethene	50	15	2300	210	12
Tetrachloroethene	1.5	1.2	<40	<2	1.0
cis-1,2-dichloroethene	1.3	<0.5	52	4.4	0.25

ND: Not Detected.
<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

FIGURES



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North Hollywood Facility

VICINITY MAP

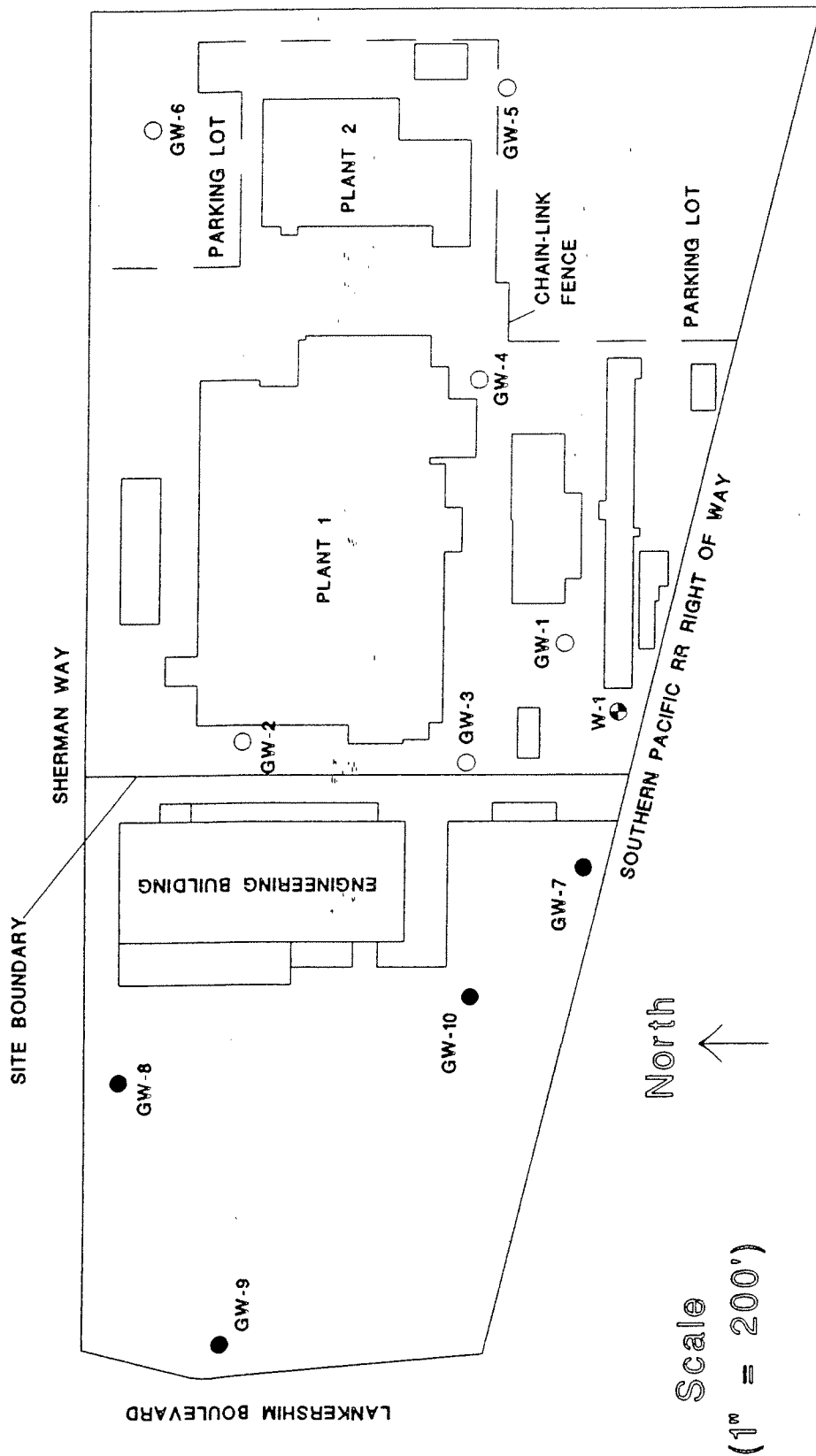
FIGURE 1

North
↑

Scale
(1" = 2800')

Base Map: The Thomas Guide, Los Angeles & Orange Counties, 1987, Page 16.

SEACOR



Legend:

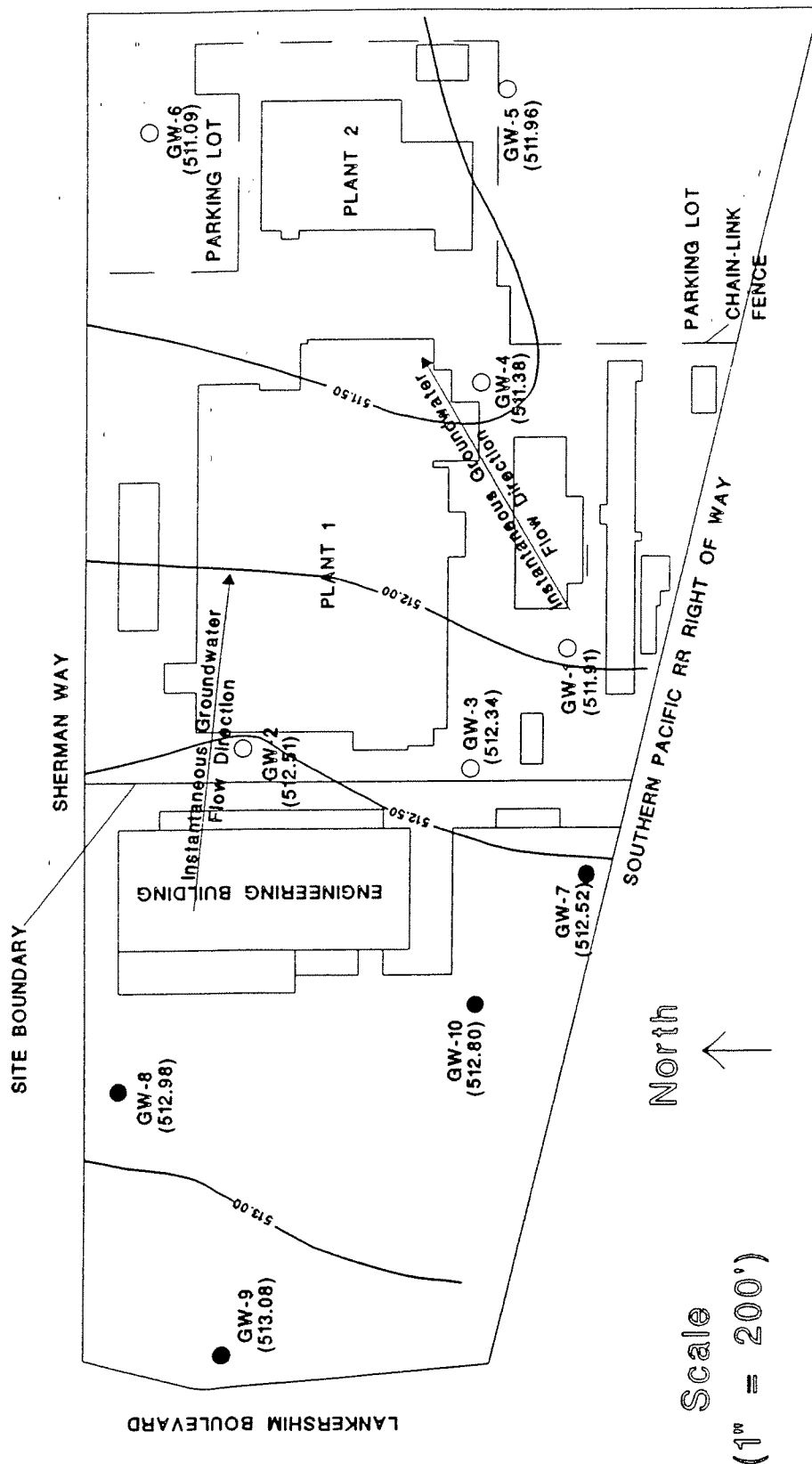
- Denotes approximate location of on-site monitoring well.
GW-6
- Denotes approximate location of off-site monitoring well.
GW-10
- ⊕ Denotes approximate location of abandoned monitoring well.
W-1

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AEROSPACE COMPANY
North Hollywood Facility

SITE MAP
FIGURE 2

File Name: AS7-A57SM22

SEACOR



Legend:

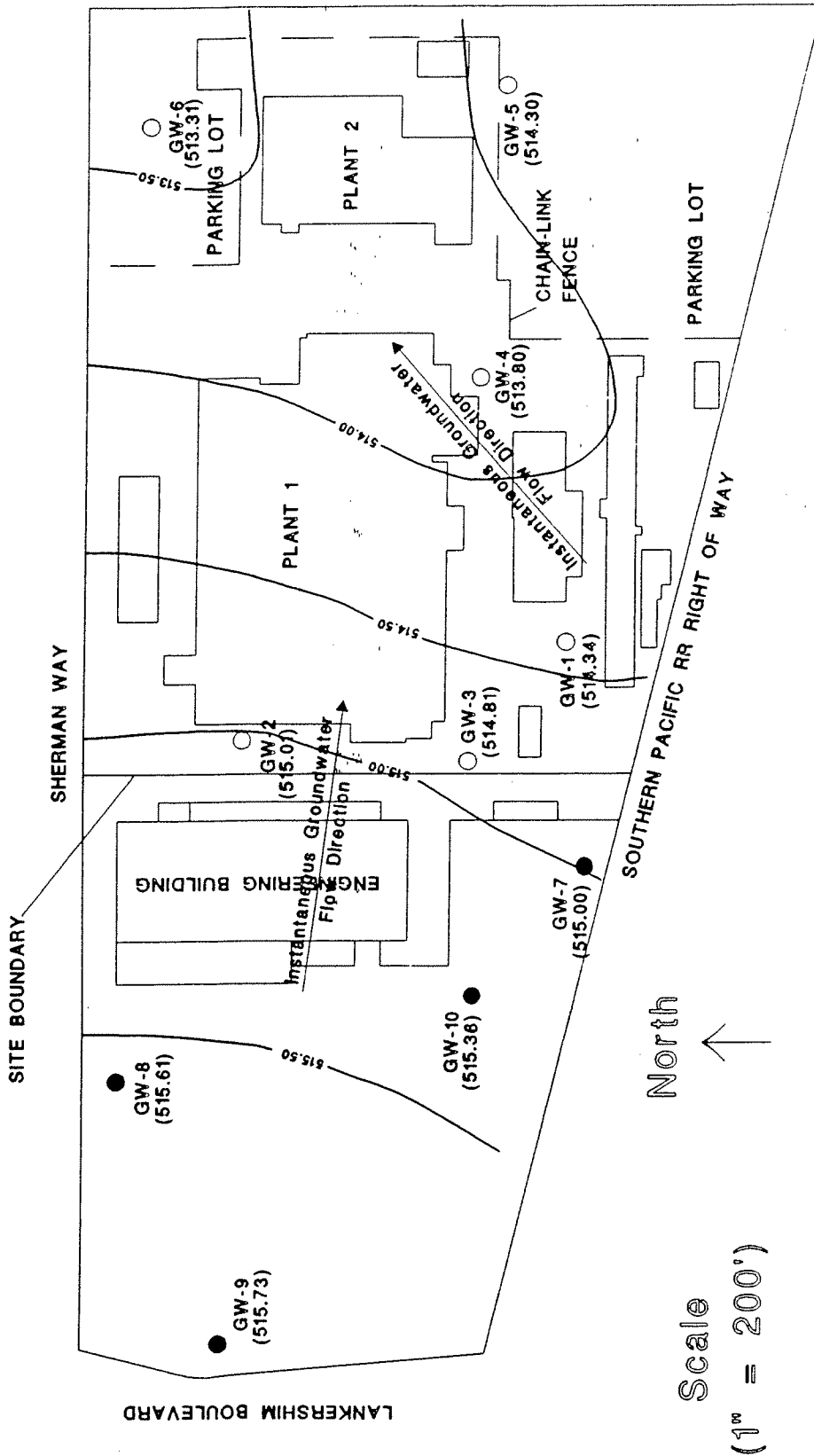
- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- 513.08 Denotes groundwater surface elevation in feet above mean sea level.
- 513.00 — Denotes groundwater contour line.

GROUNDWATER
CONTOUR MAP
(04/15/94)
FIGURE 3

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File Name: AS7-A57GC494

SEACOR



Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- 515.73 Denotes groundwater surface elevation in feet above mean sea level.
- 515.50 — Denotes groundwater contour line.

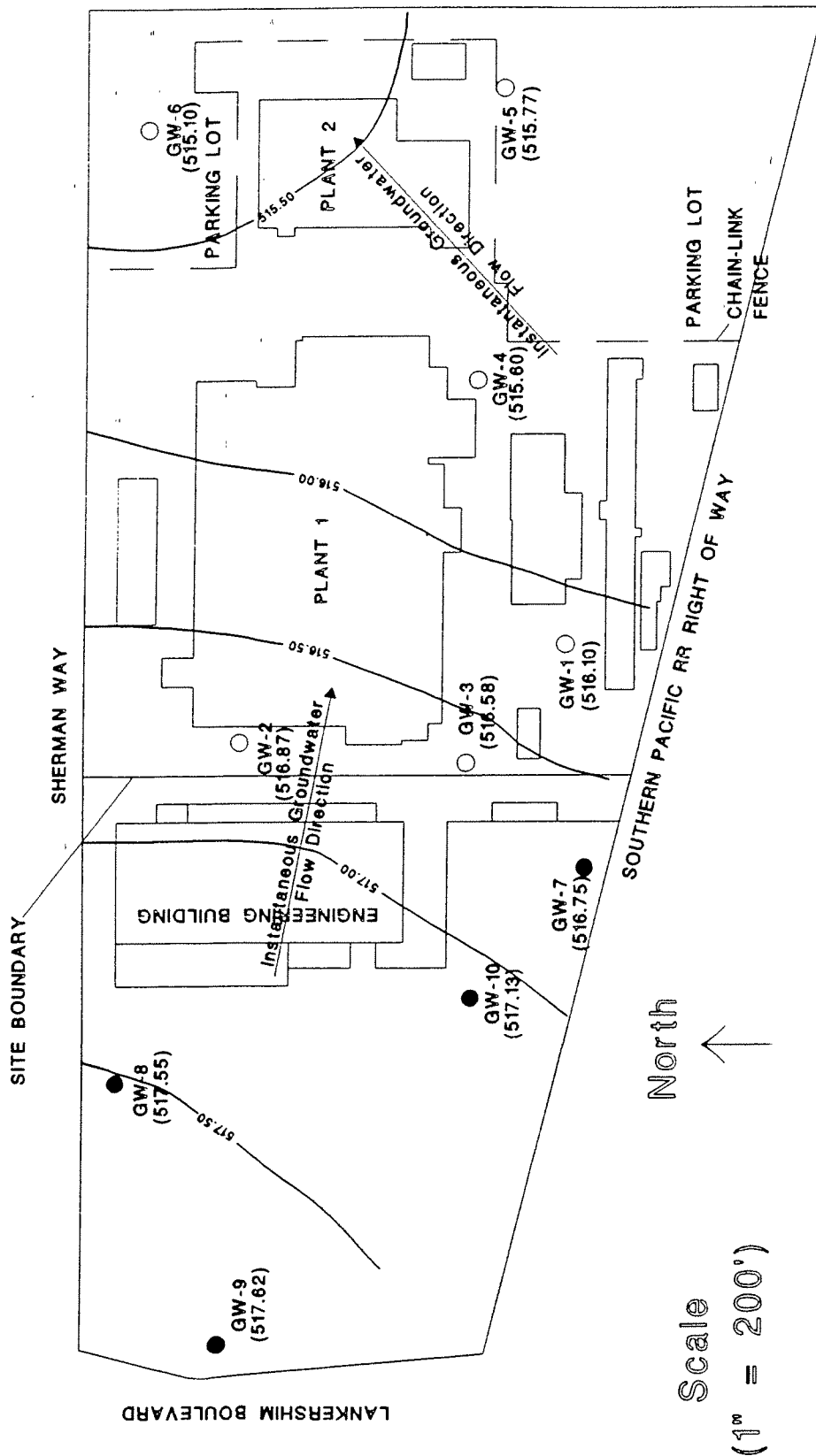
GROUNDWATER CONTOUR MAP

(05/16/94)

FIGURE 4

File Name: AS7-A57GC594

SEACOR



Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- (517.62) Denotes groundwater surface elevation in feet above mean sea level.
- 517.50 — Denotes groundwater contour line.

GROUNDWATER CONTOUR MAP

(06/16/94)

FIGURE 5

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North Hollywood Facility

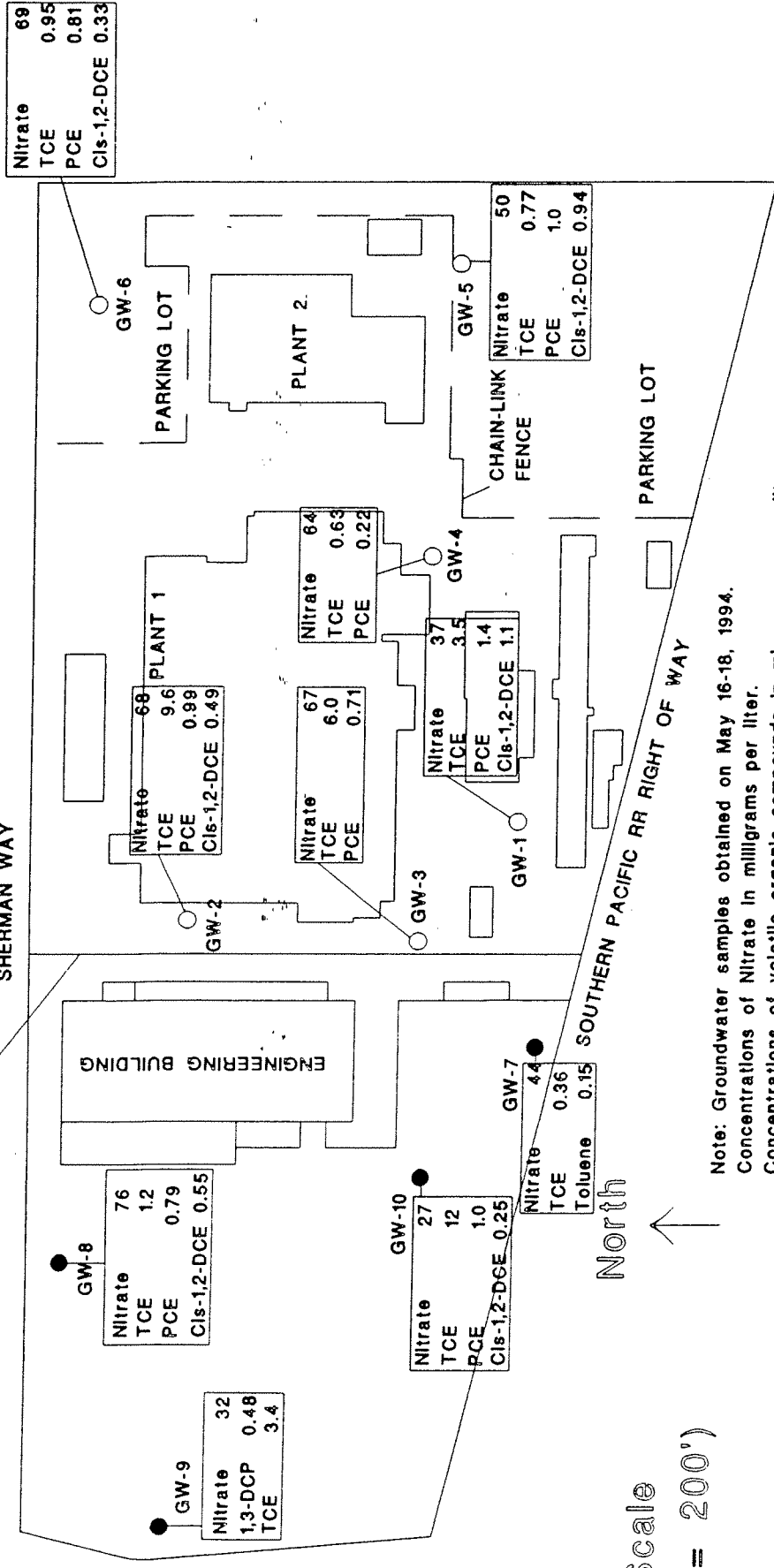
File Name: AS7-A57GC694

SEACOR

SITE BOUNDARY

SHERMAN WAY

LANKERSHIM BOULEVARD



Scale

(1" = 200')

North

Note: Groundwater samples obtained on May 16-18, 1994.
Concentrations of Nitrate in milligrams per liter.
Concentrations of volatile organic compounds in micrograms per liter.

Legend:

- TCE
- PCE
- 1,3-DCP
- Cis-1,2-DCE
- Trichloroethene
- Tetrachloroethene
- 1,3-Dichloropropane
- Cis-1,2-Dichloroethene

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NITRATE AND VOC
CONCENTRATION MAP

FIGURE 6

File Name: AS7-A57694VM

SEACOR

Figure 7
Historic Groundwater Elevations in GW-1

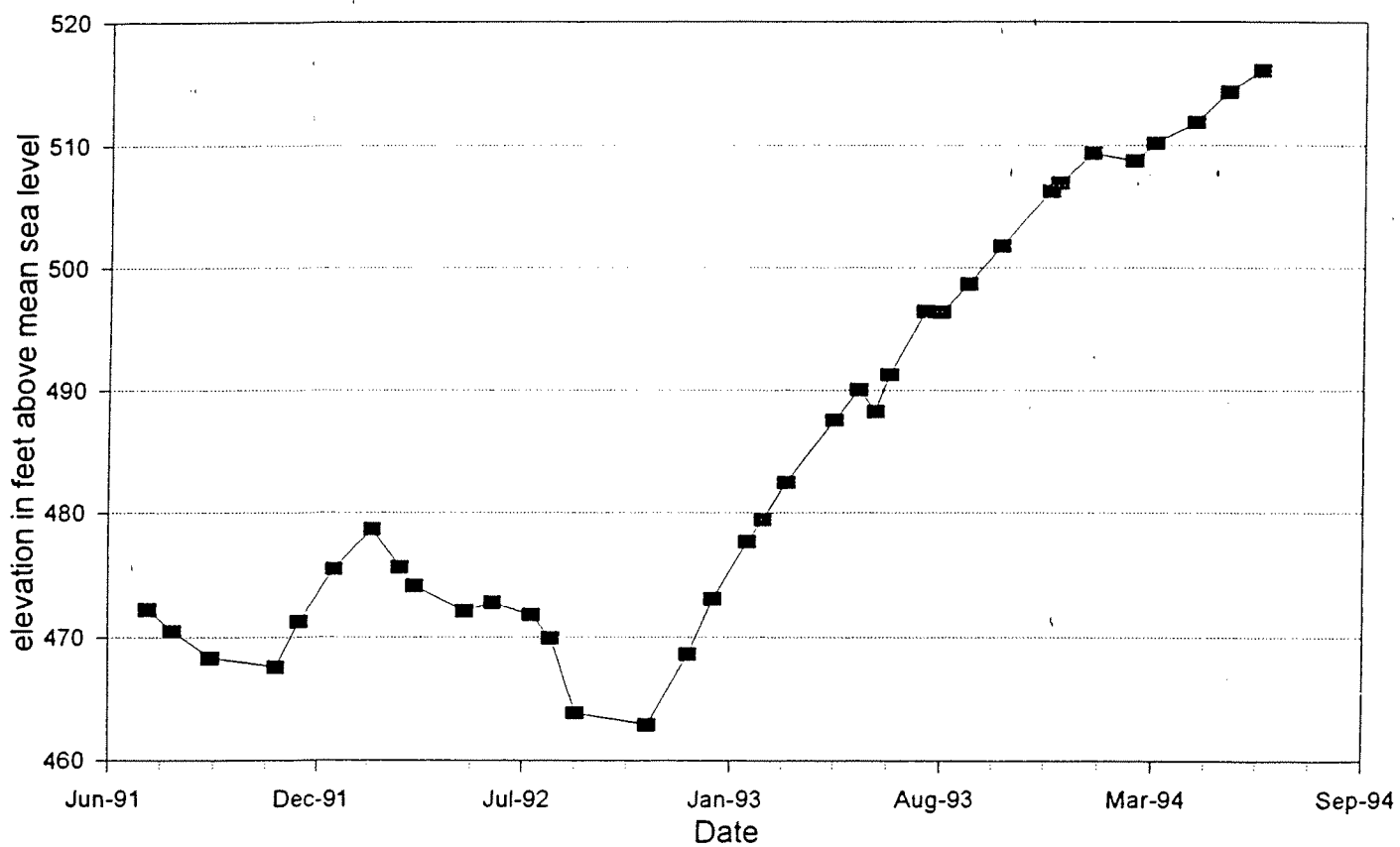


Figure 8

Historic Nitrate Concentrations in GW-1

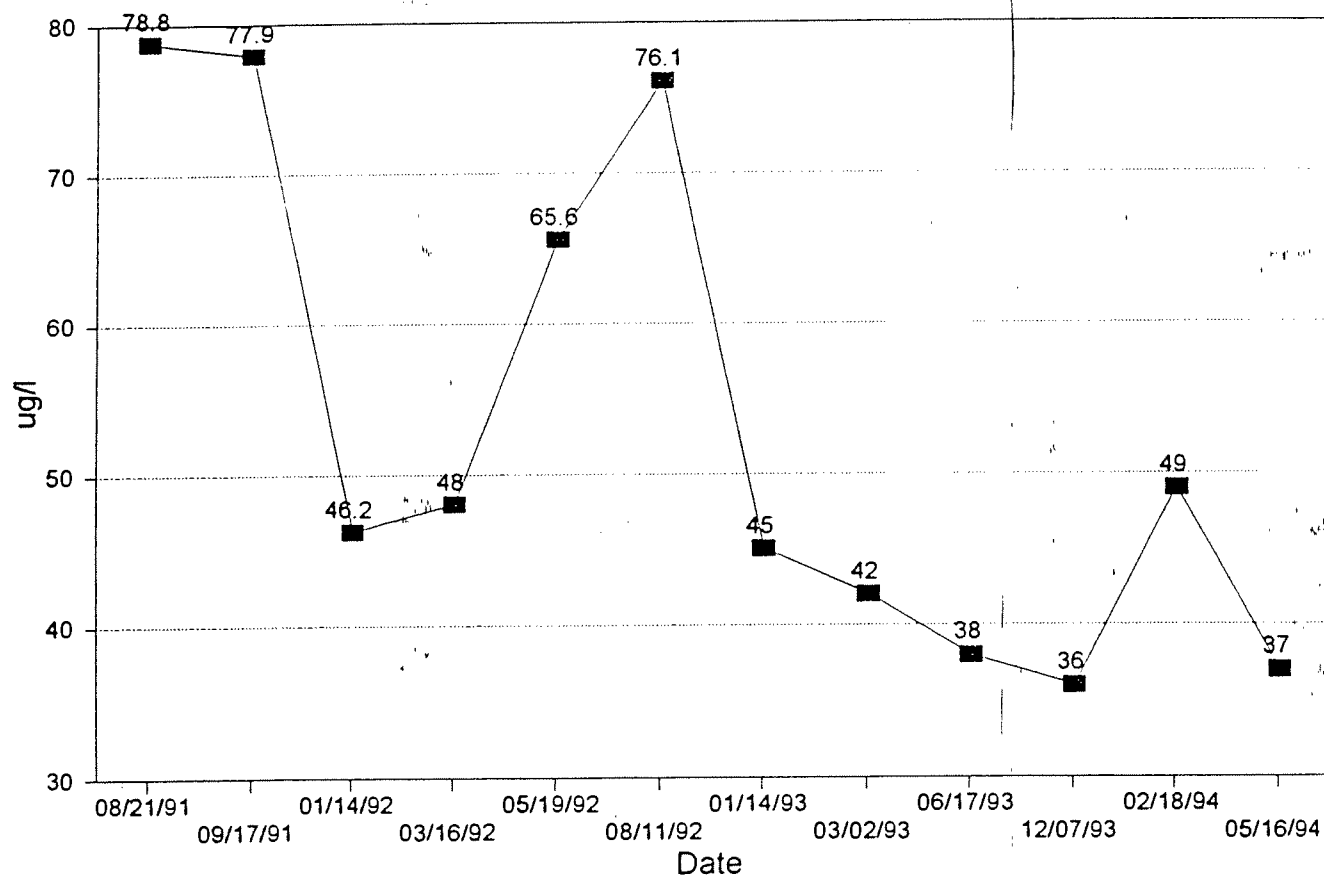


Figure 9
Historic 1,1,1-TCA Concentrations in GW-1

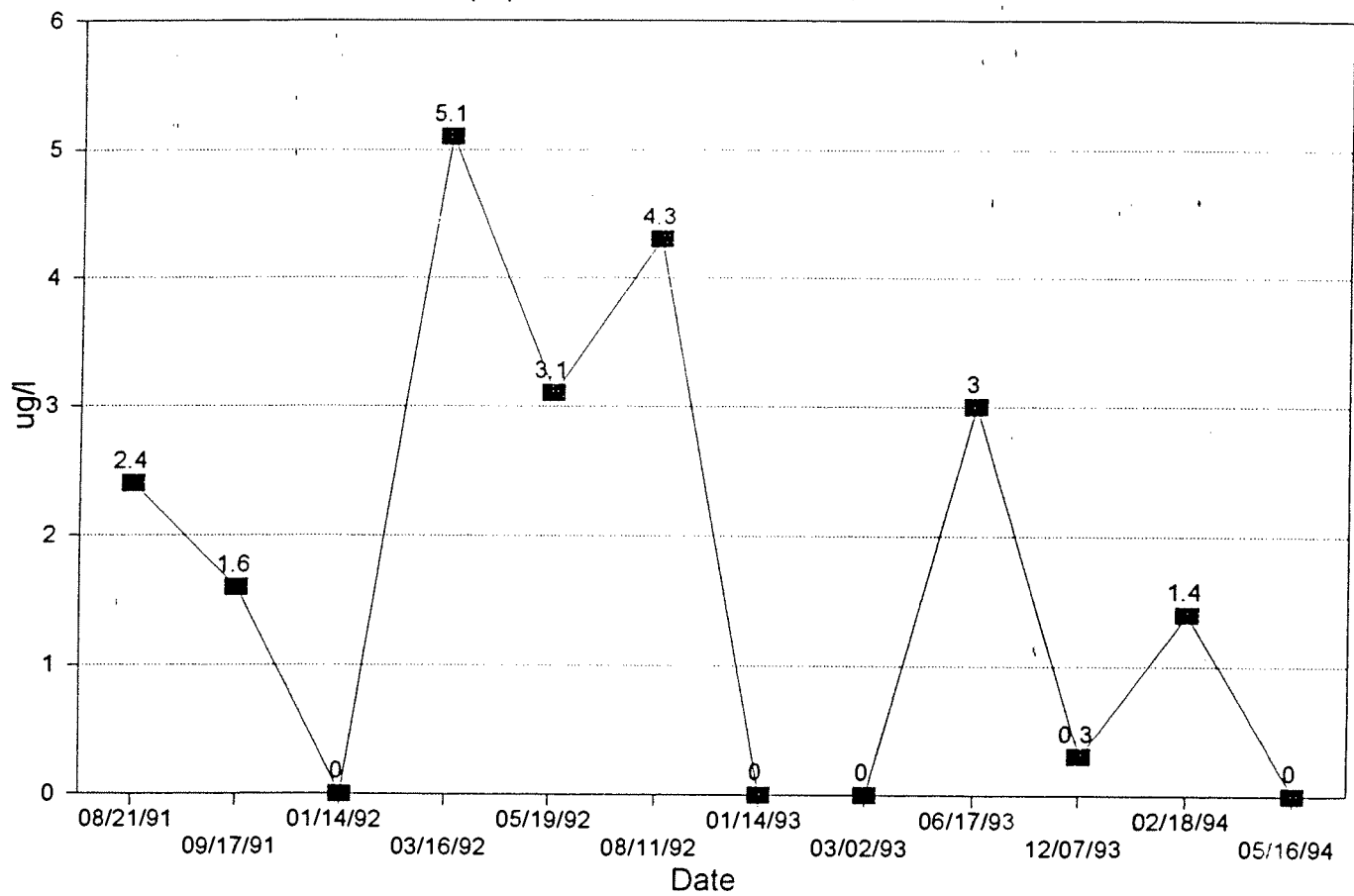


Figure 10
Historic 1,1-DCA Concentrations in GW-1

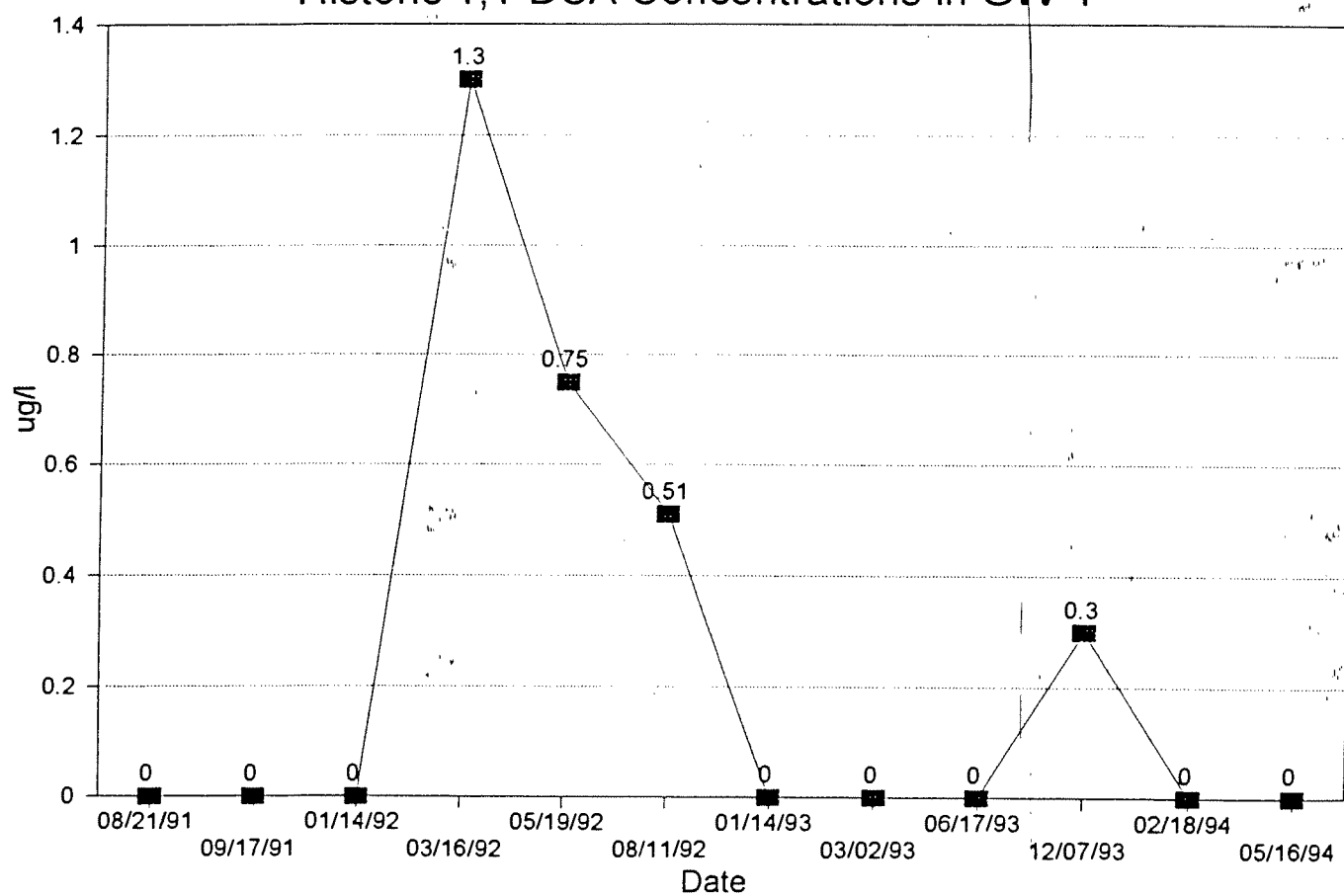


Figure 11

Historic 1,1-DCE Concentrations in GW-1

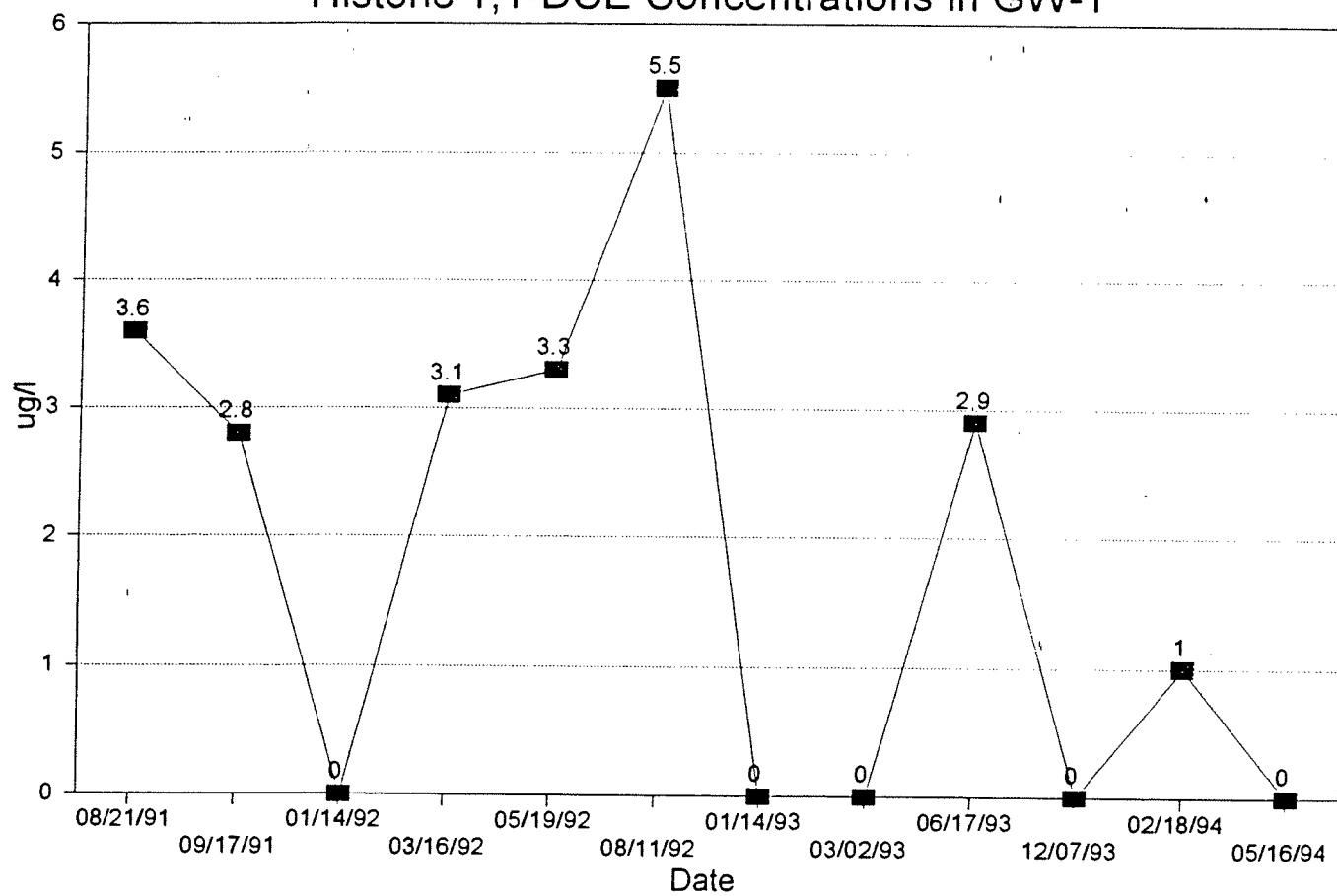


Figure 12

Historic CCL4 Concentrations in GW-1

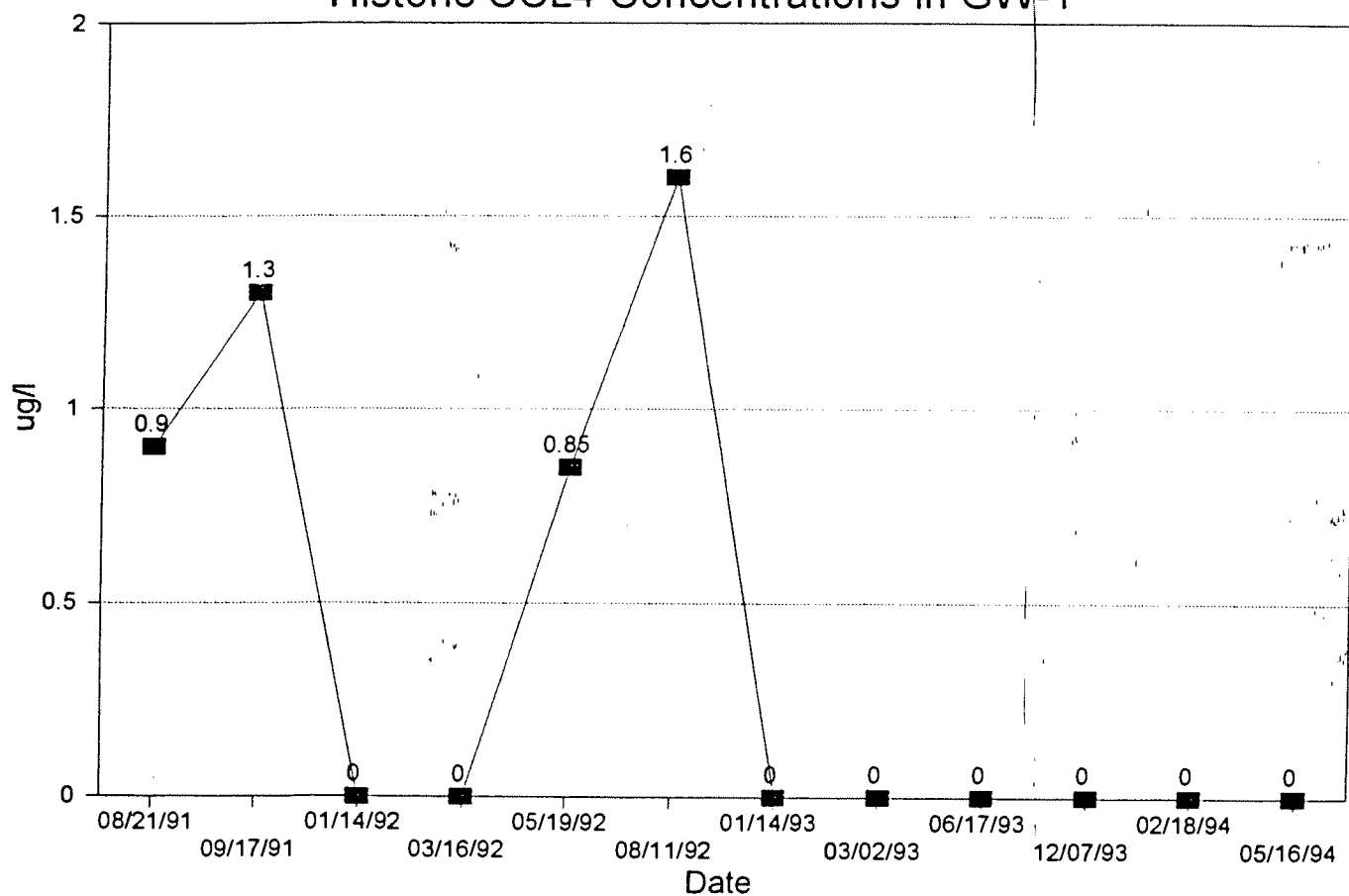


Figure 13
Historic TCE Concentrations in GW-1

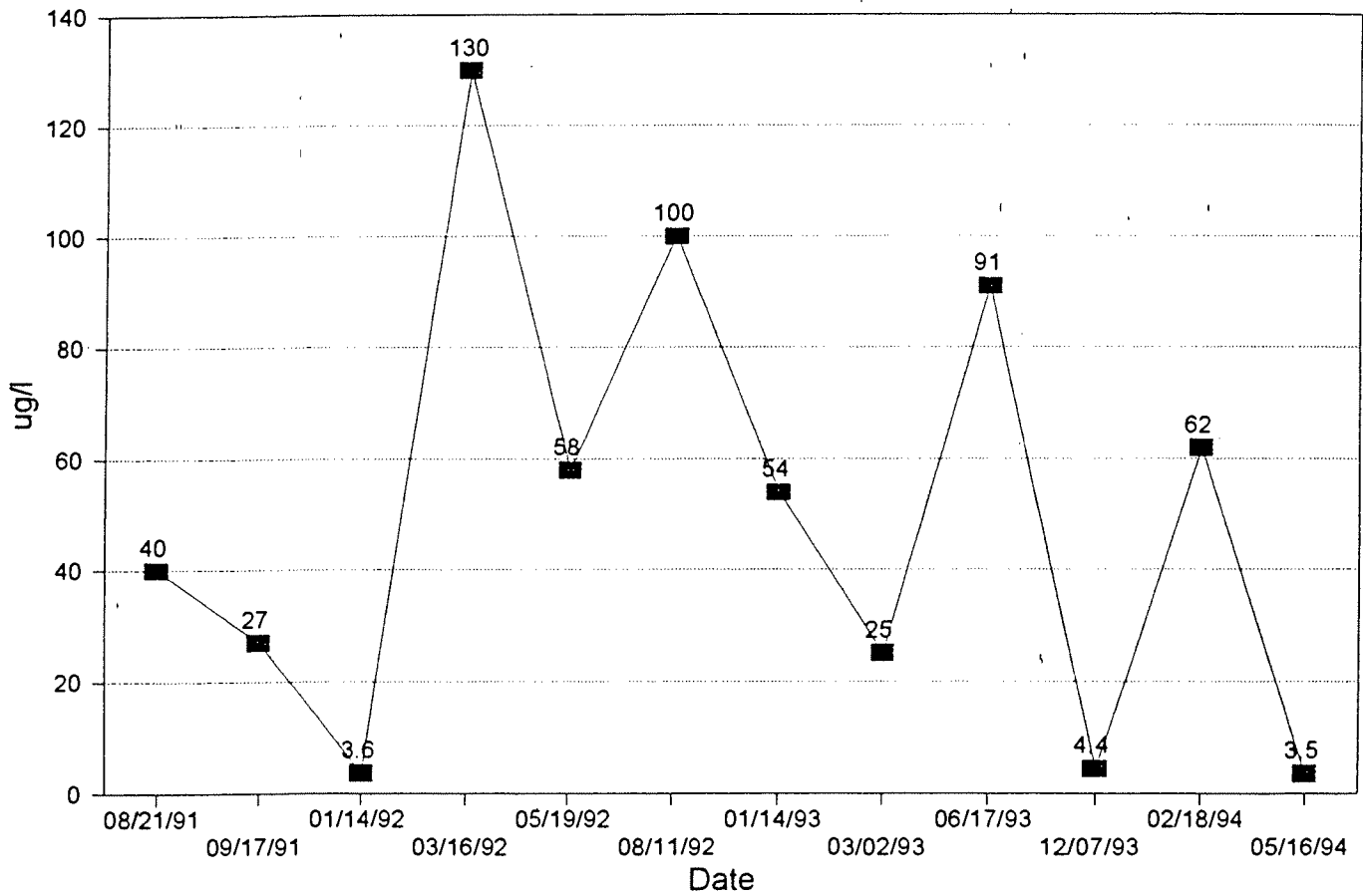


Figure 14
Historic PCE Concentrations in GW-1

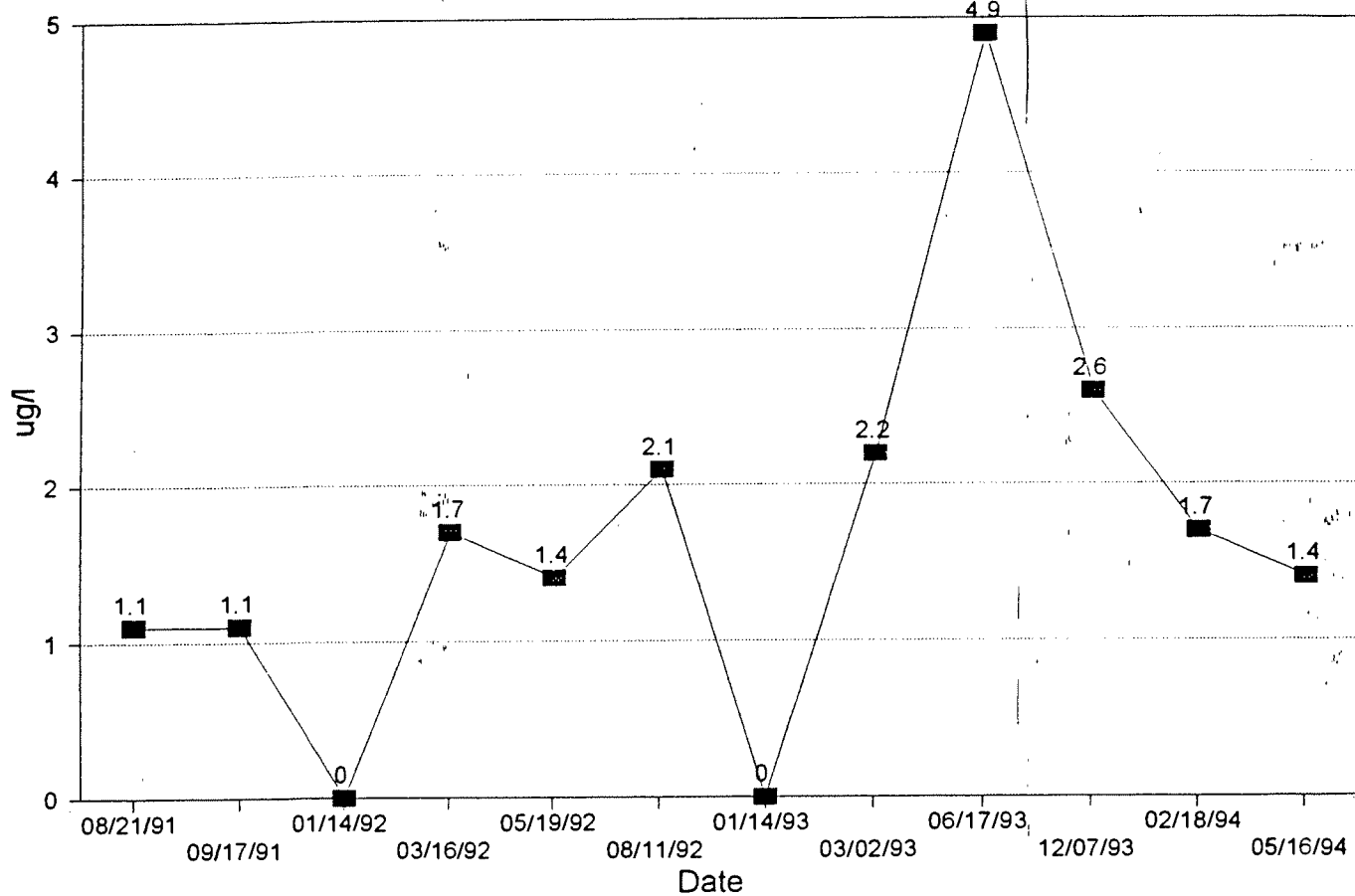


Figure 15
Historic CIS-1,2-DCE Concentrations in GW-1

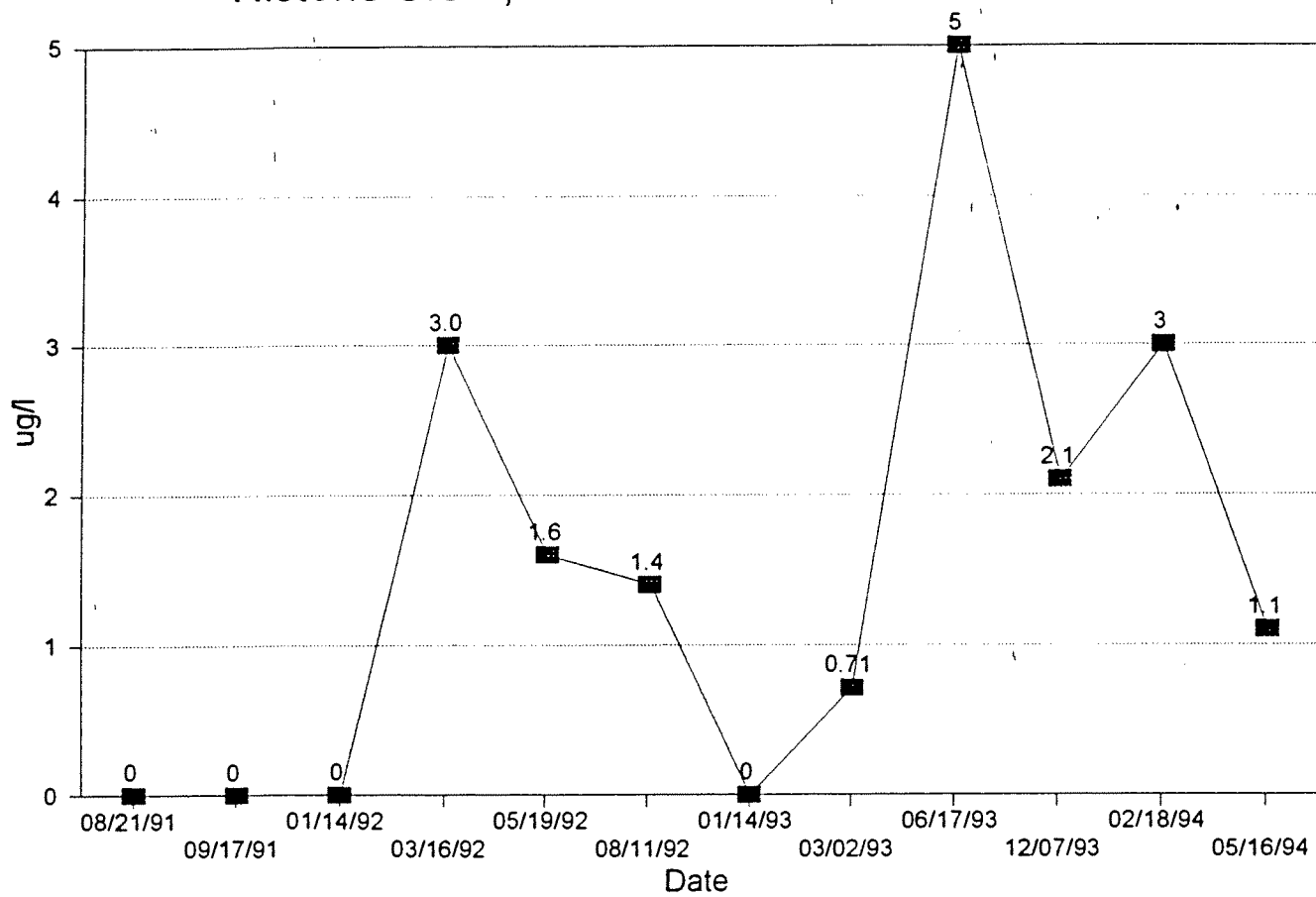


Figure 16
Historic Groundwater Elevations in GW-2

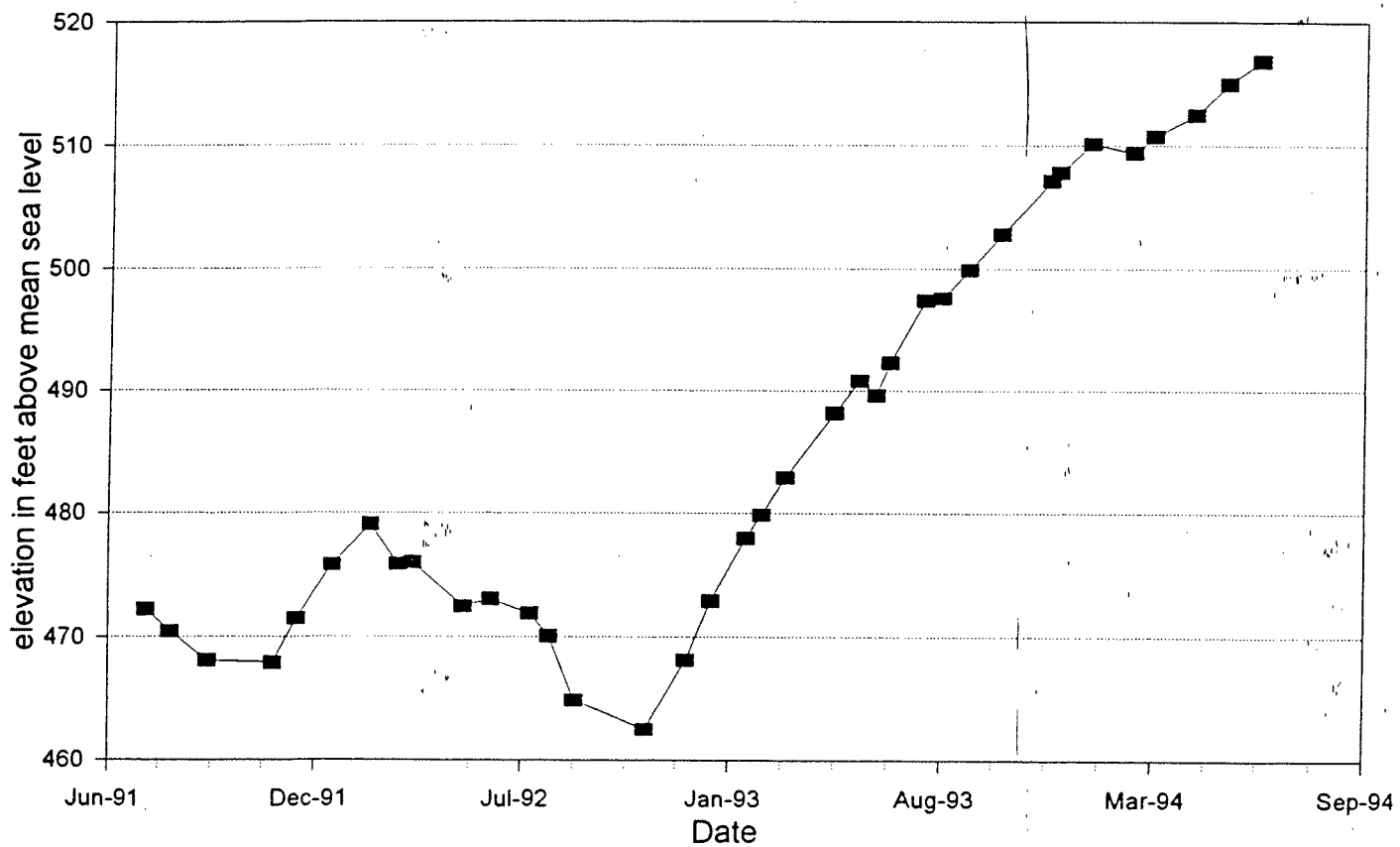


Figure 17
Historic Nitrate Concentrations in GW-2

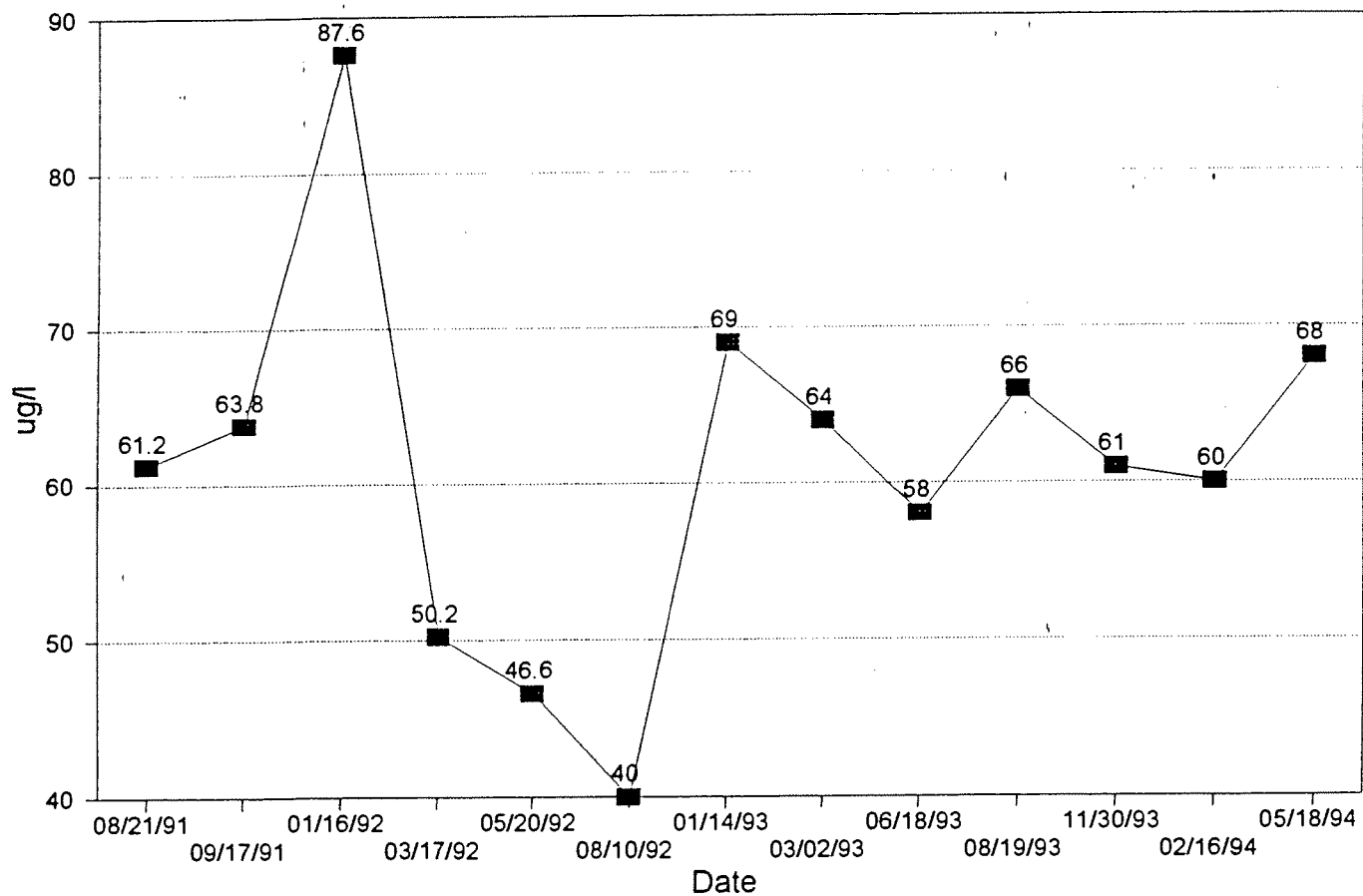


Figure 18
Historic 1,1,1-TCA Concentrations in GW-2

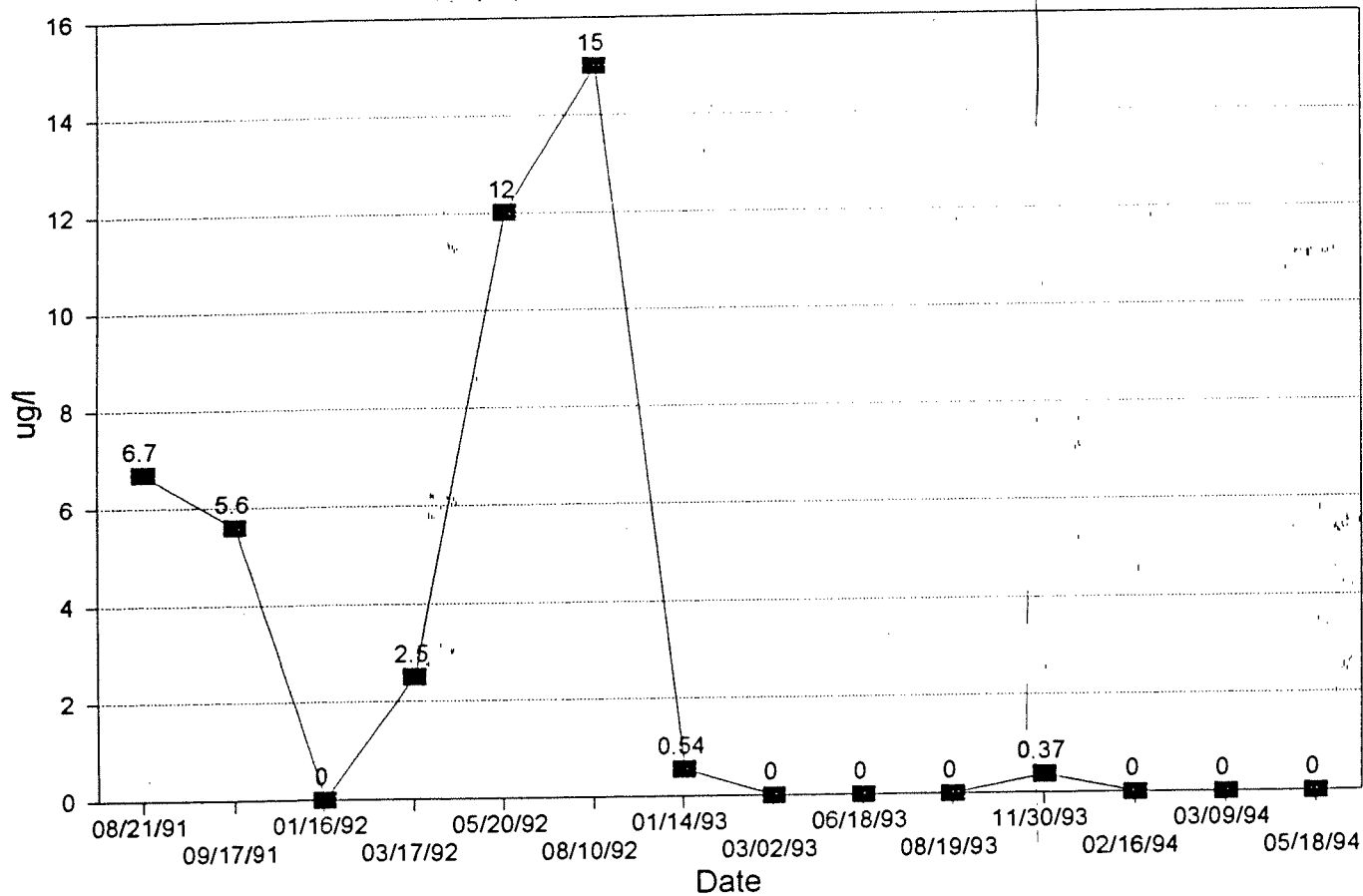


Figure 19
Historic 1,1-DCE Concentrations in GW-2

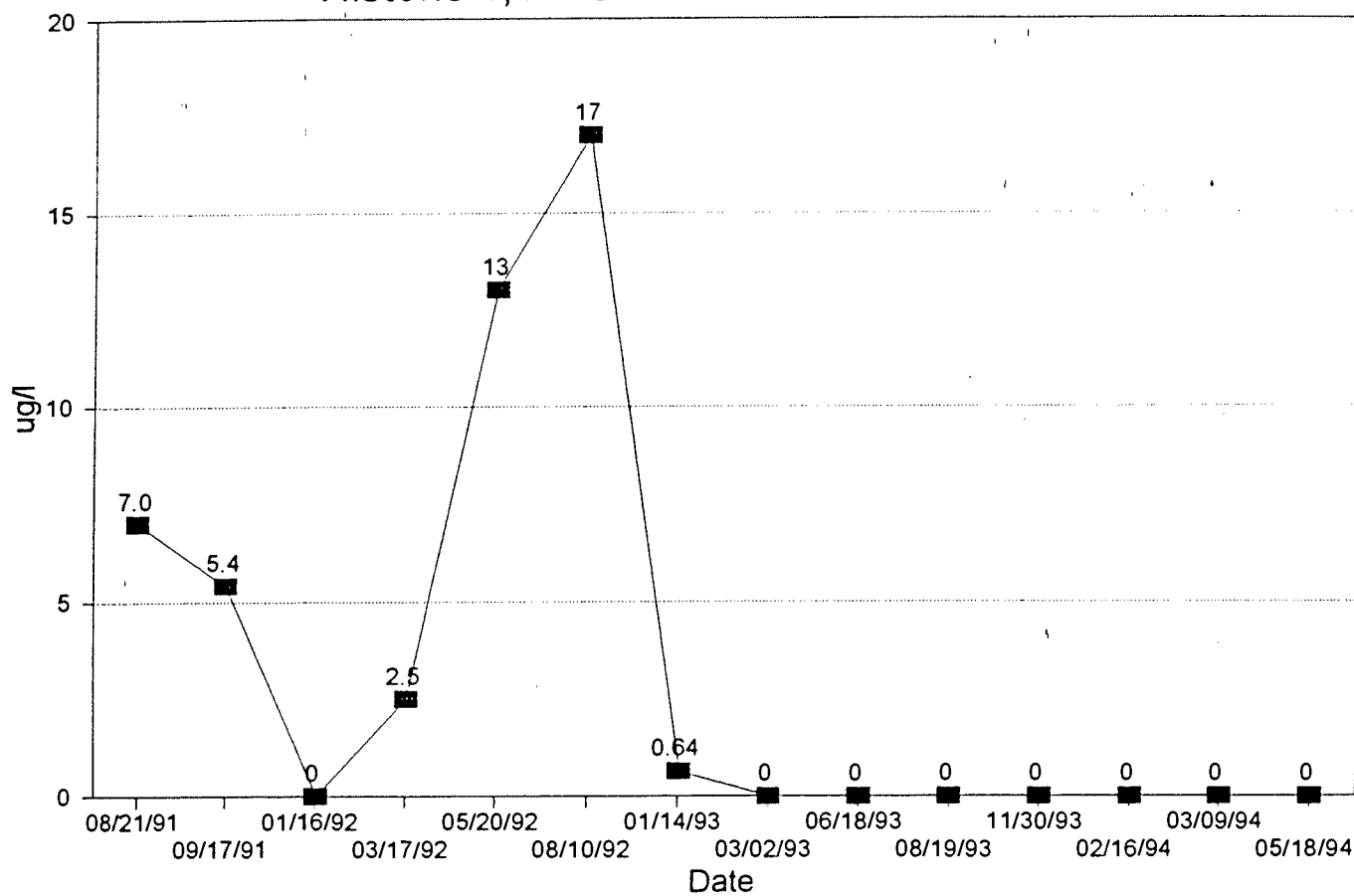


Figure 20
Historic CCL4 Concentrations in GW-2

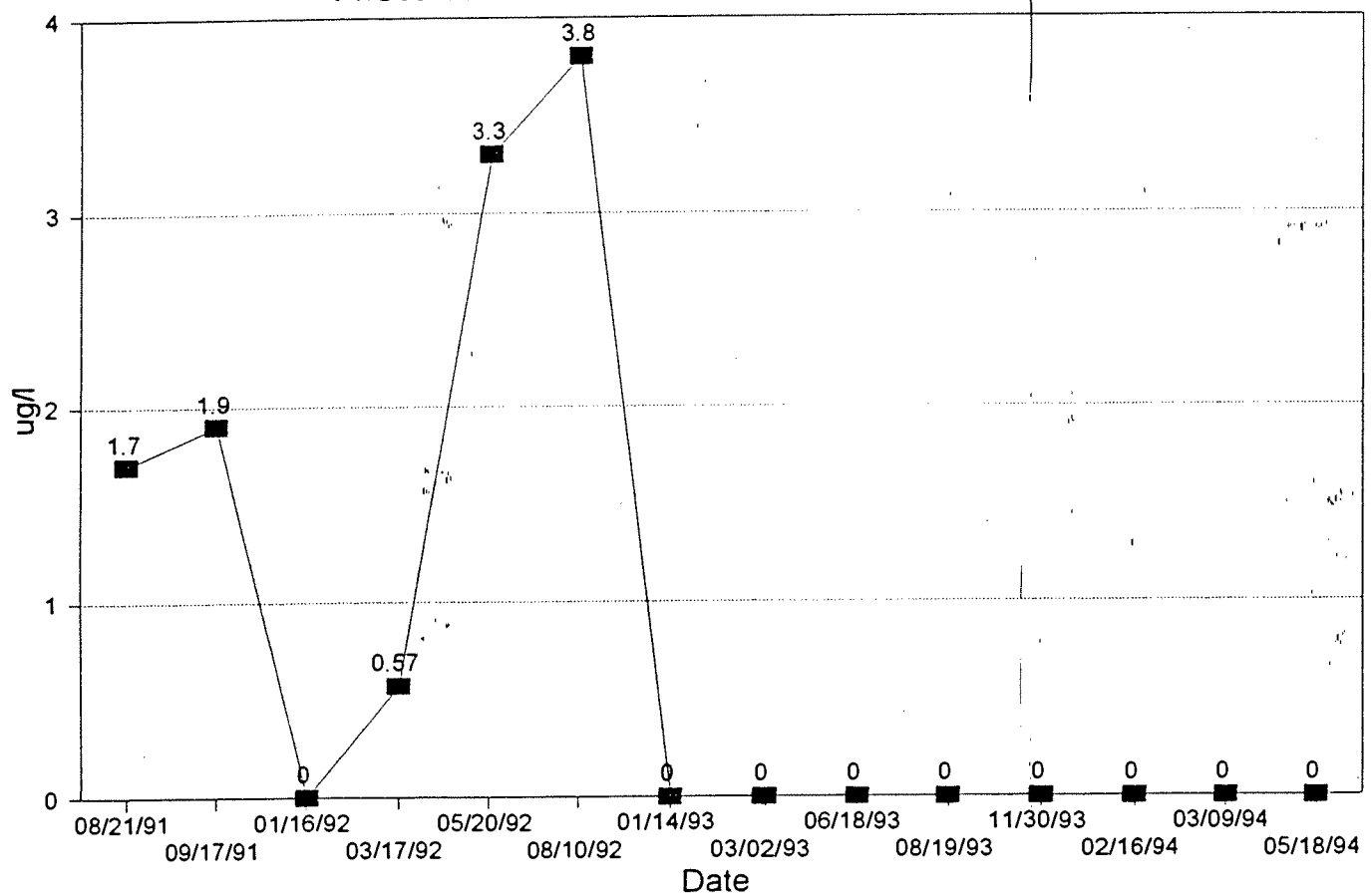


Figure 21
Historic TCE Concentrations in GW-2

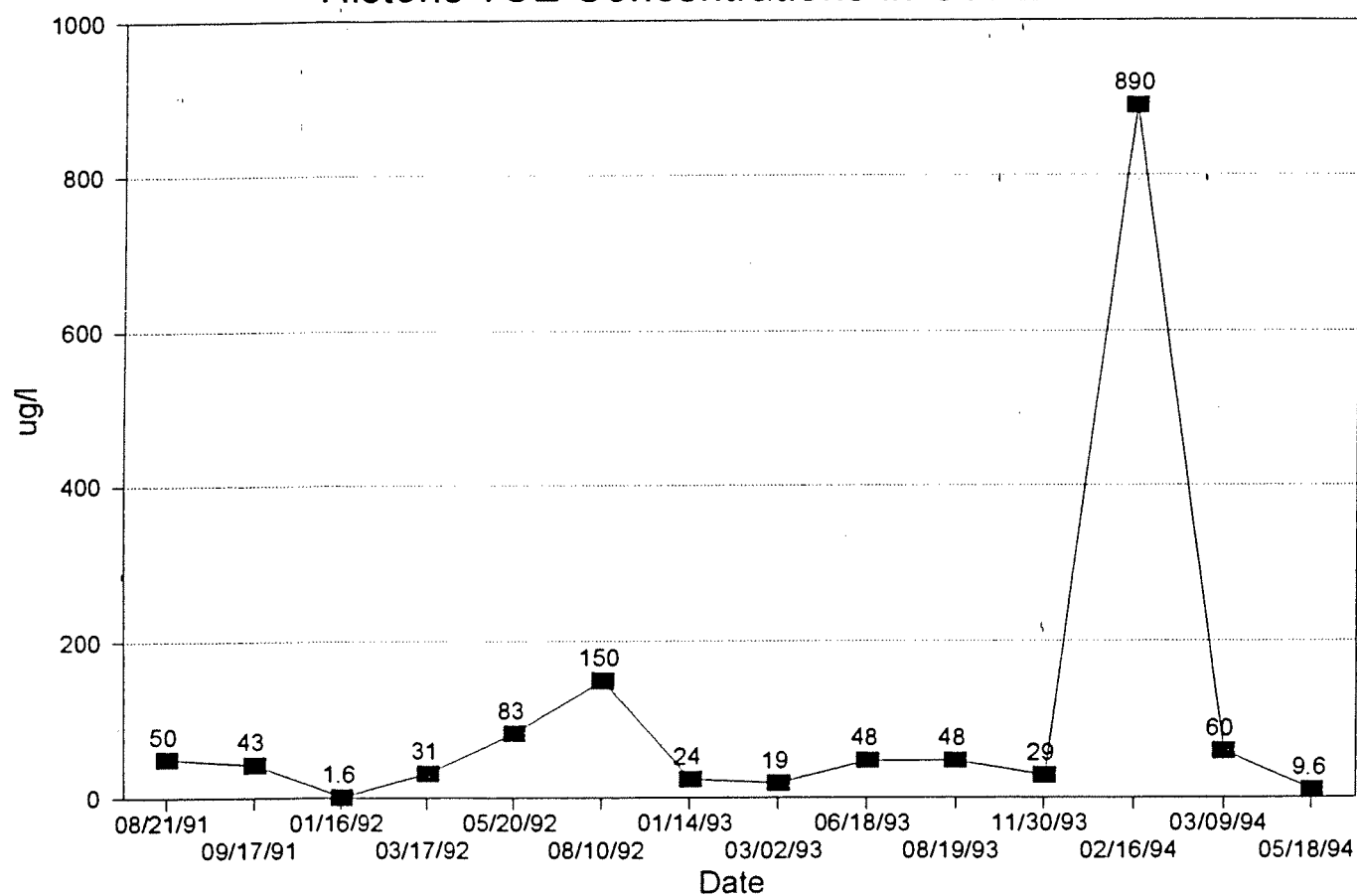


Figure 22
Historic PCE Concentrations in GW-2

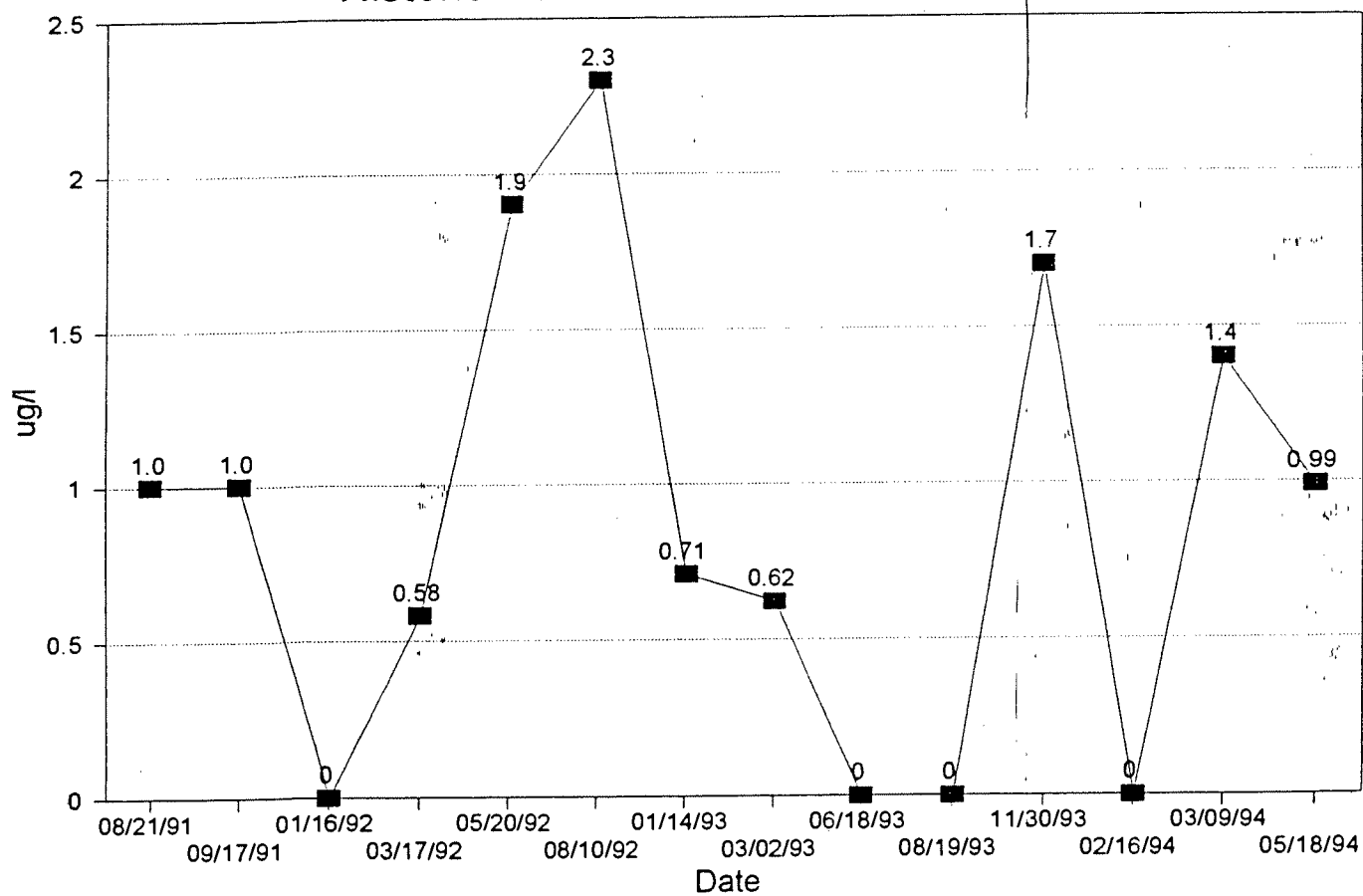


Figure 23
Historic Groundwater Elevations in GW-3

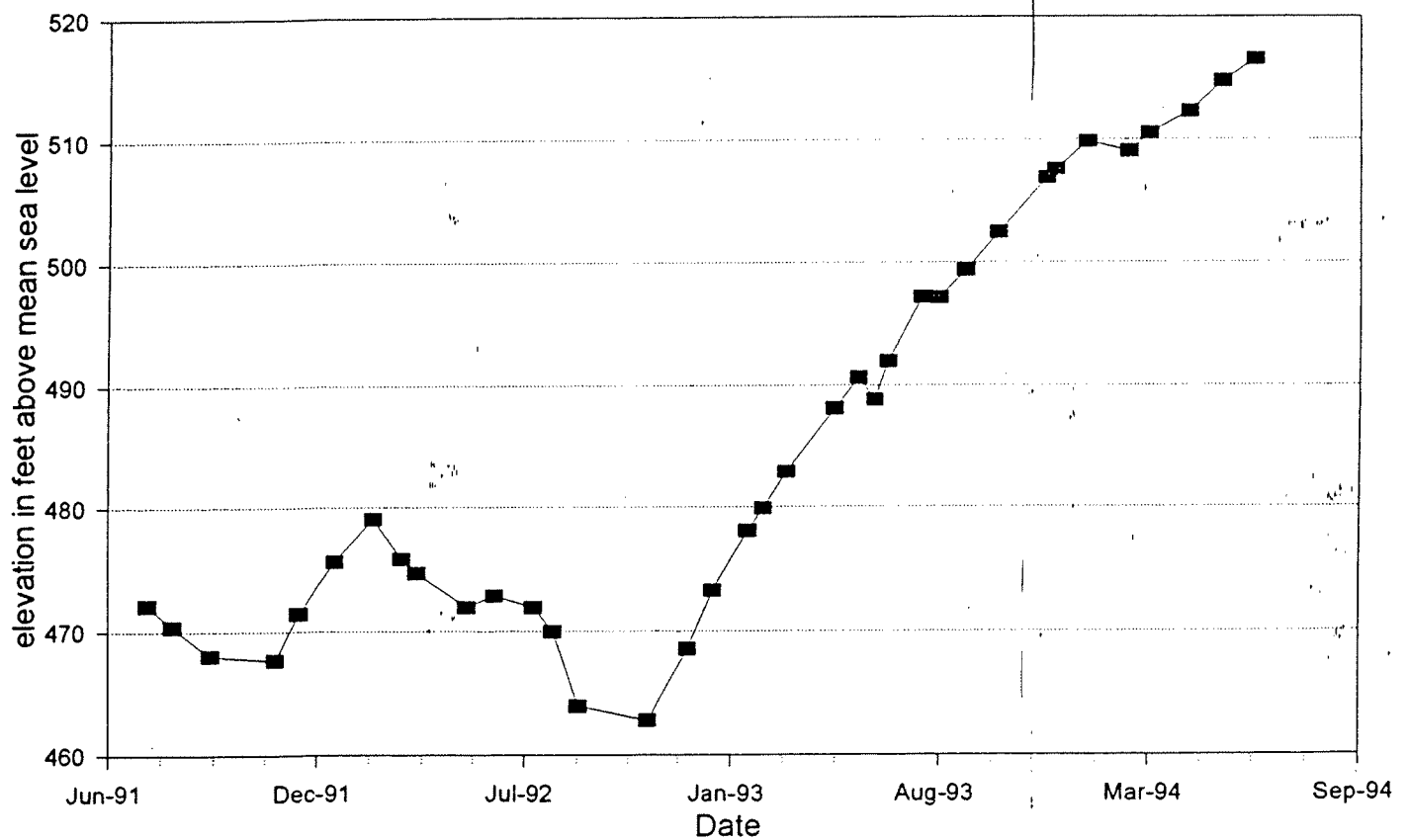


Figure 24

Historic Nitrate Concentrations in GW-3

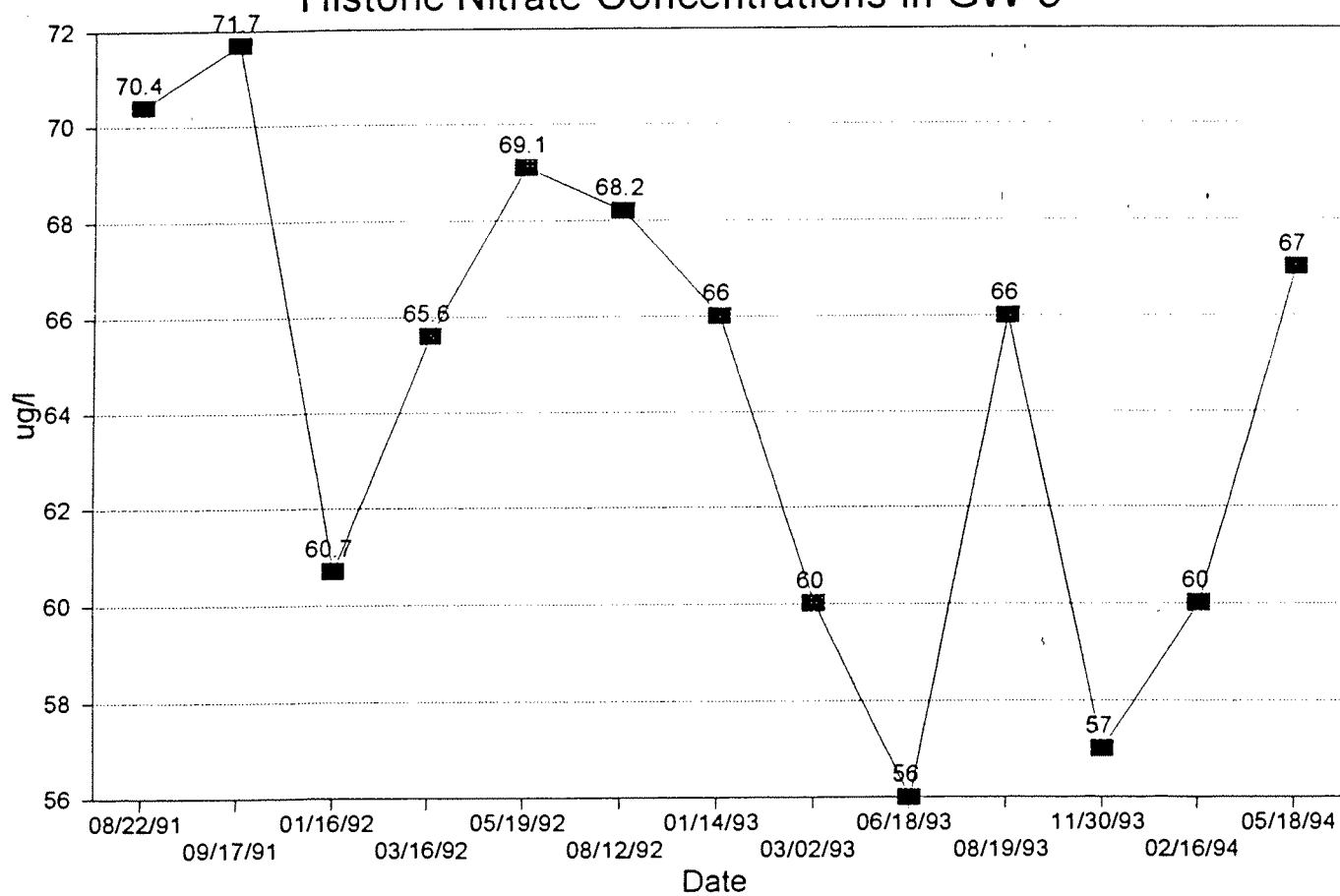


Figure 25
Historic 1,1,1-TCA Concentrations in GW-3

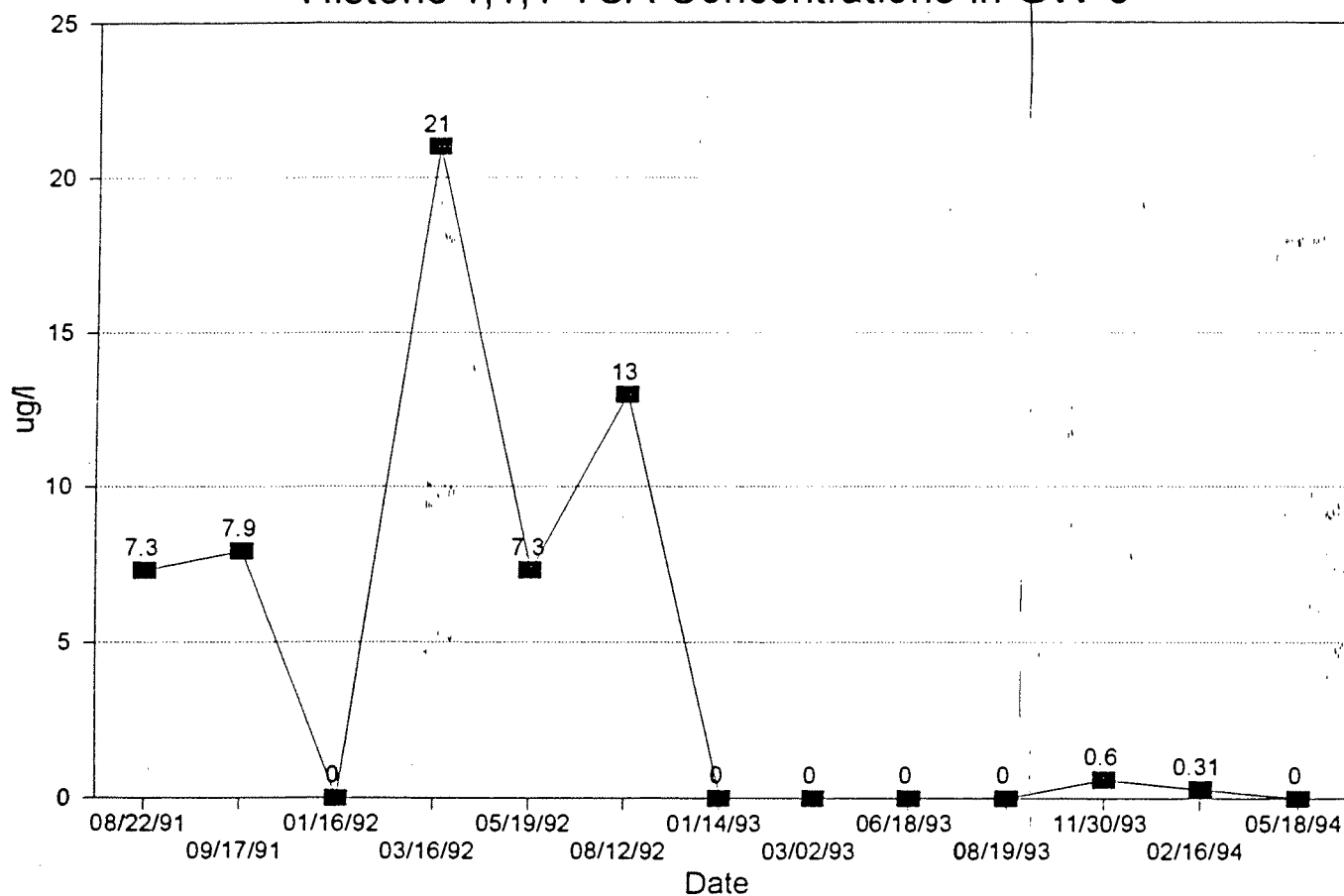


Figure 26

Historic 1,1-DCA Concentrations in GW-3

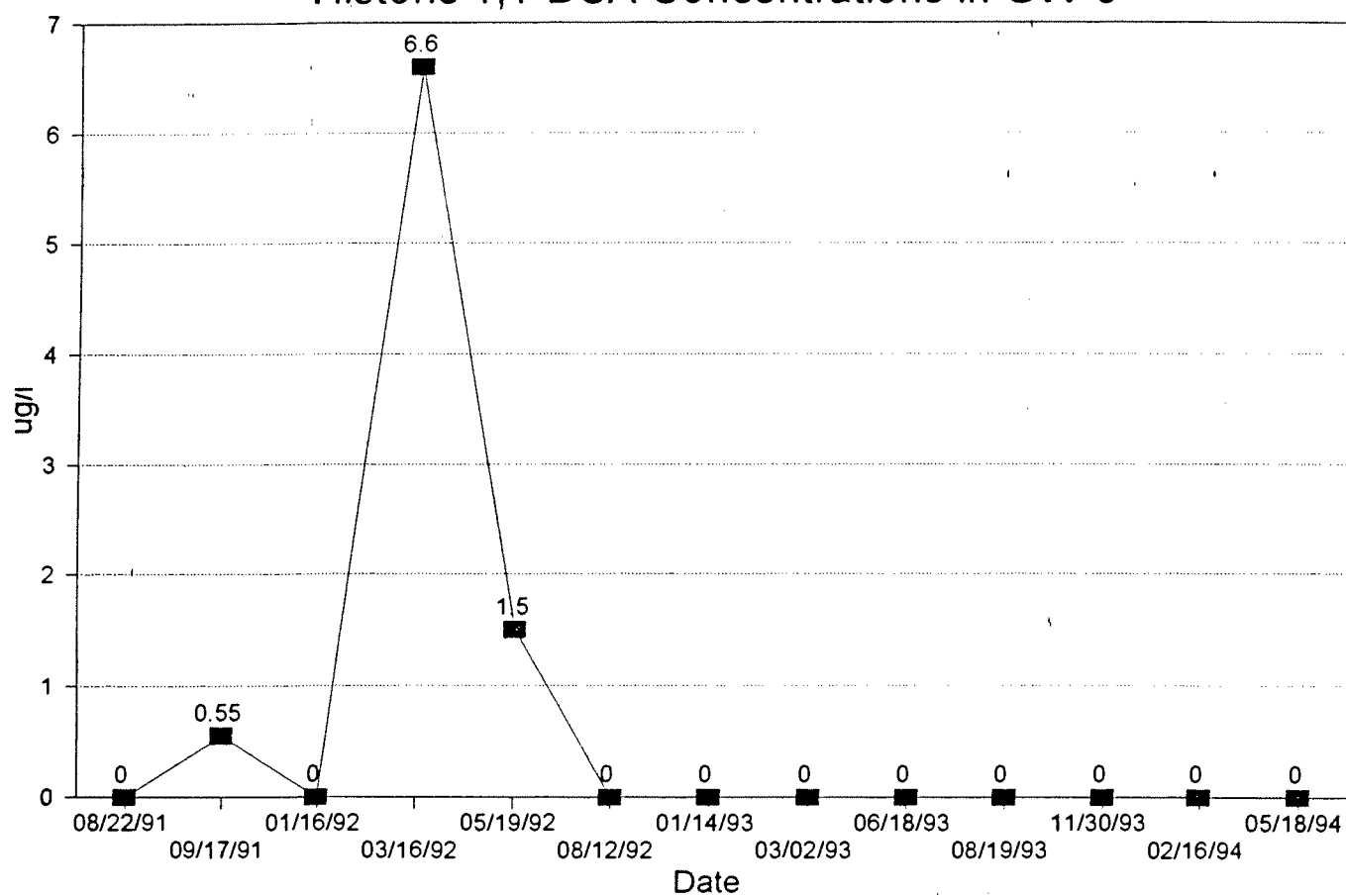


Figure 27
Historic 1,1-DCE Concentrations in GW-3

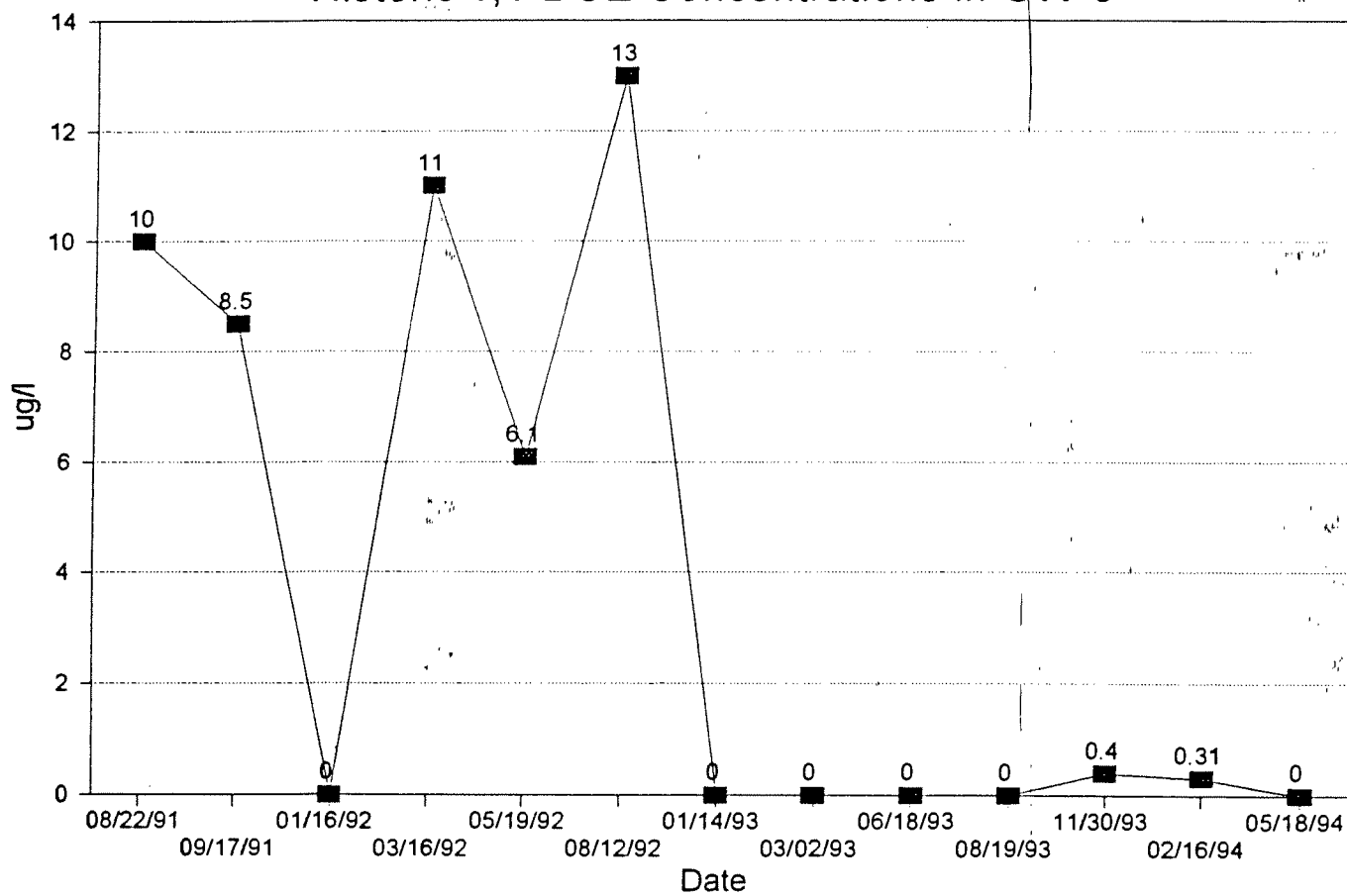


Figure 28
Historic TCE Concentrations in GW-3

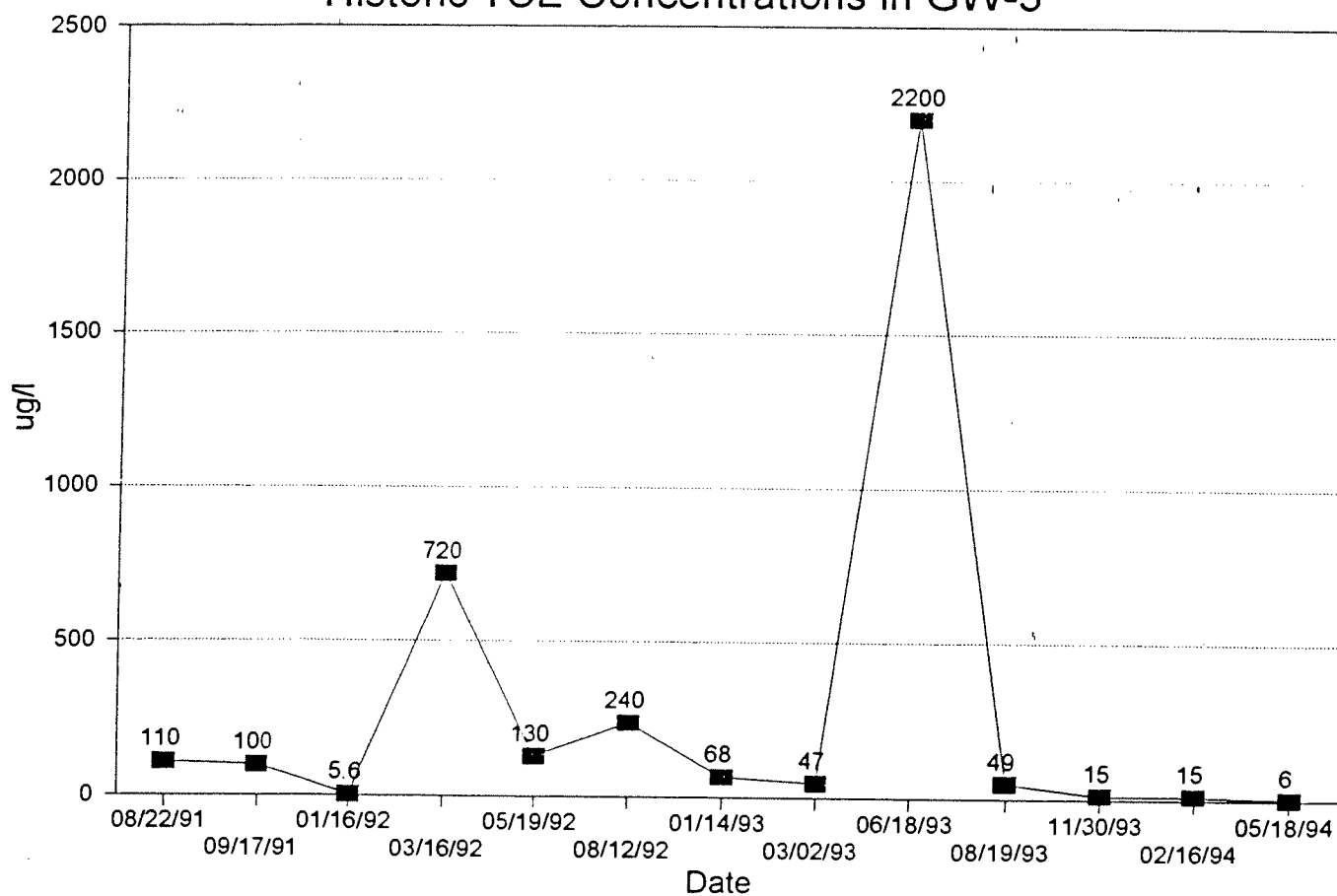


Figure 29
Historic PCE Concentrations in GW-3

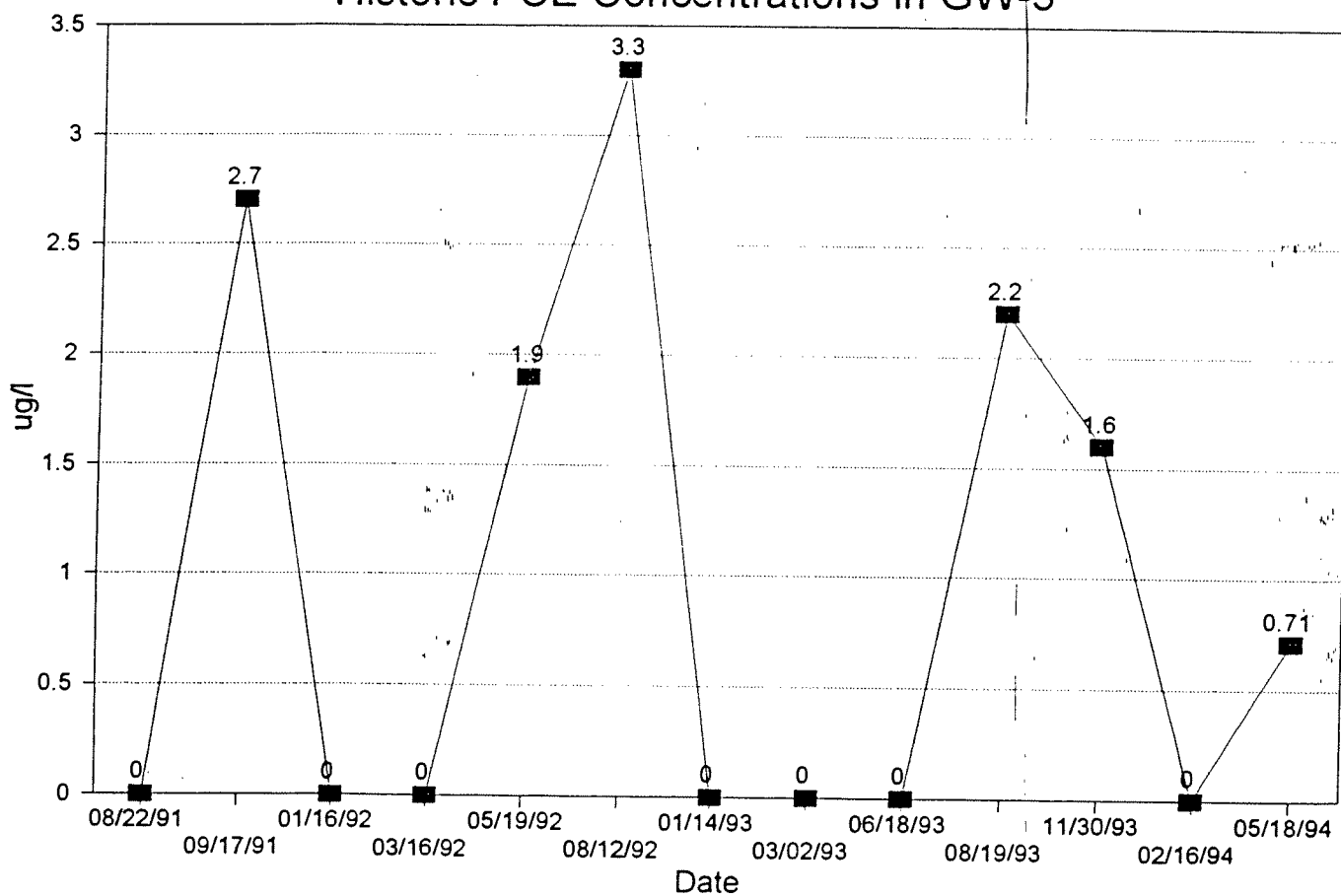


Figure 30
Historic CIS-1,2-DCE Concentrations in GW-3

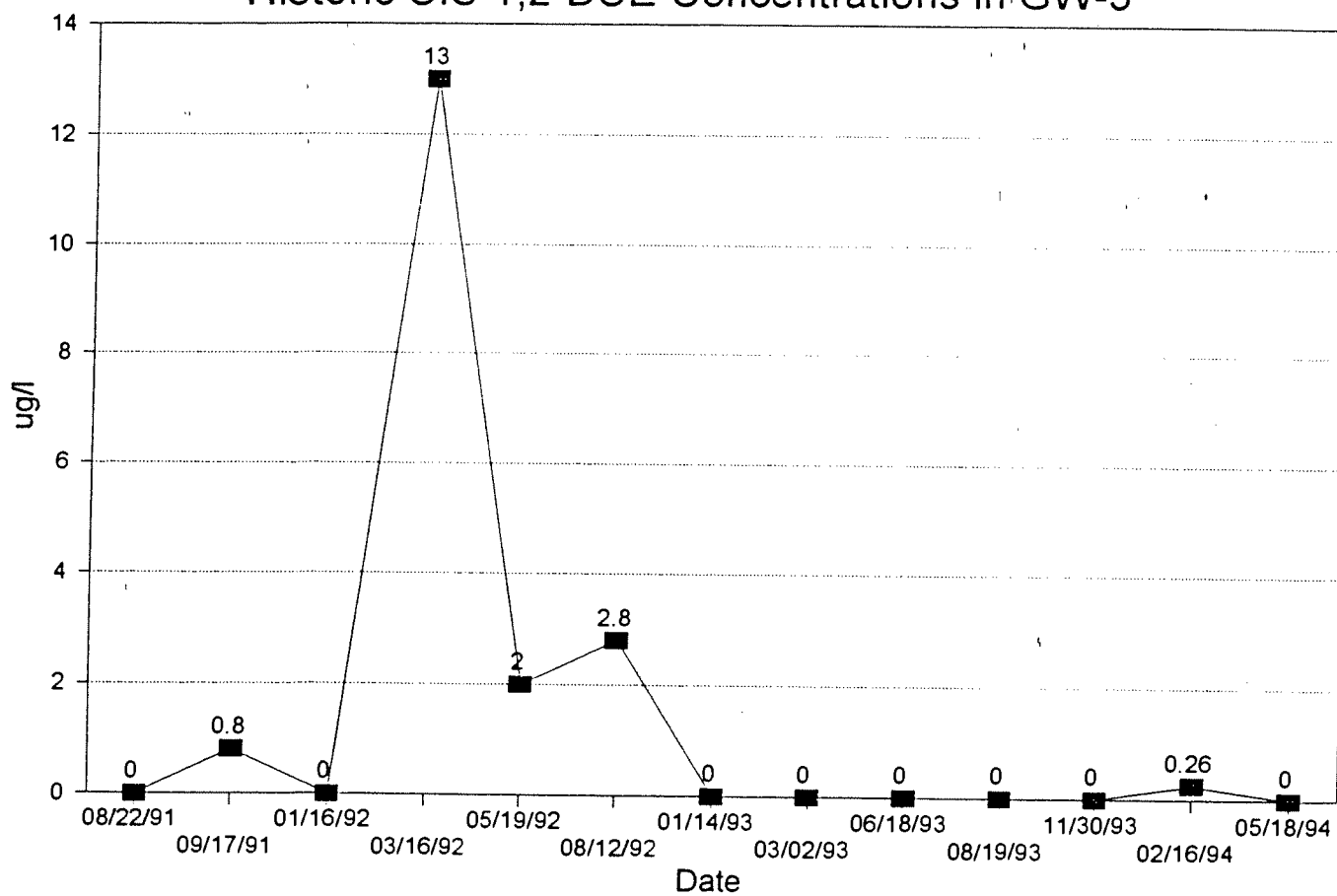


Figure 31
Historic Groundwater Elevations in GW-4

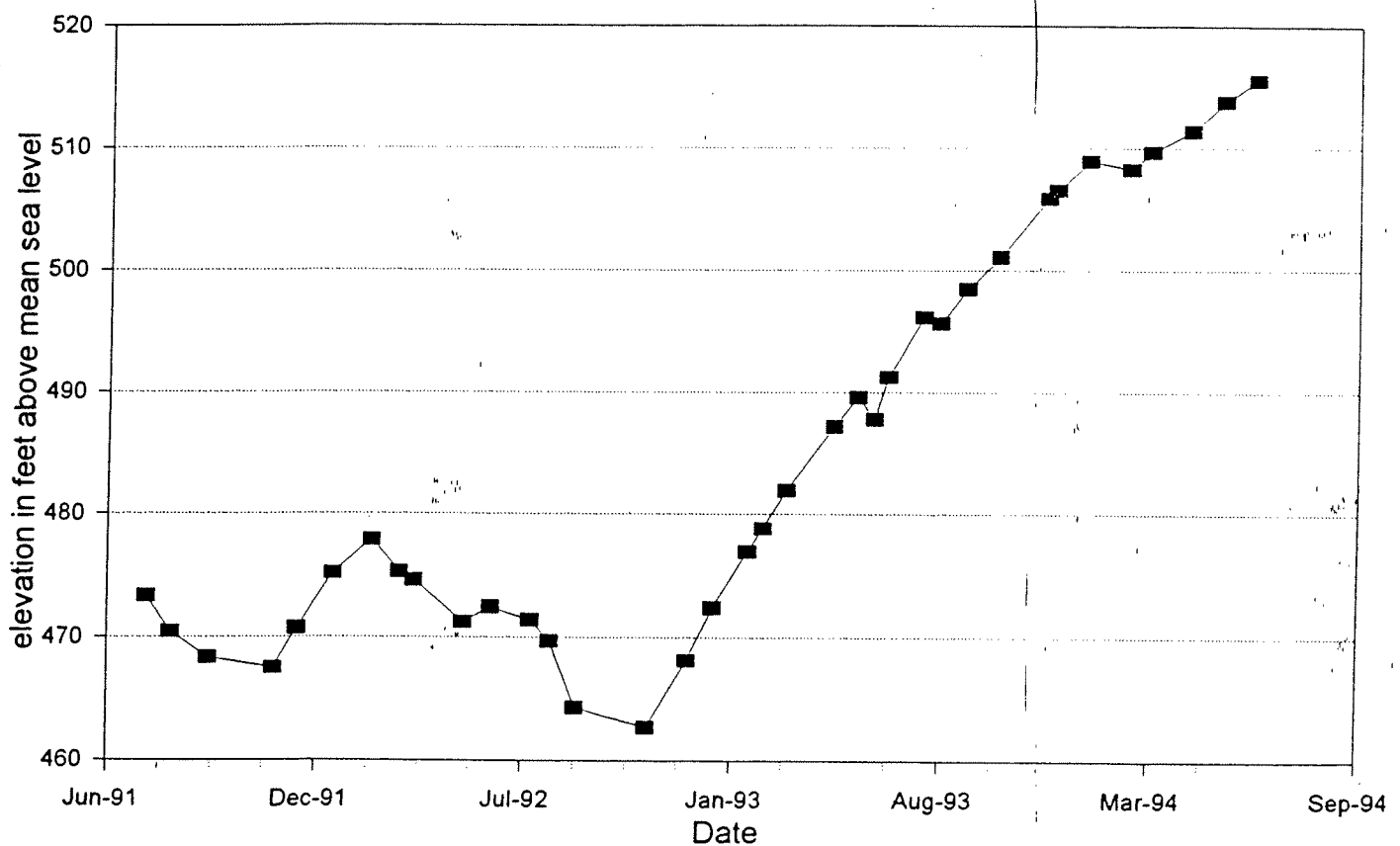


Figure 32
Historic Nitrate Concentrations in GW-4

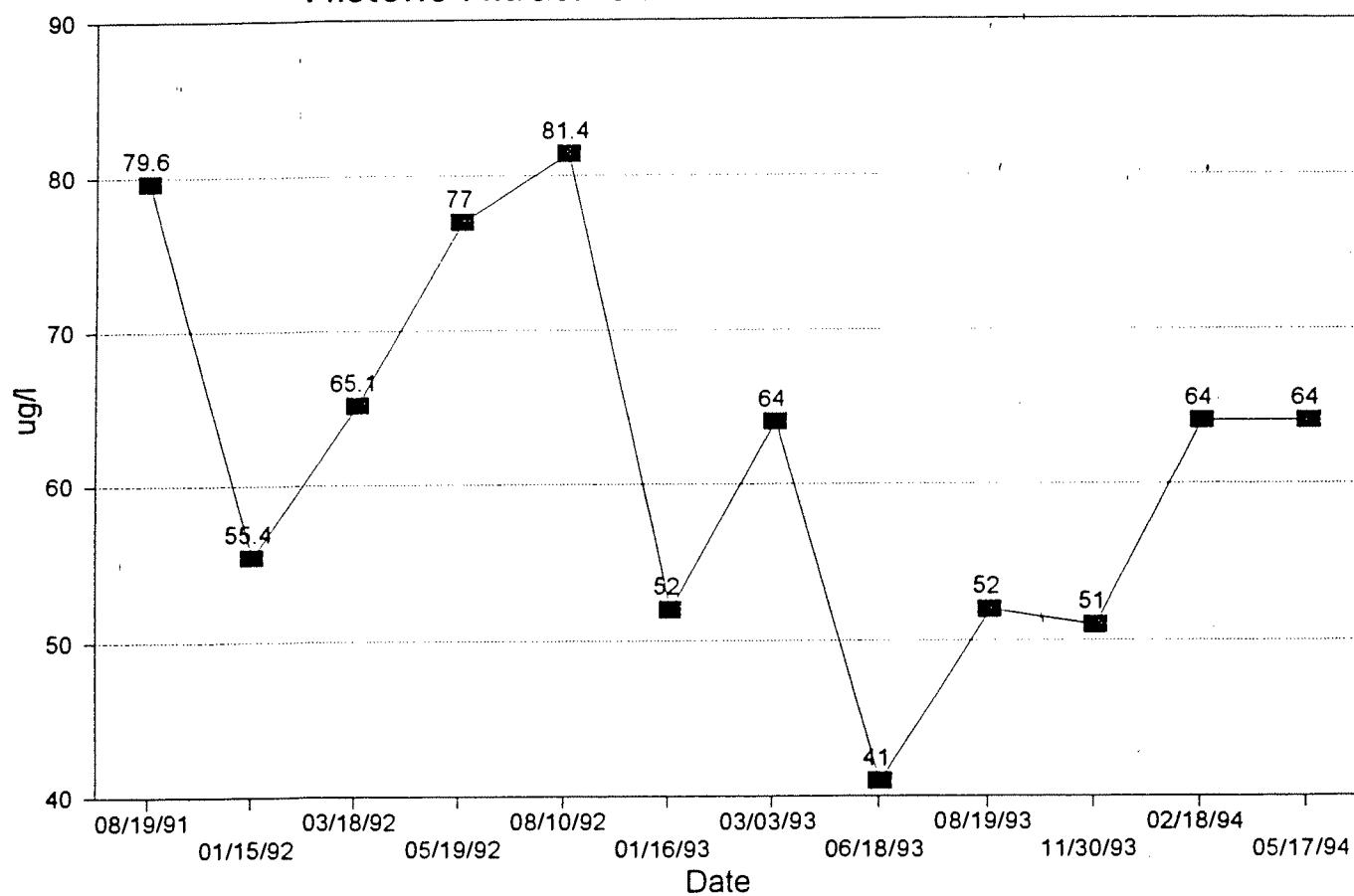


Figure 33
Historic 1,1-DCE Concentrations in GW-4

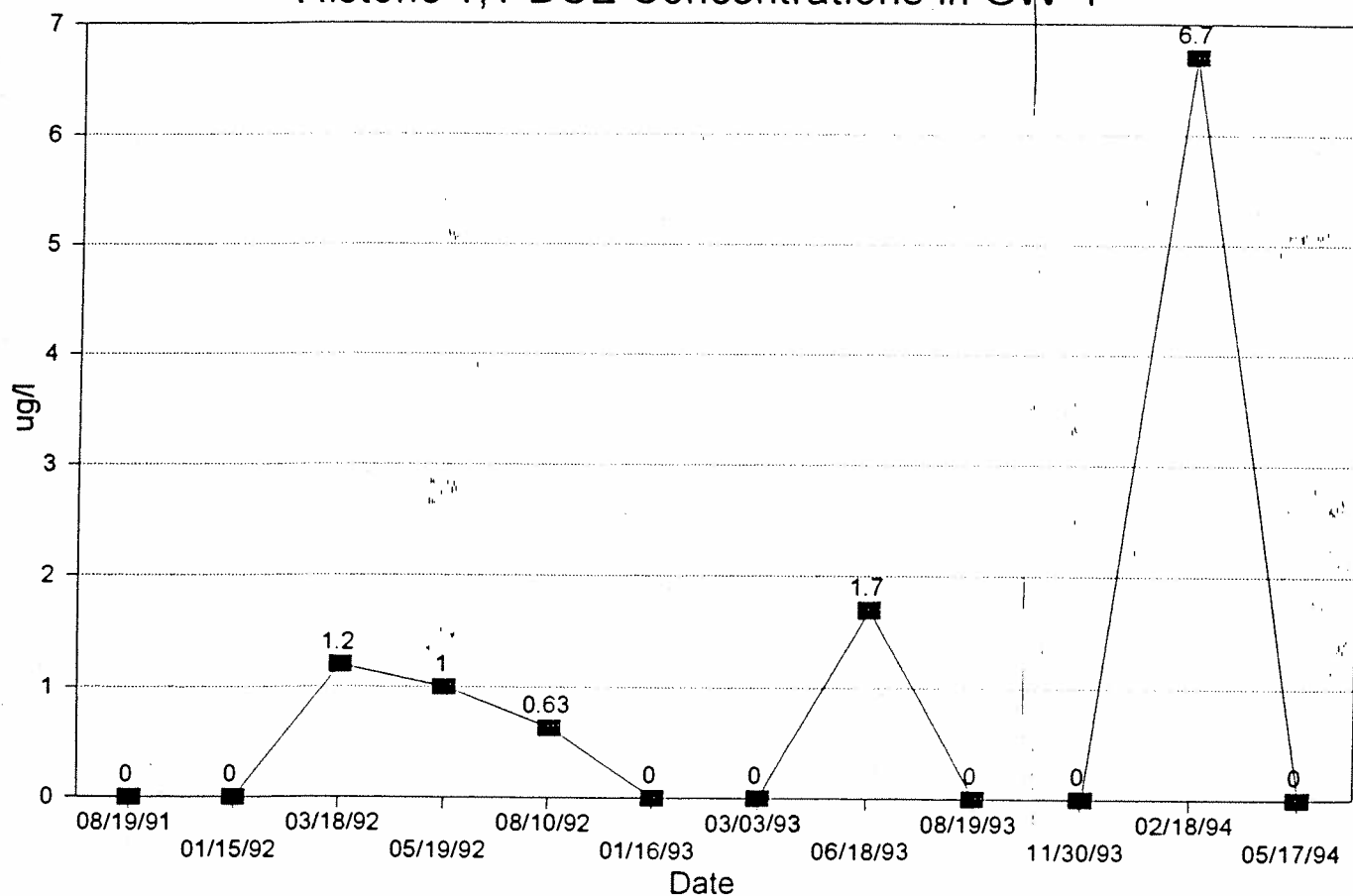


Figure 34

Historic CCL4 Concentrations in GW-4

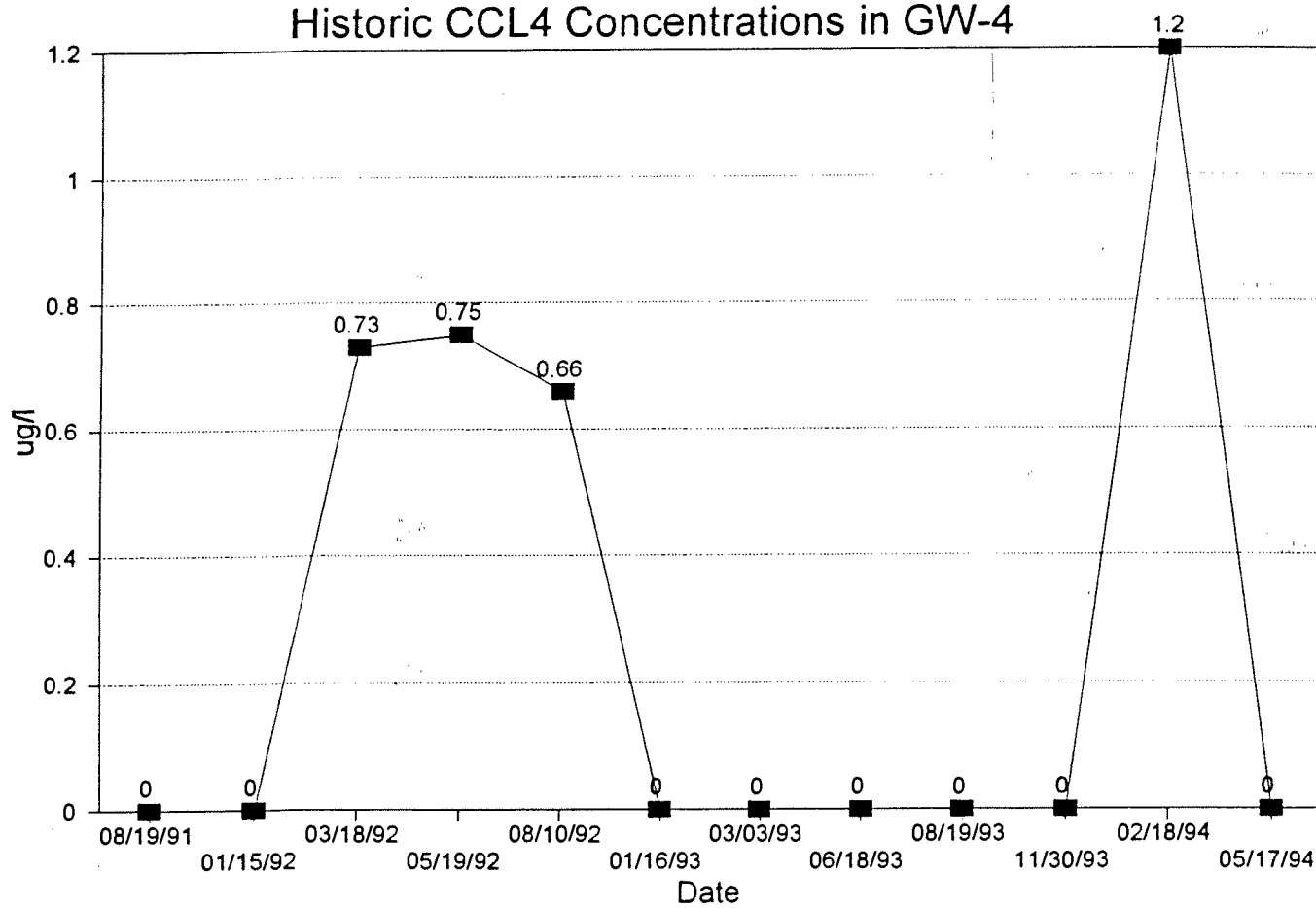


Figure 35
Historic TCE Concentrations in GW-4

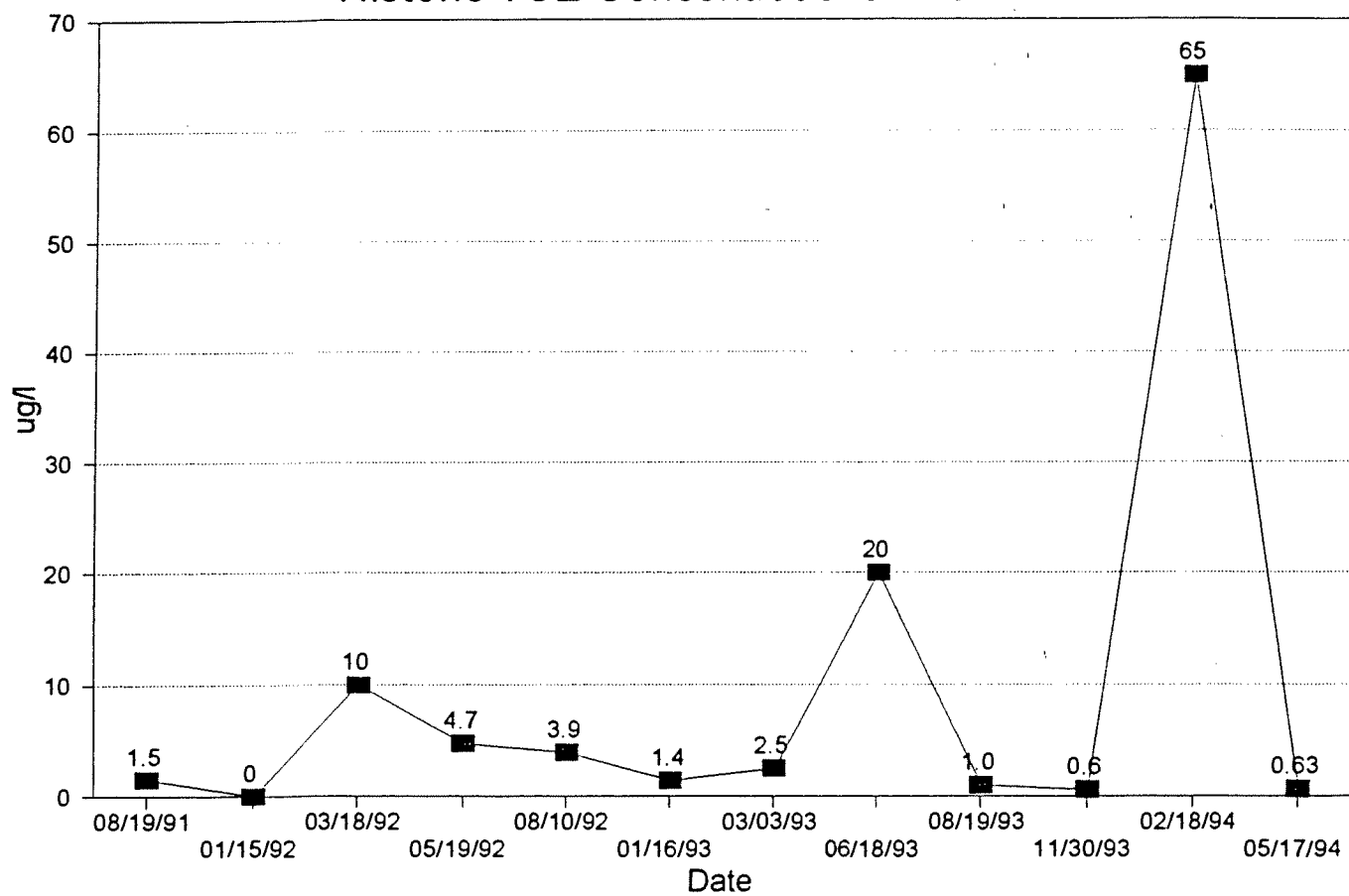


Figure 36

Historic PCE Concentrations in GW-4

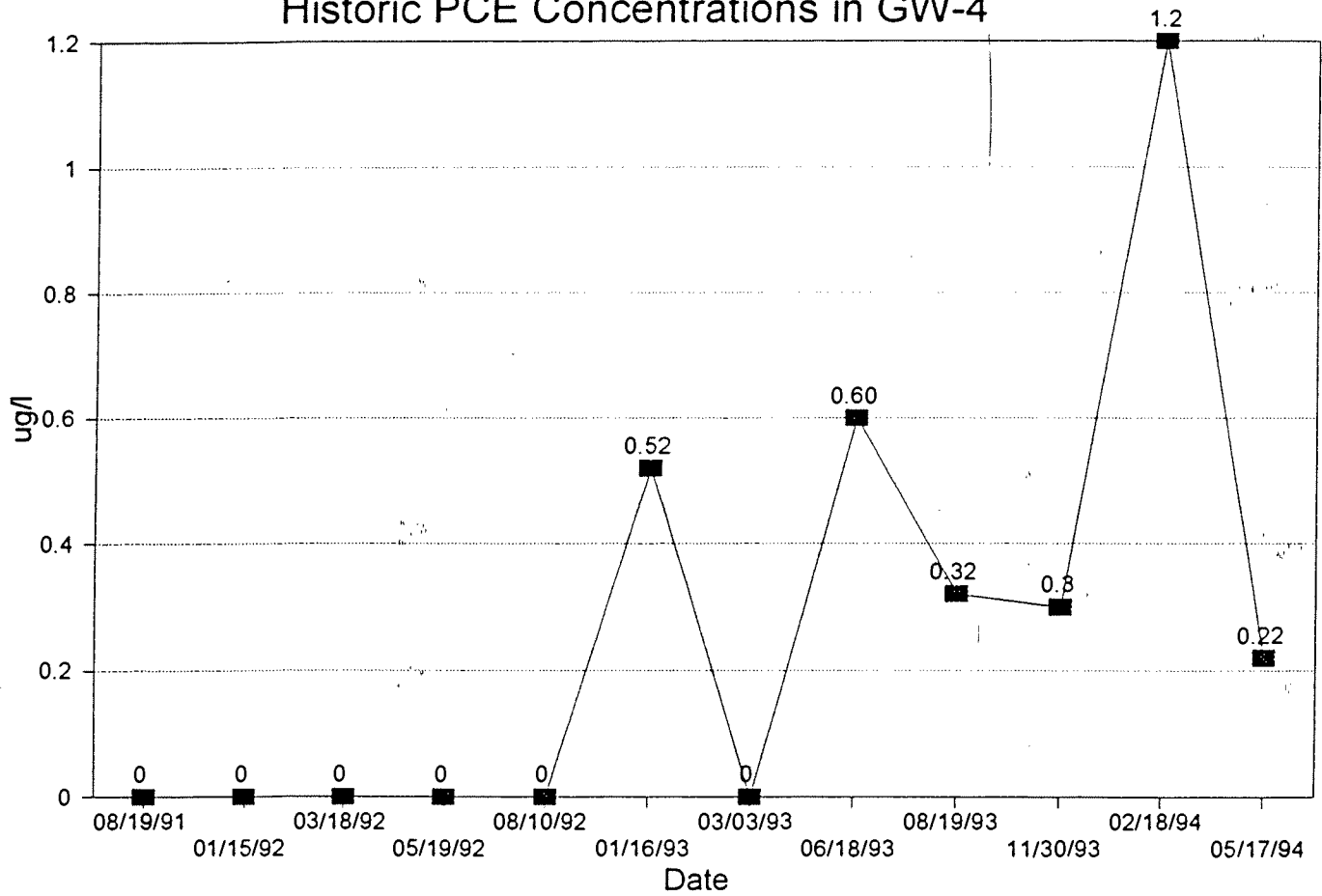


Figure 37
Historic Groundwater Elevations in GW-5

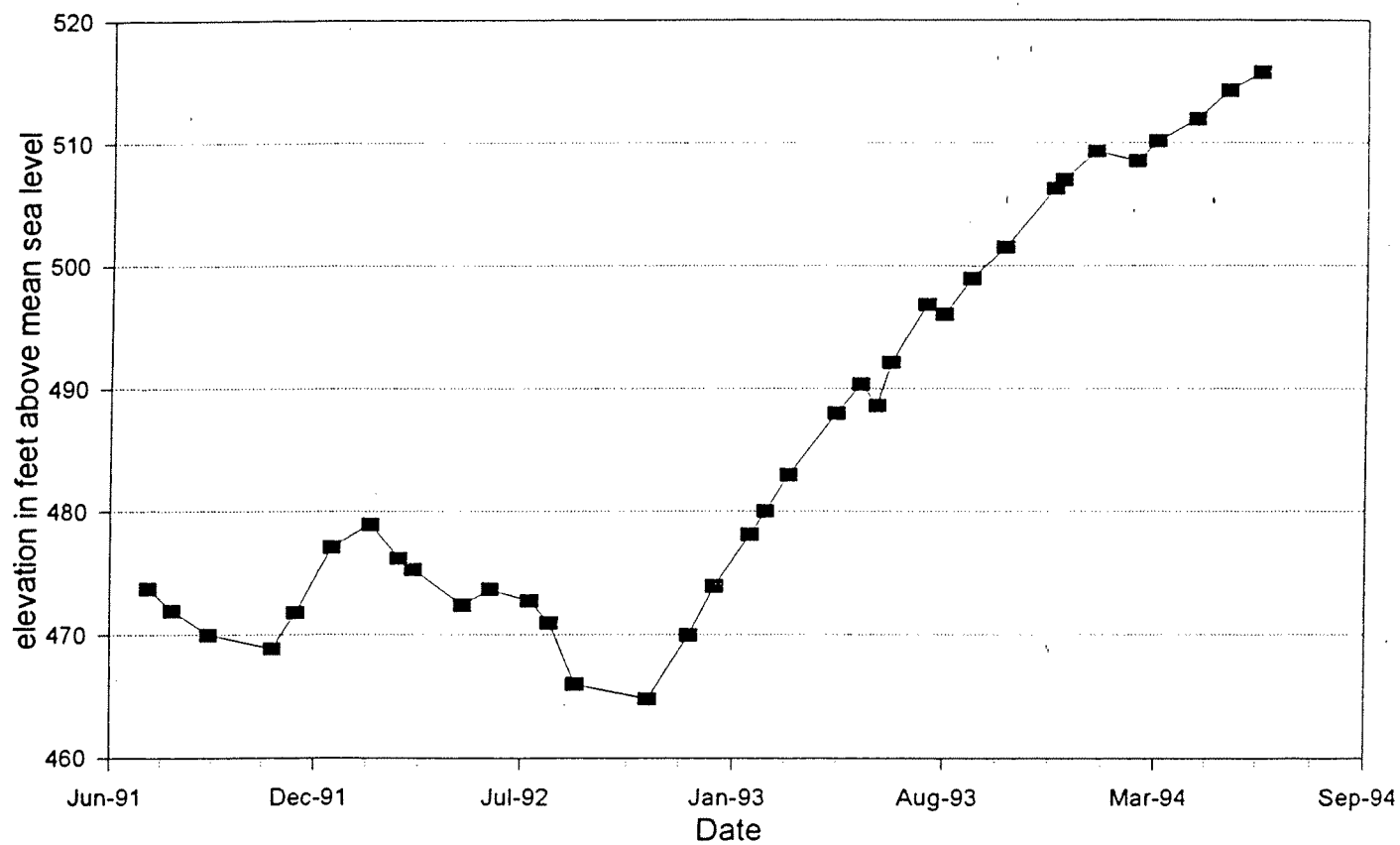


Figure 38
Historic Nitrate Concentrations in GW-5

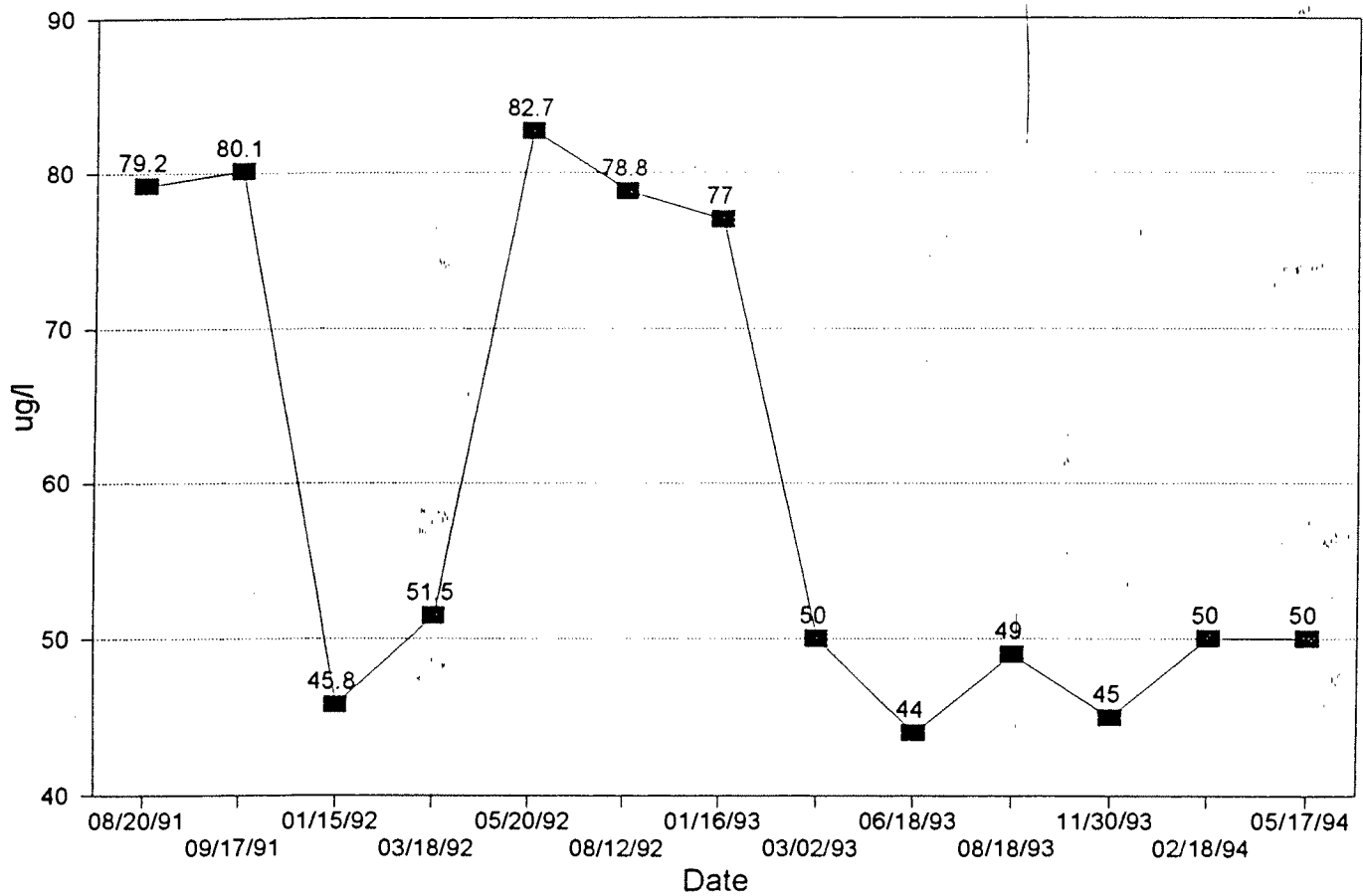


Figure 39
Historic TCE Concentrations in GW-5

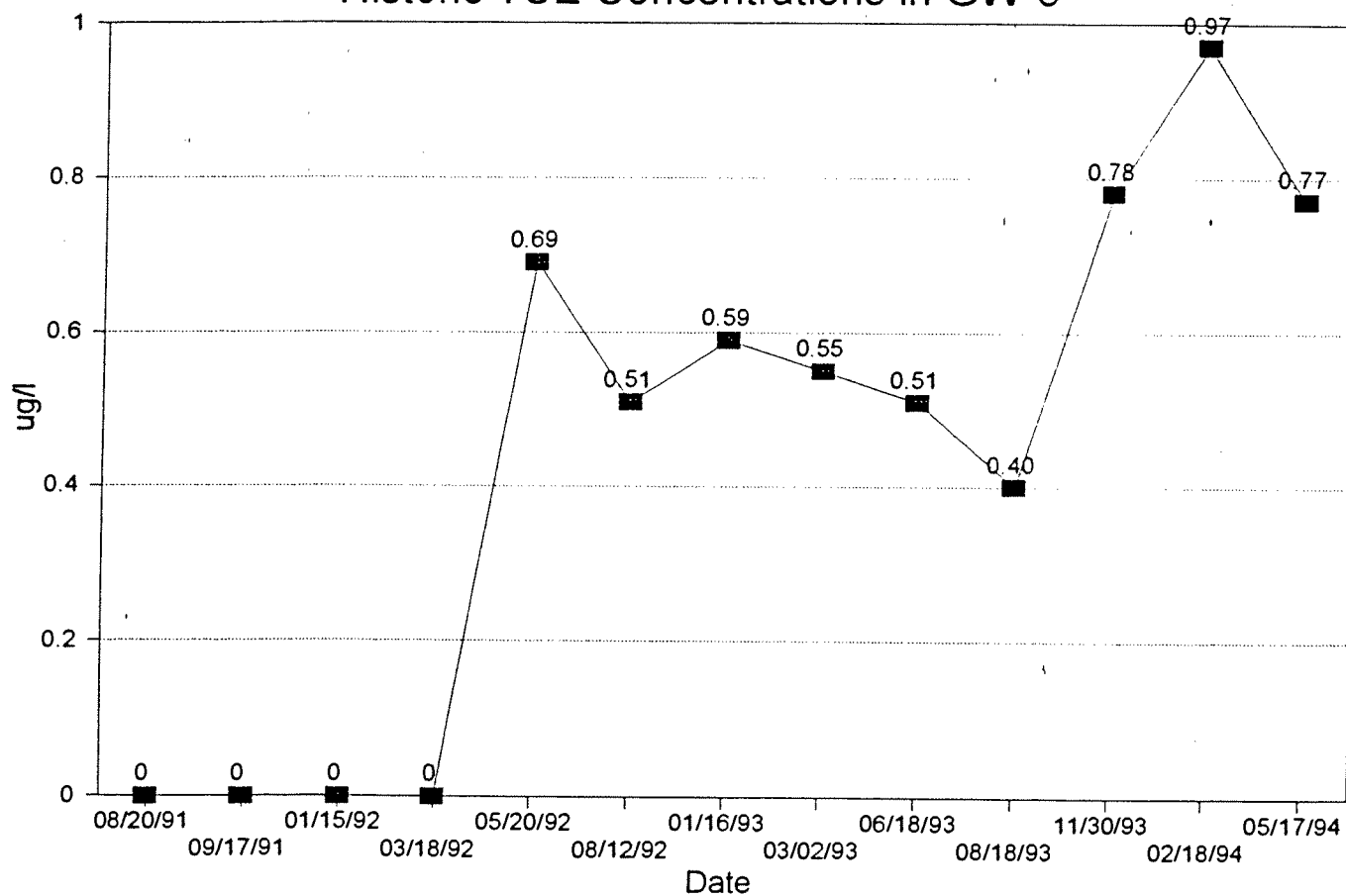


Figure 40

Historic PCE Concentrations in GW-5

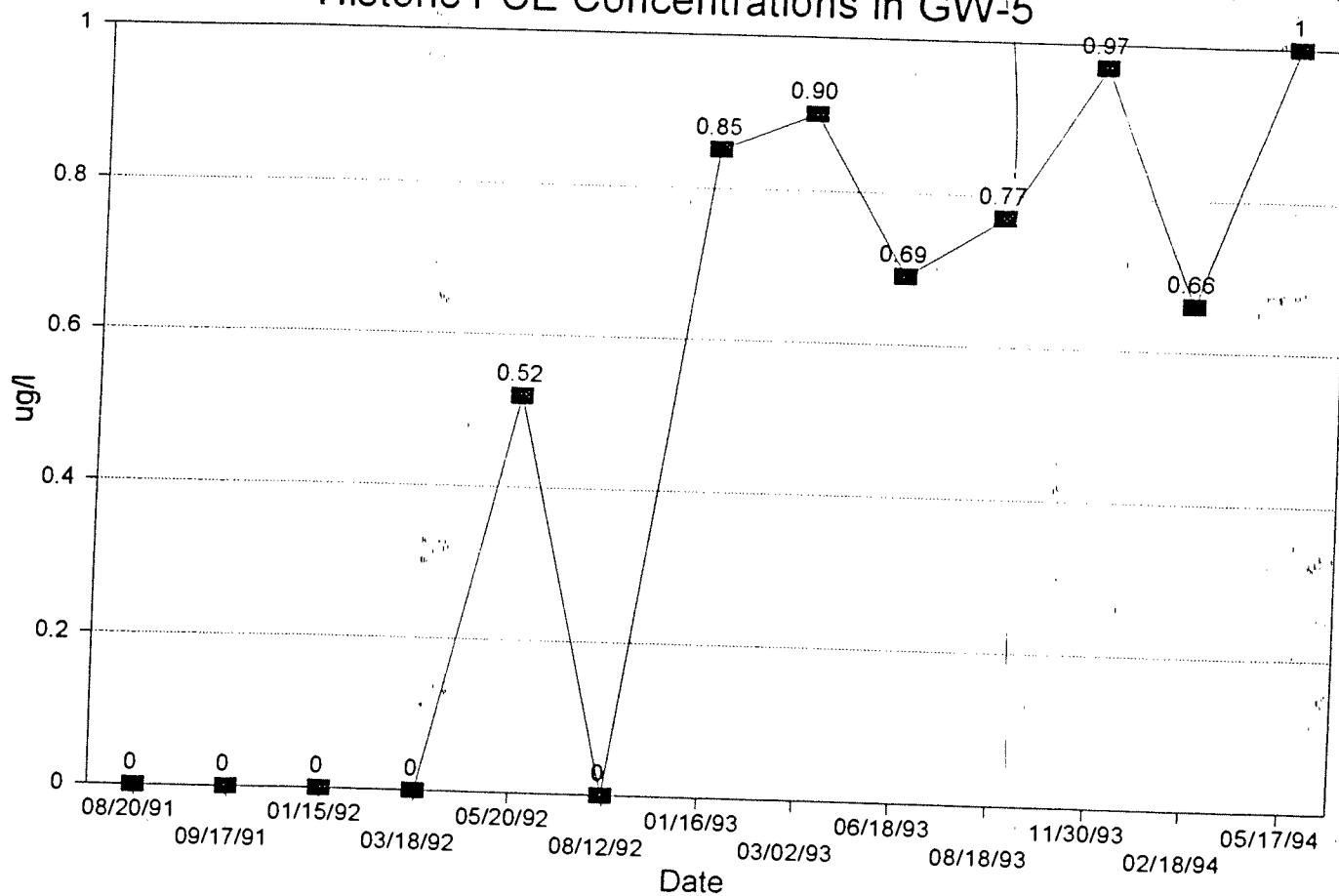


Figure 41
Historic Groundwater Elevations in GW-6

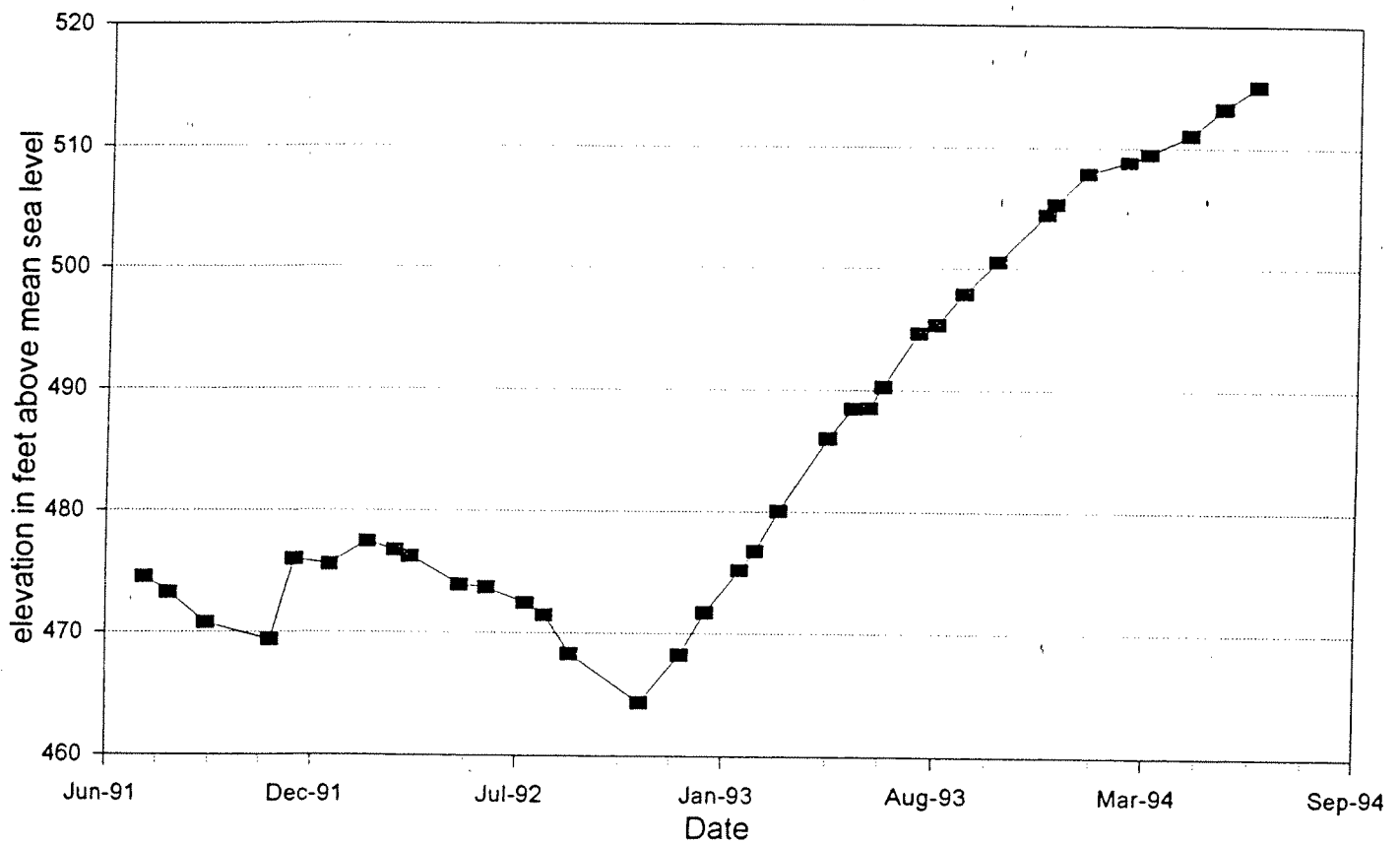


Figure 42
Historic Nitrate Concentrations in GW-6

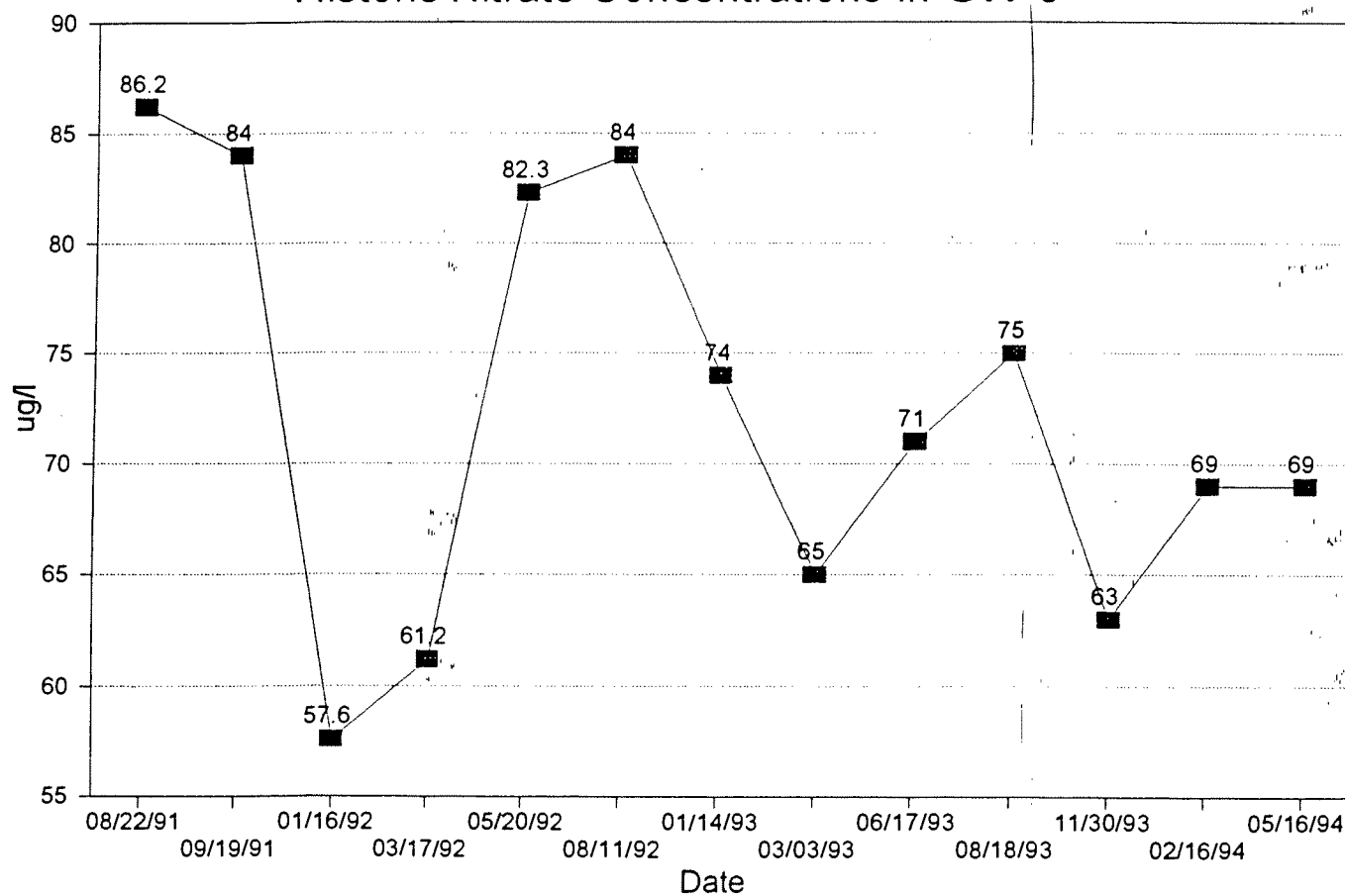


Figure 43
Historic TCE Concentrations in GW-6

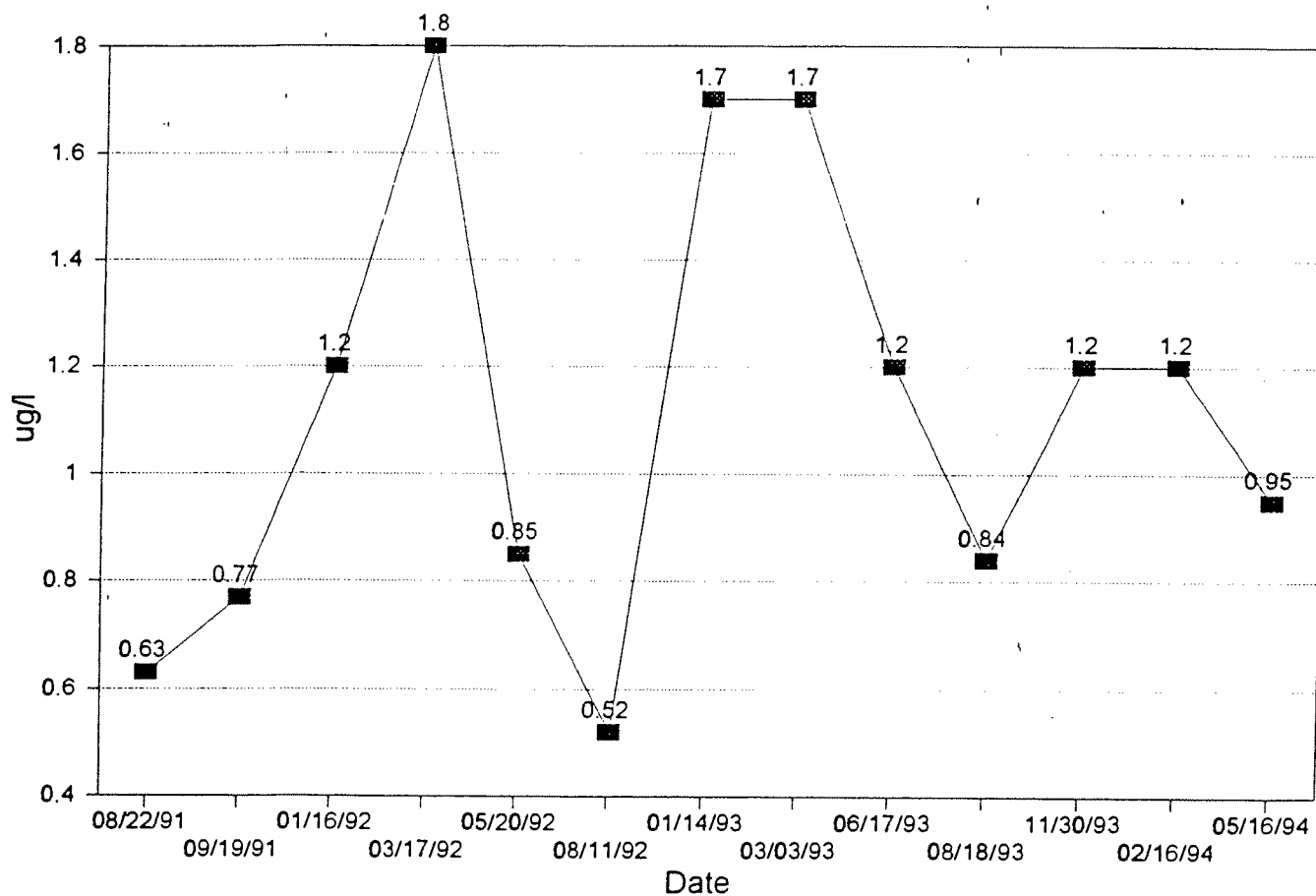


Figure 44

Historic PCE Concentrations in GW-6

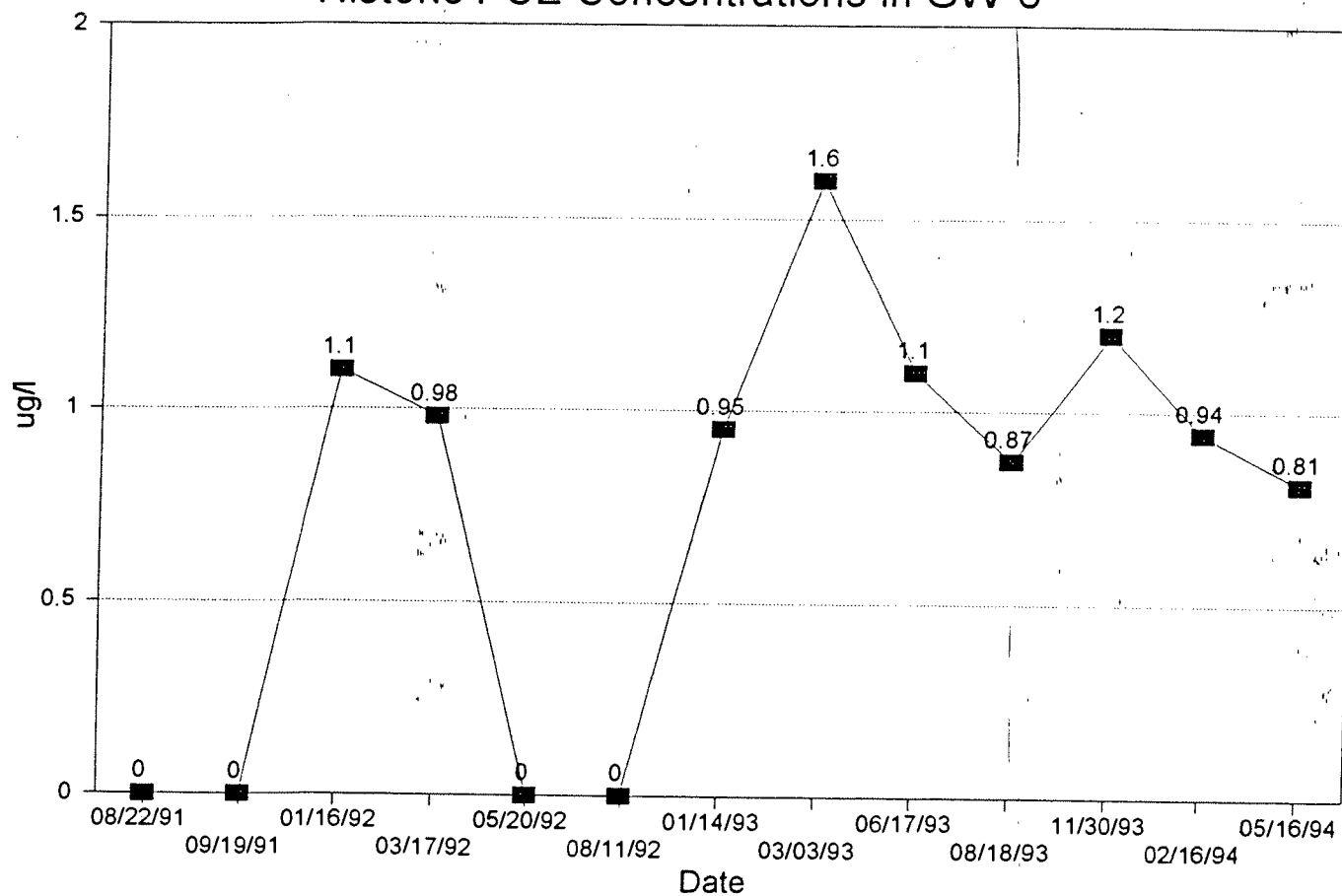


Figure 45

Historic CIS-1,2-DCE Concentrations in GW-6

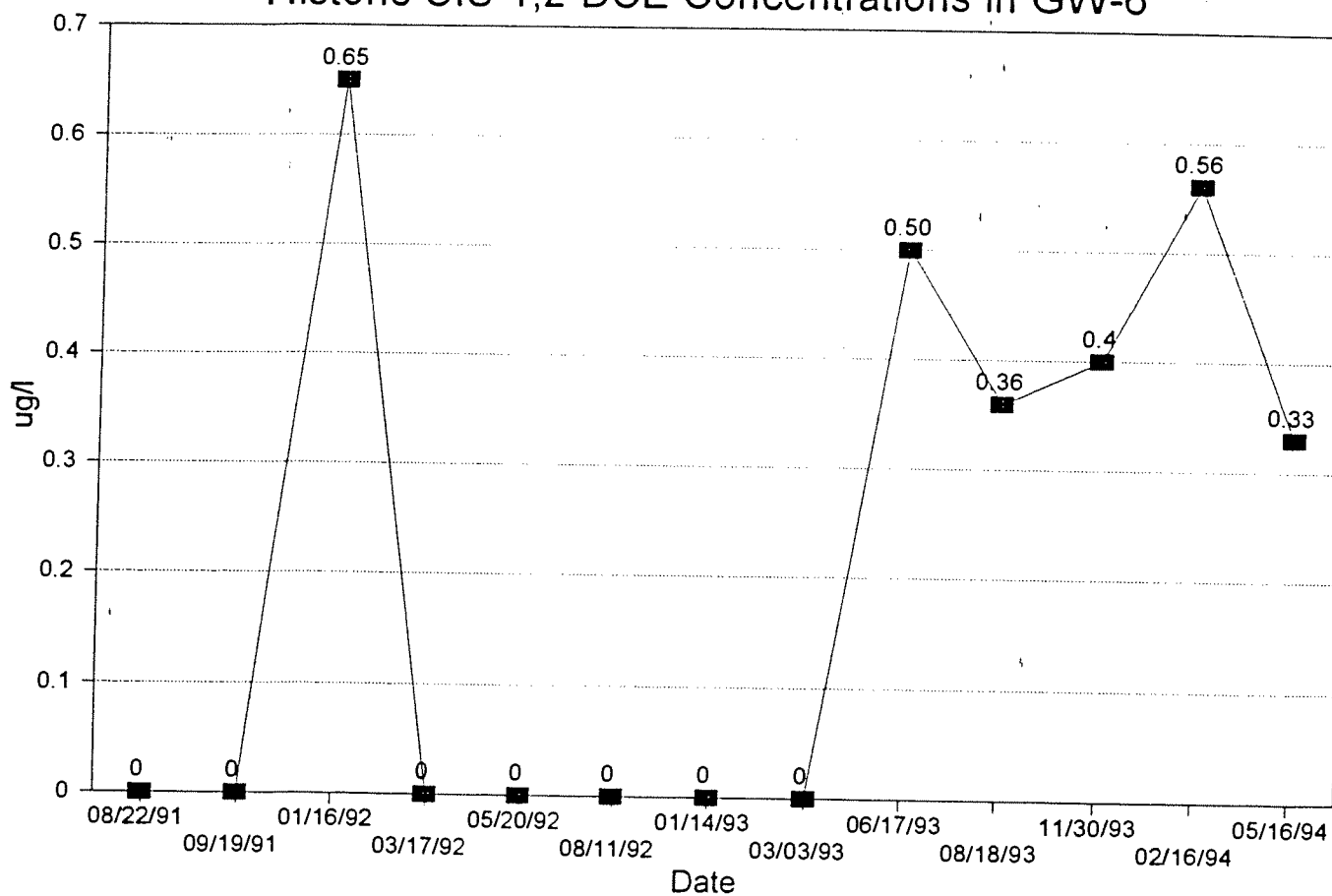


Figure 46
Historic Groundwater Elevations in GW-7

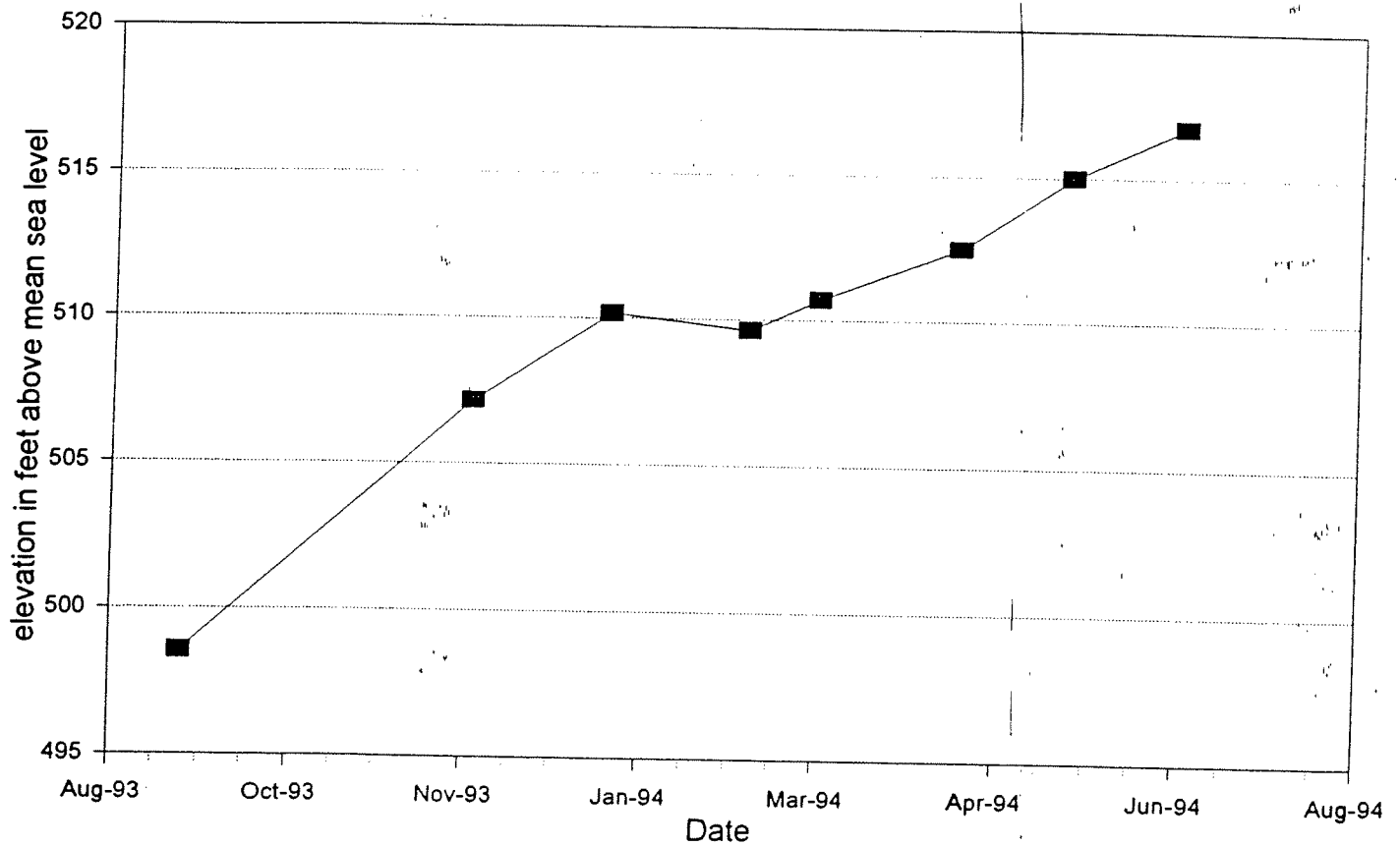


Figure 47
Historic Nitrate Concentrations in GW-7

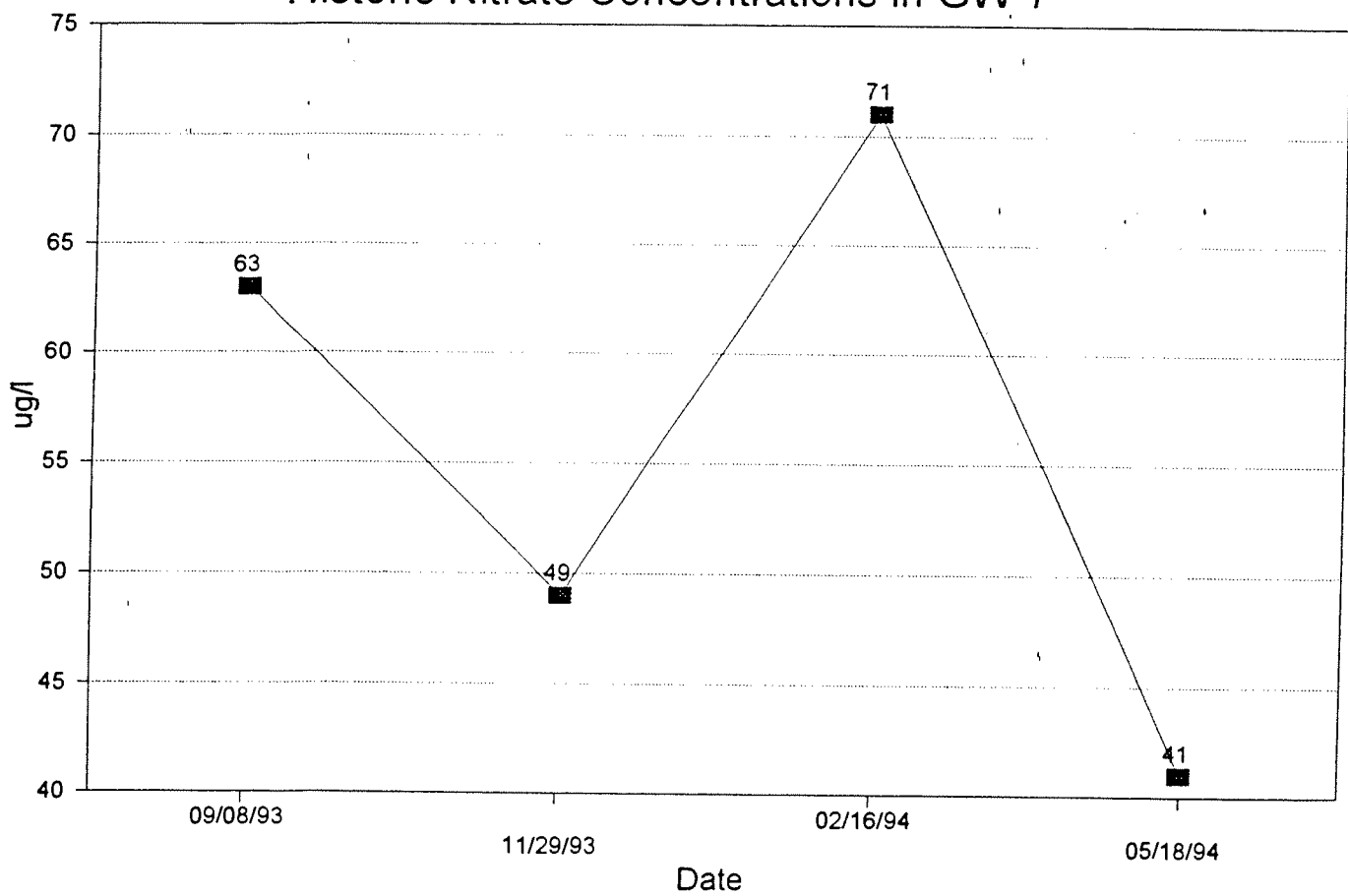


Figure 48
Historic TCE Concentrations in GW-7

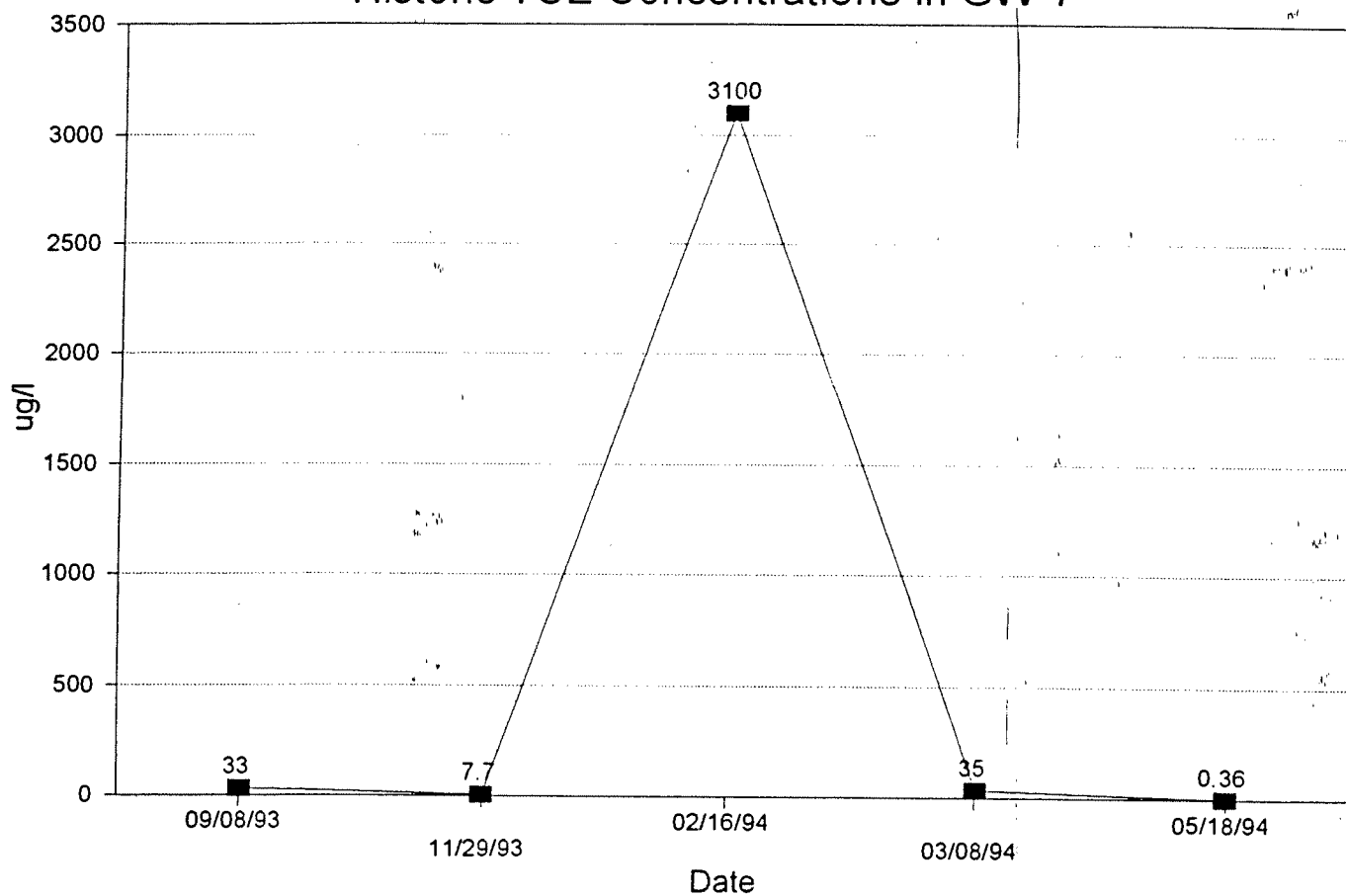


Figure 49

Historic CIS-1,2-DCE Concentrations in GW-7

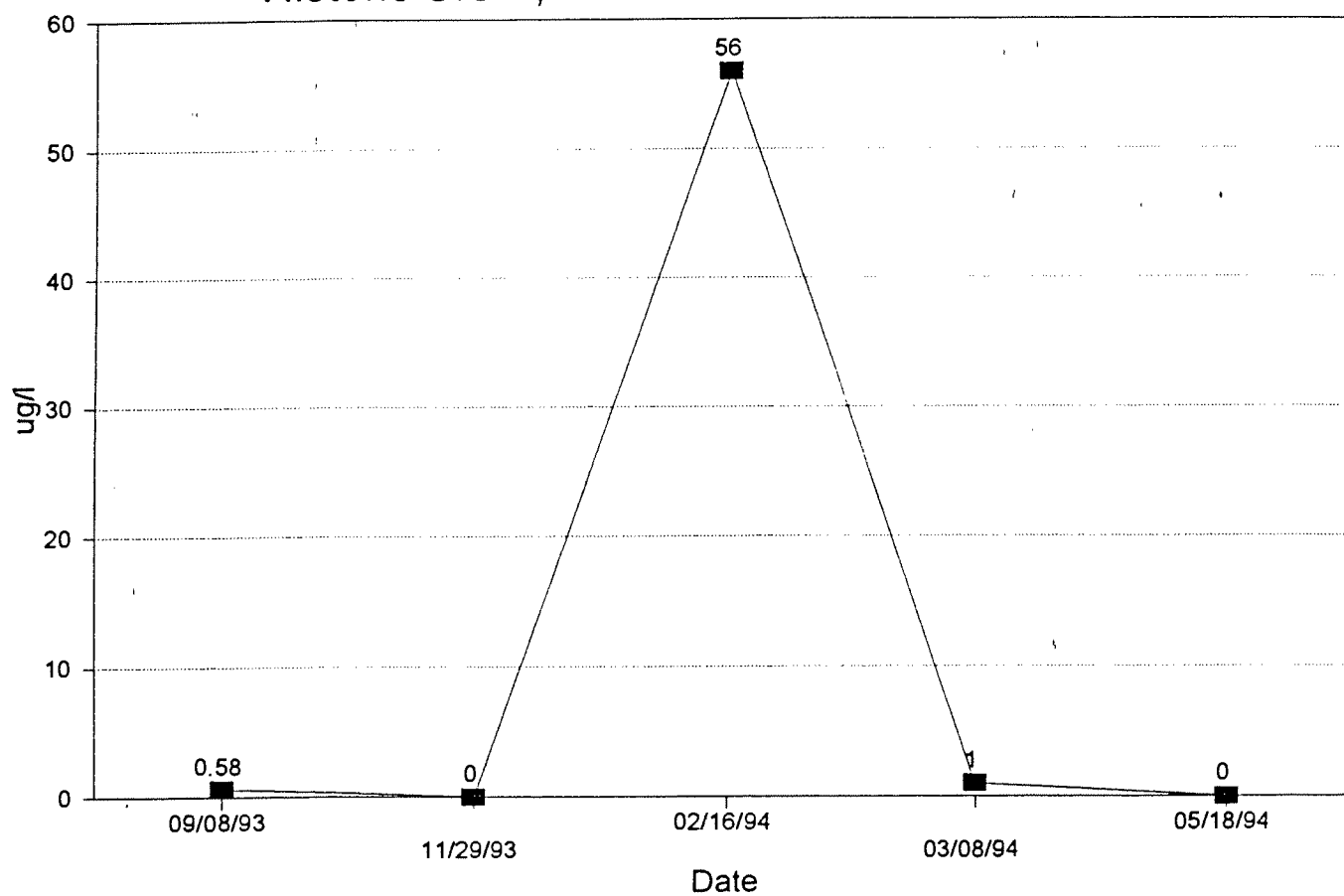


Figure 50
Historic Groundwater Elevations in GW-8

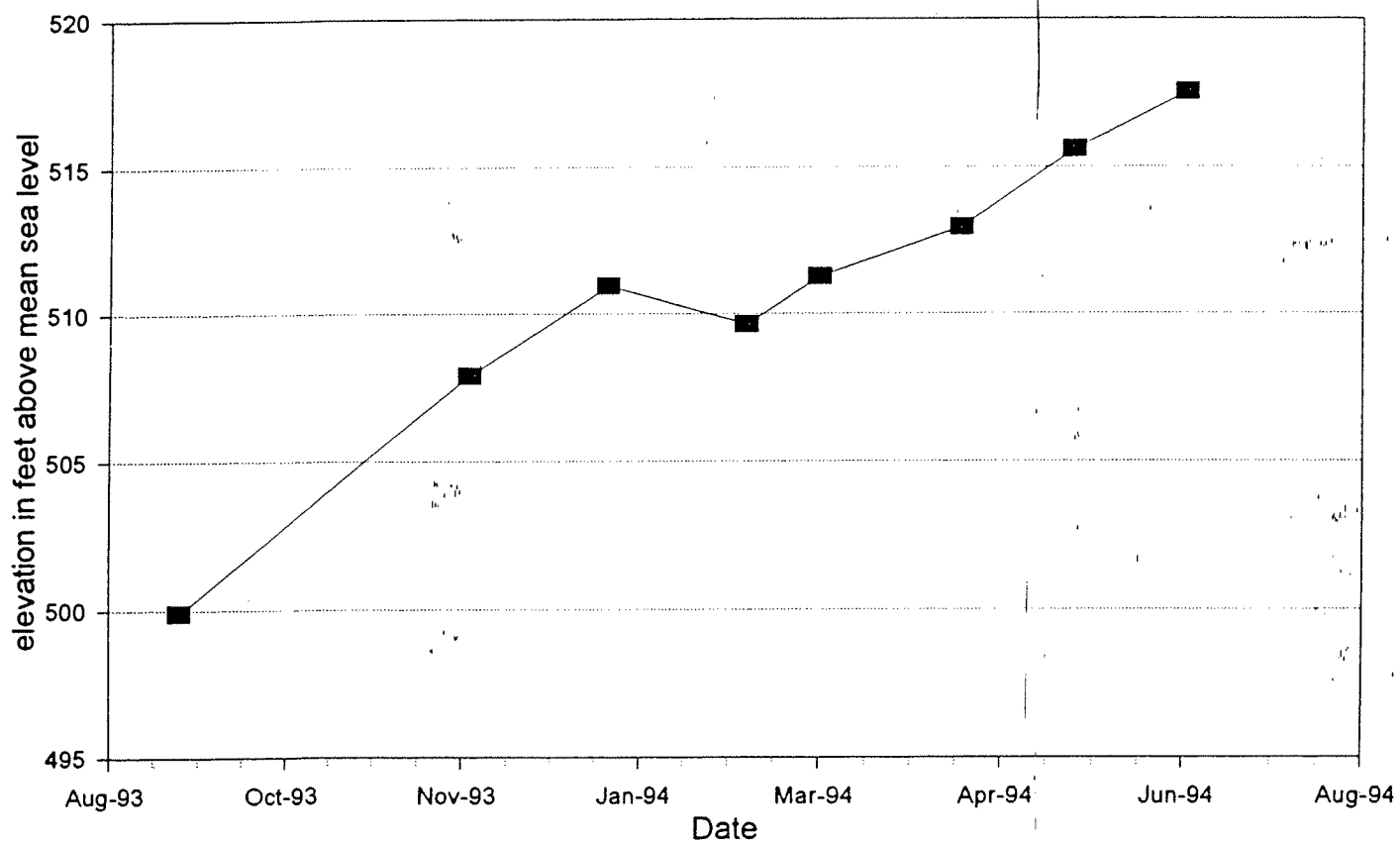


Figure 51

Historic Nitrate Concentrations in GW-8

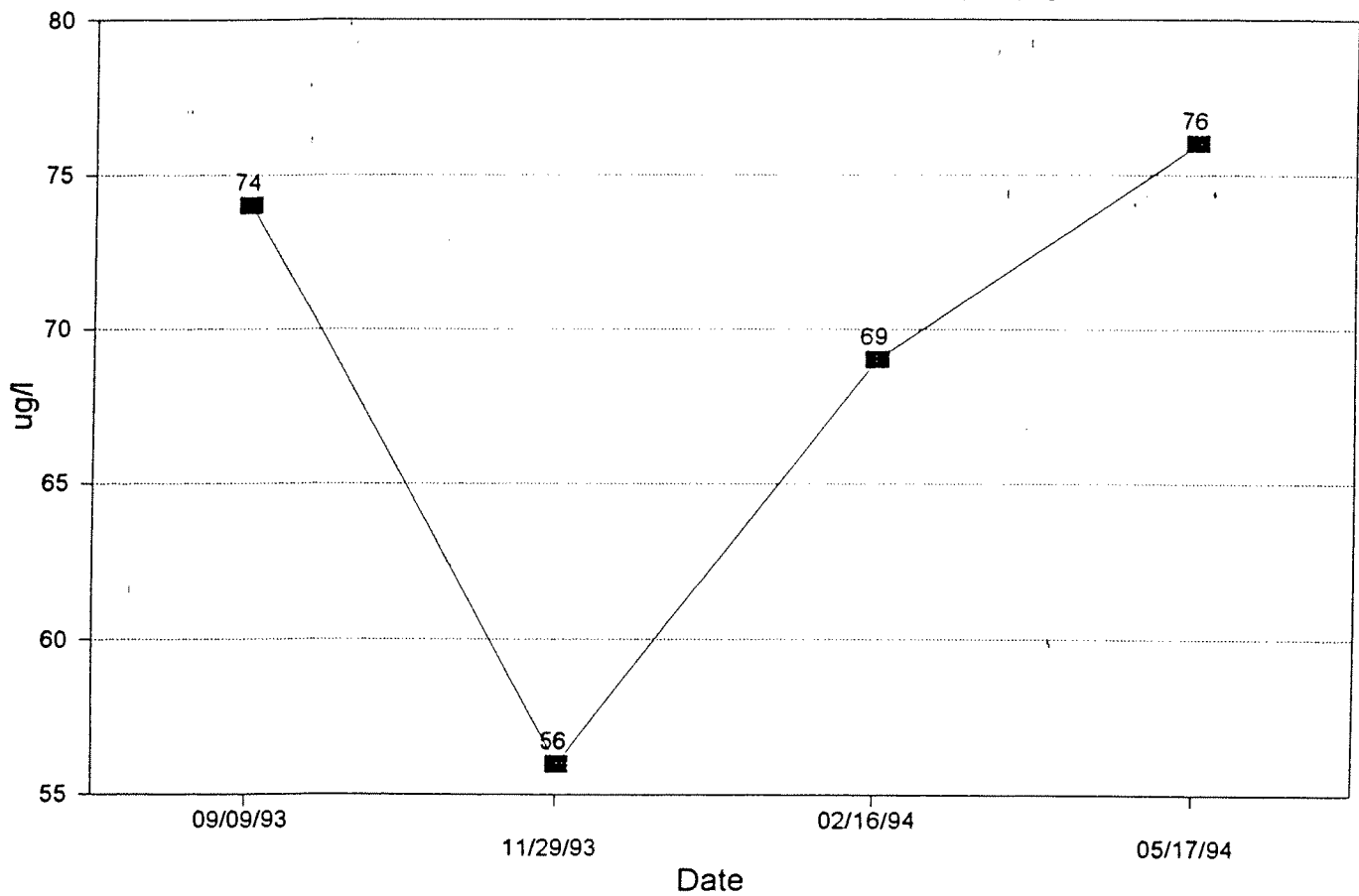


Figure 52
Historic TCE Concentrations in GW-8

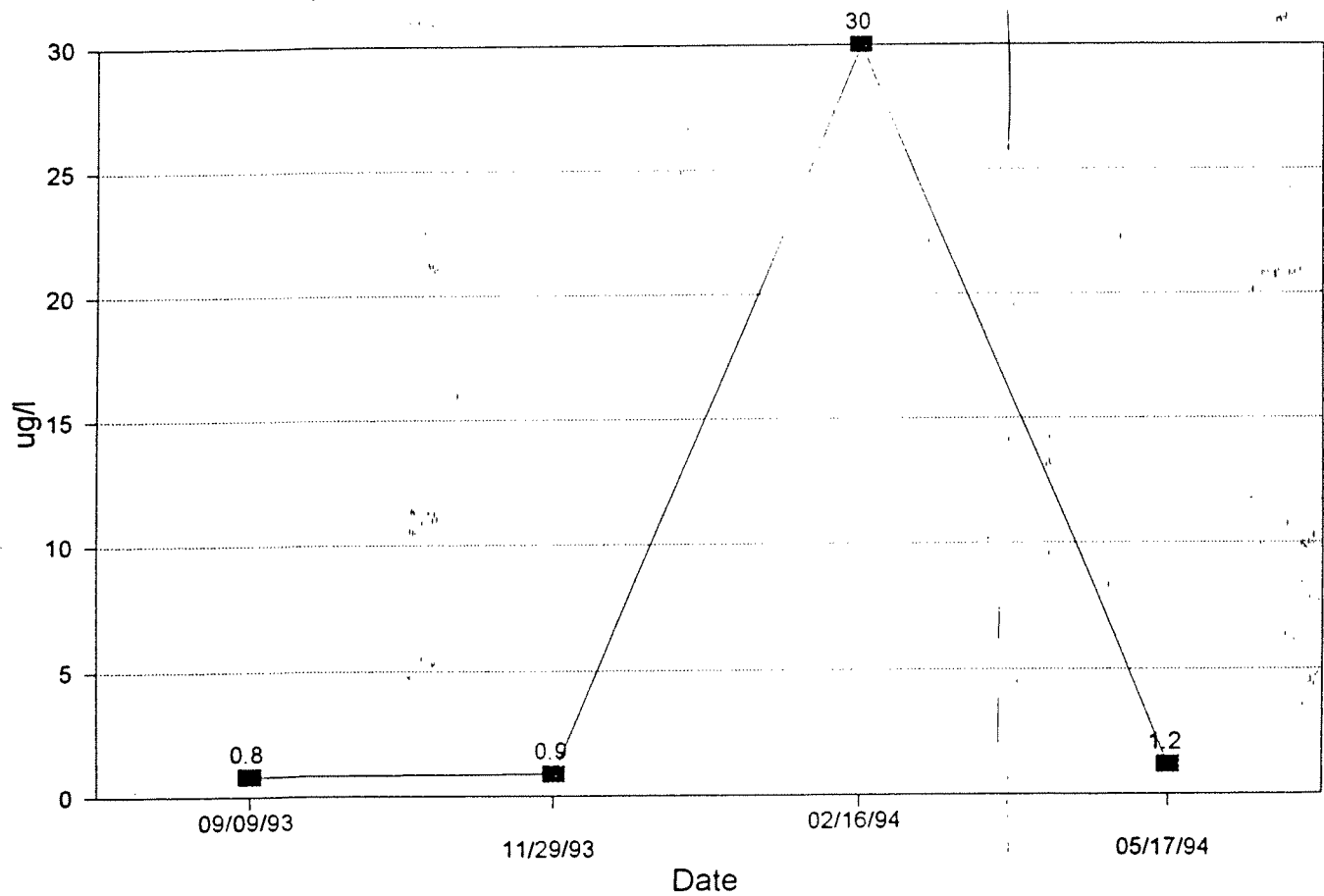


Figure 53
Historic PCE Concentrations in GW-8

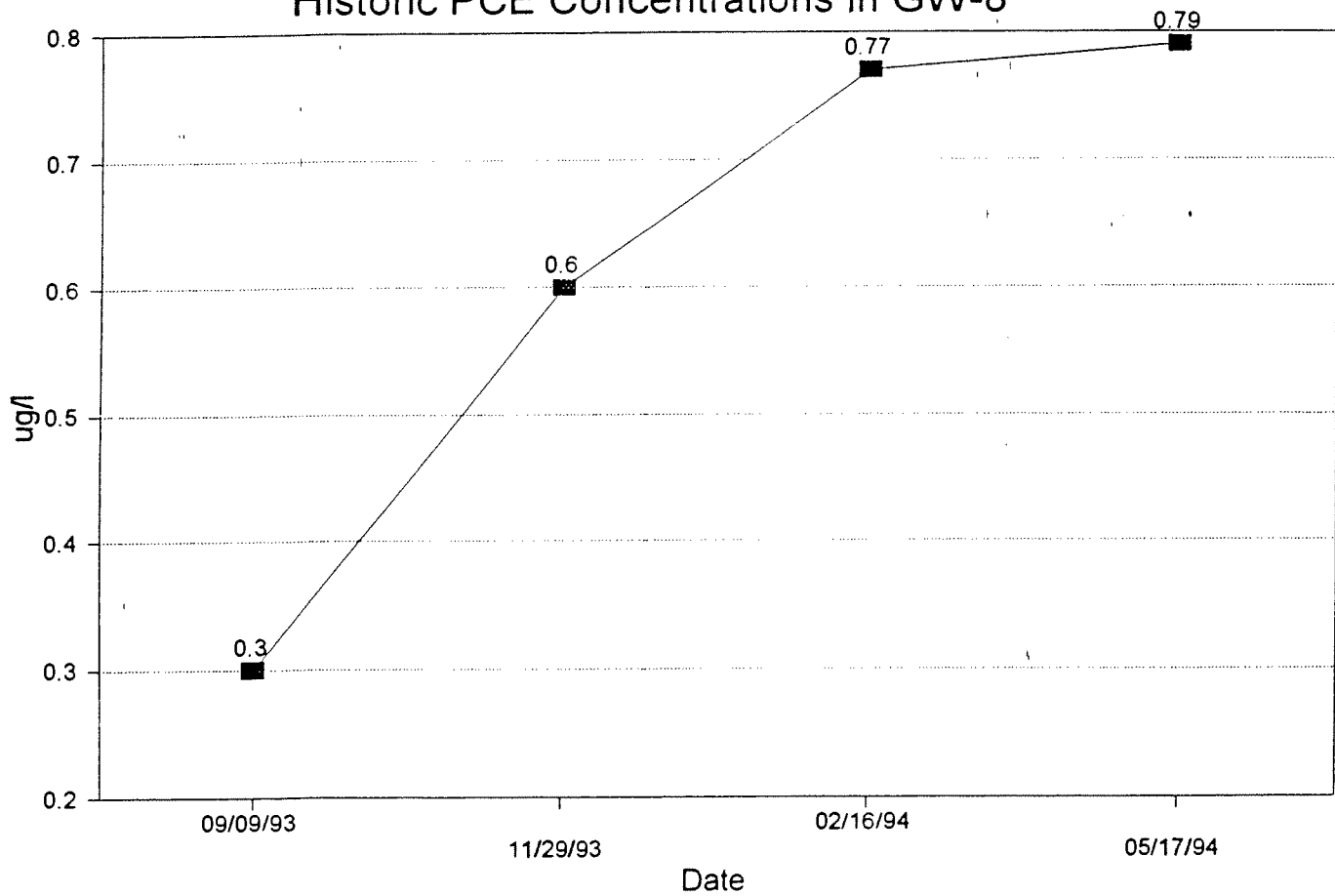


Figure 54
Historic CIS-1,2-DCE Concentrations in GW-8

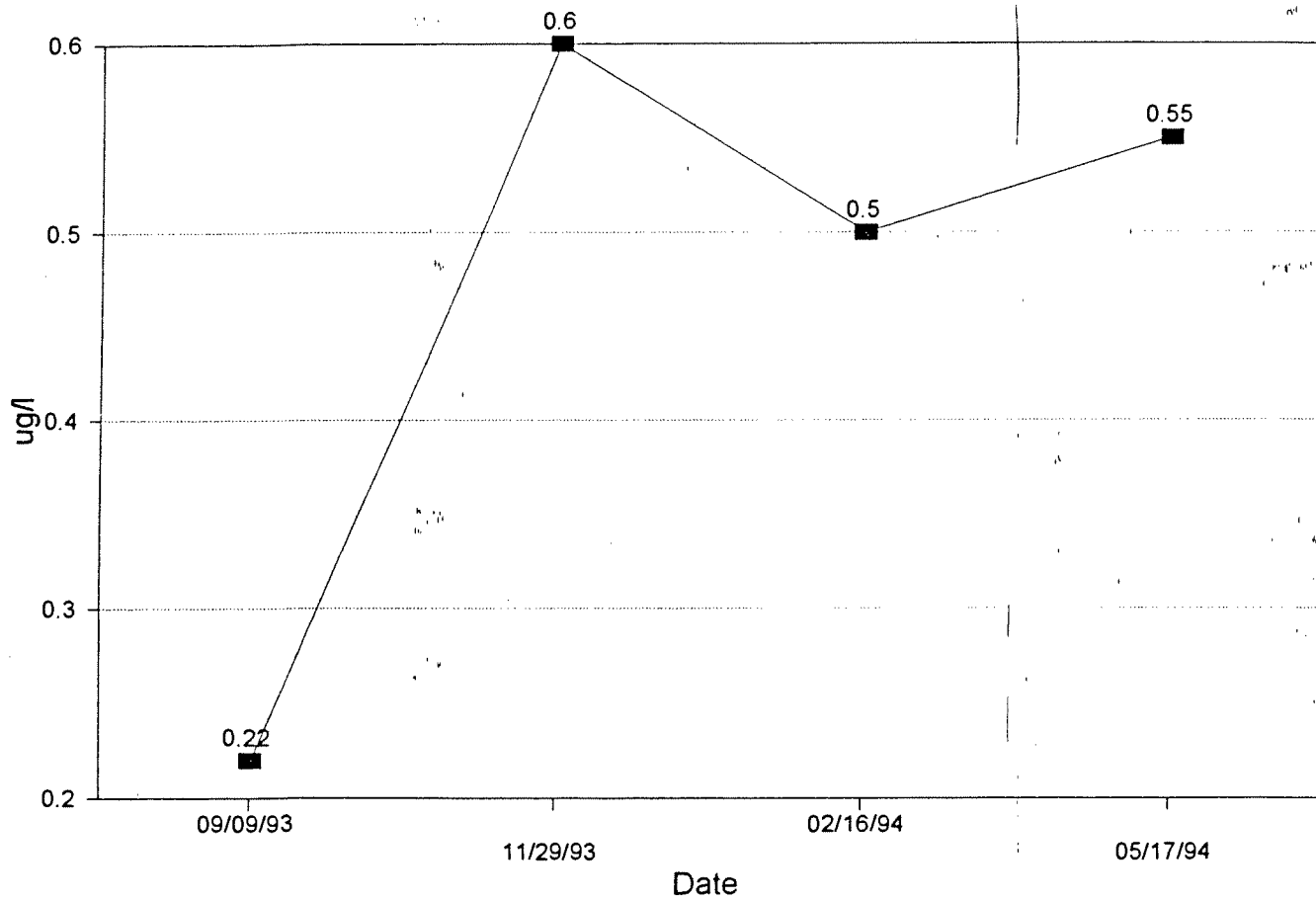


Figure 55
Historic Groundwater Elevations in GW-9

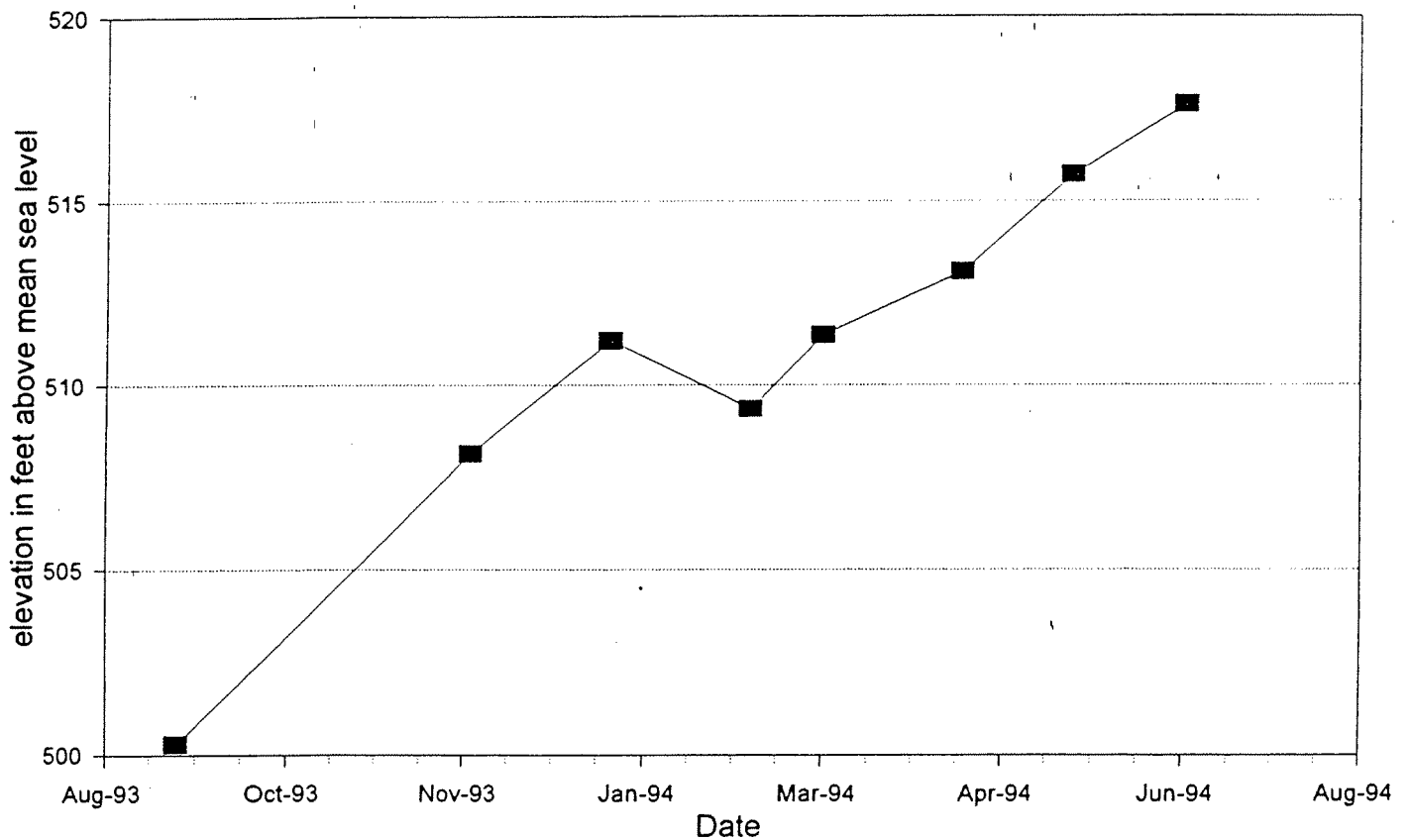


Figure 56
Historic Nitrate Concentrations in GW-9

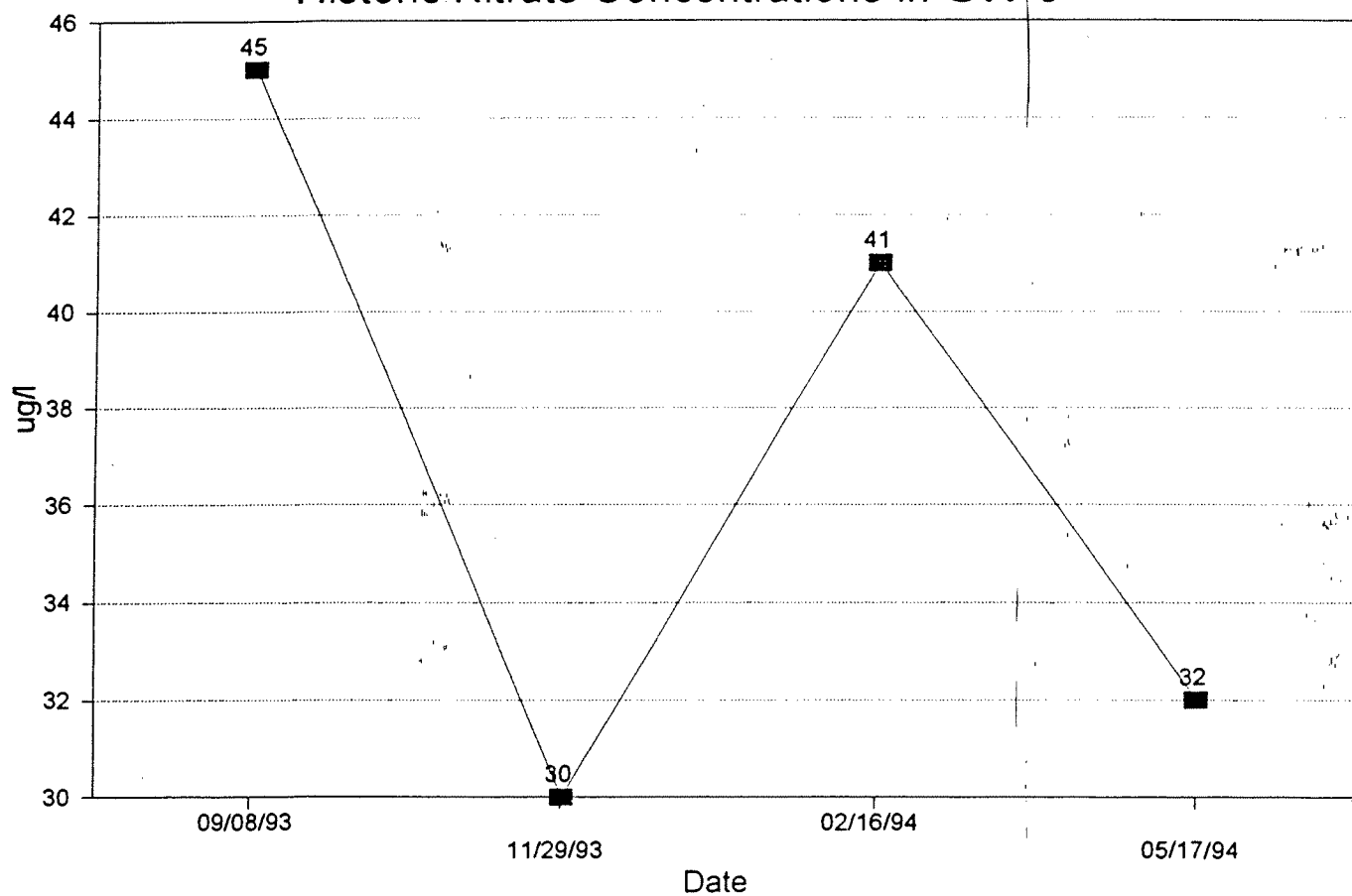


Figure 57
Historic TCE Concentrations in GW-9

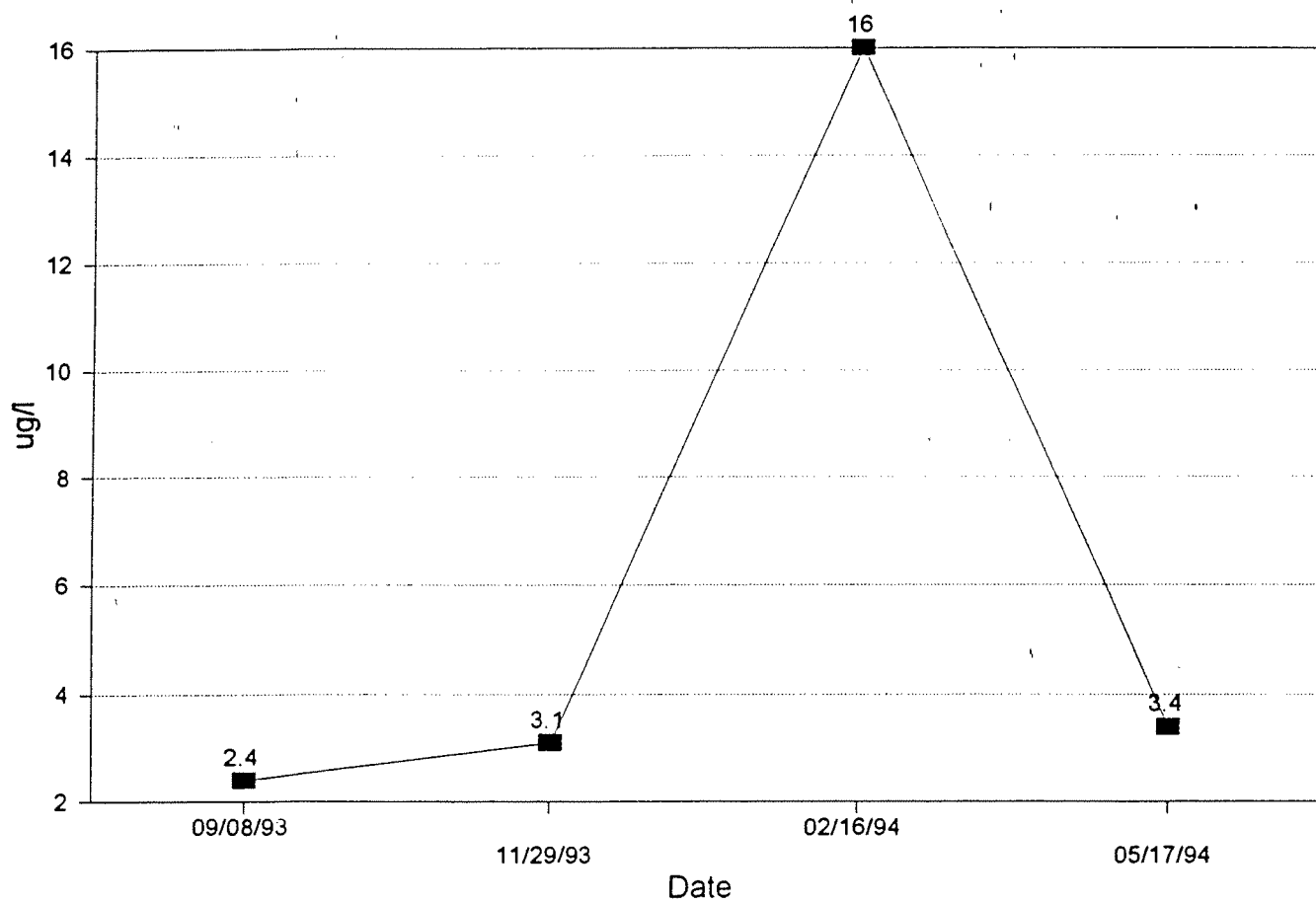


Figure 58
Historic PCE Concentrations in GW-9

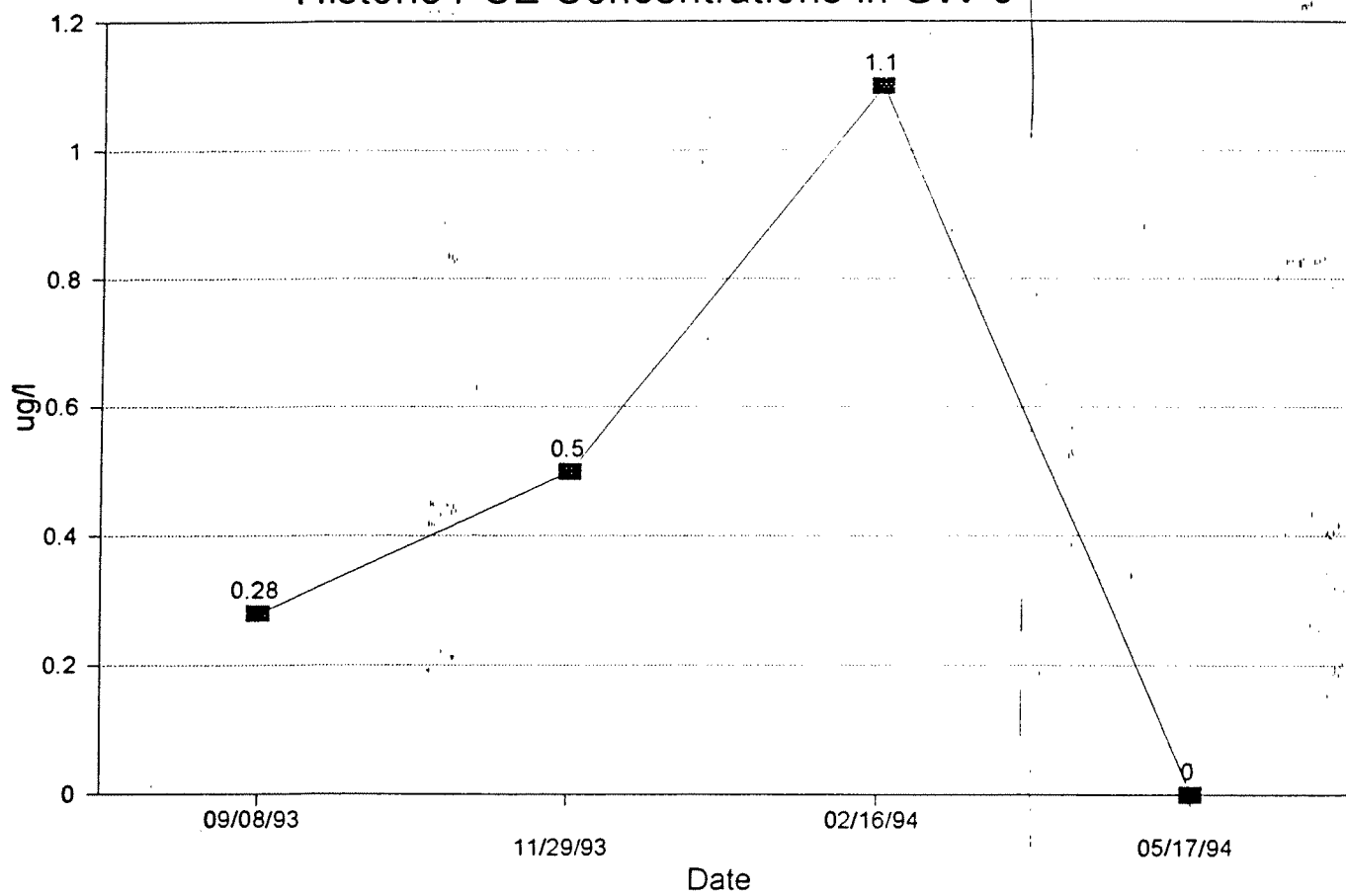


Figure 59
Historic Groundwater Elevations in GW-10

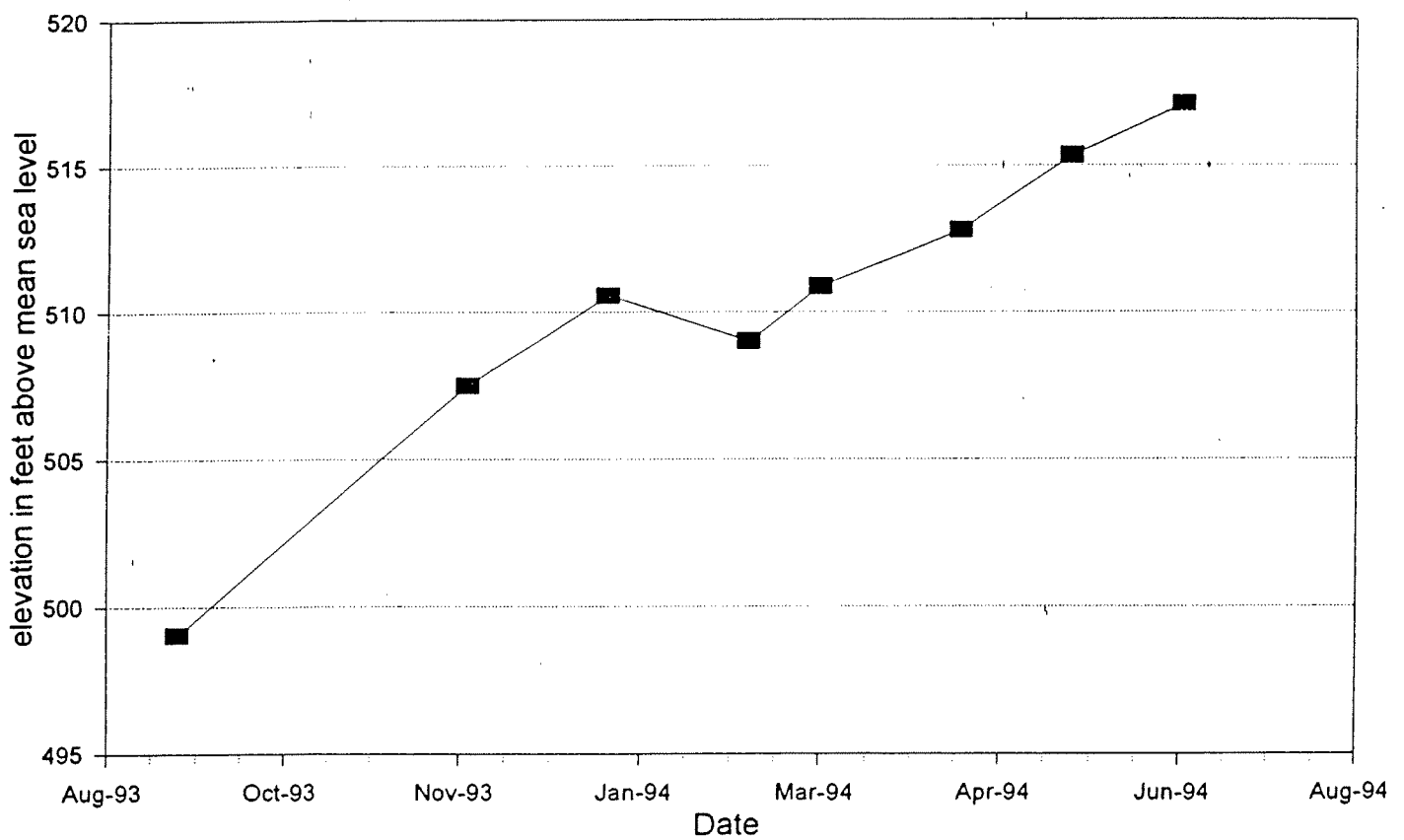


Figure 60

Historic Nitrate Concentrations in GW-10

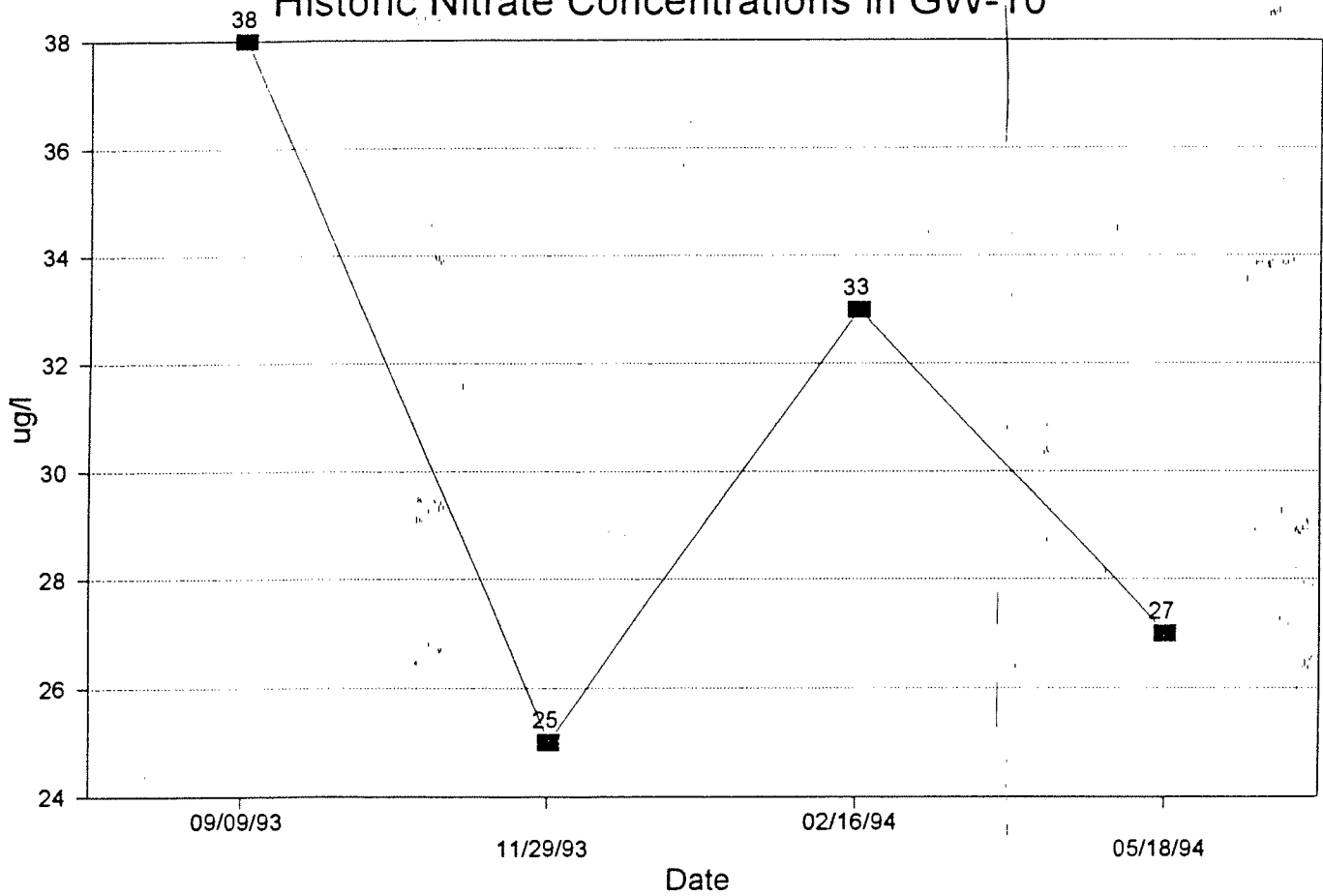
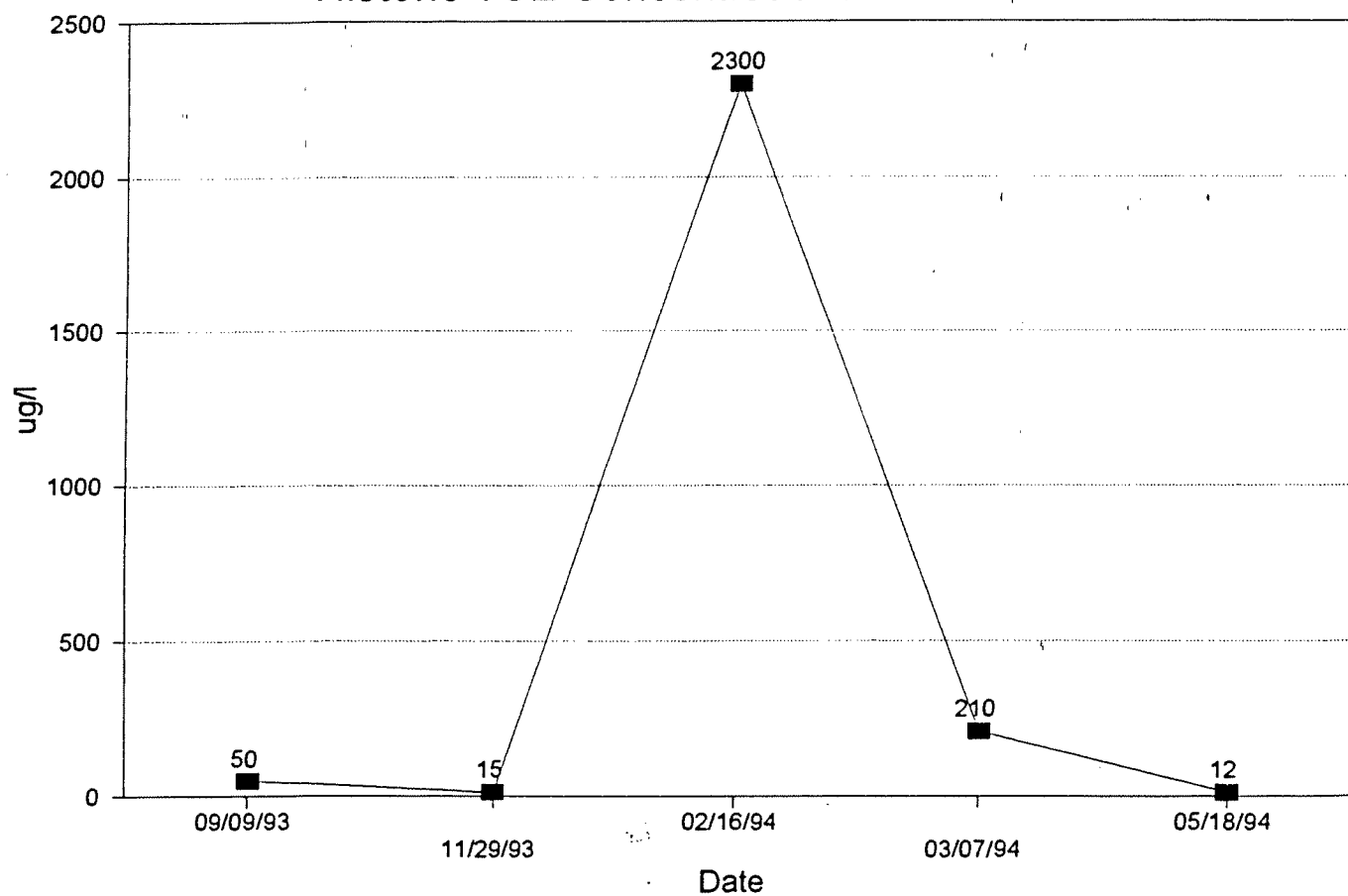


Figure 61

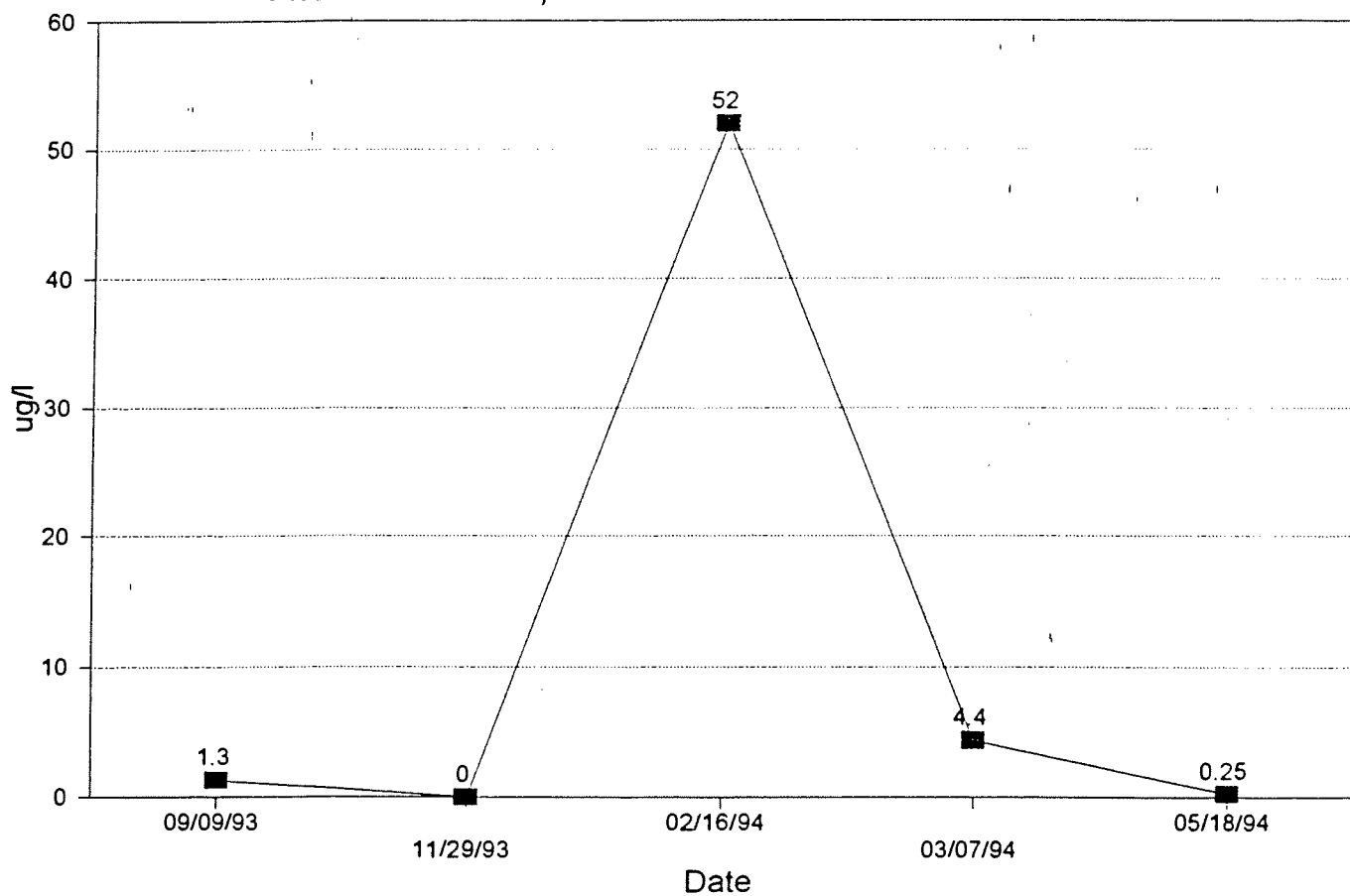
Historic TCE Concentrations in GW-10

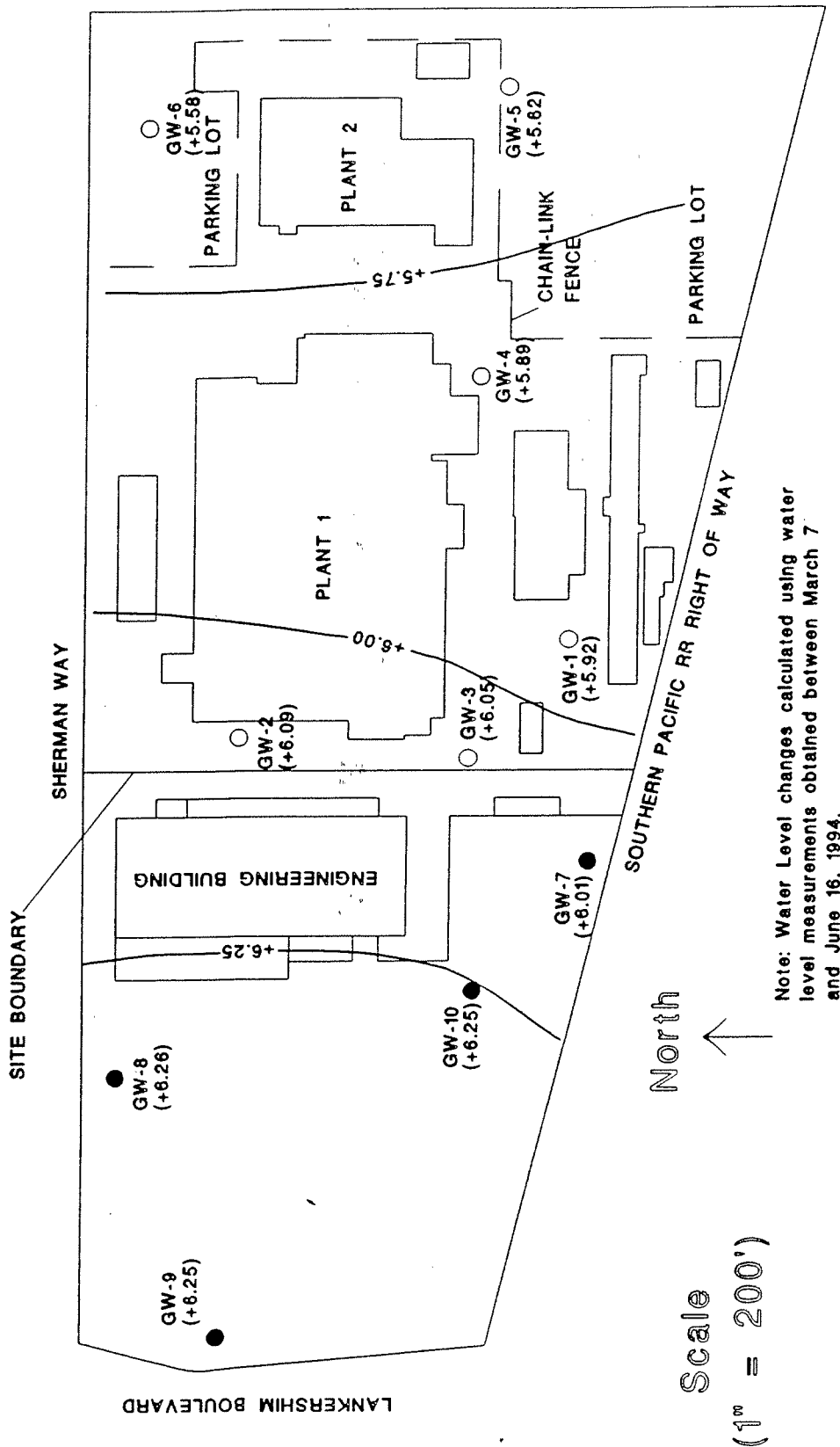


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Figure 62

Historic CIS-1,2-DCE Concentrations in GW-10





Legend:

- Denotes approximate location of on-site monitoring well.
- Denotes approximate location of off-site monitoring well.
- (+6.25) Denotes change in groundwater elevation in feet.
- +6.25 Denotes change in groundwater elevation contour in feet. Queried where uncertain.

**ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility**

**WATER LEVEL CHANGE (RECOVERY)
(2ND QUARTER 1994)**

FIGURE 63

File Name: AS7-A57GECM2

SEACOR

APPENDIX A
STANDARD OPERATING PROCEDURES

GROUNDWATER LEVEL MEASUREMENT PROTOCOL

Prior to purging and sampling of groundwater monitoring wells, a Environmental Instruments Company (EI) water level meter was used to measure the depth to the water surface inside each monitoring well. Water level measurements were collected from the wells in the shortest time-frame possible, in order to obtain an accurate representation of the groundwater potentiometric surface. Initially, the meter was lowered down the well until the water surface within the monitoring well was reached. The depth to the water surface was measured from a designated point on the well casing to the nearest 0.01 foot and recorded on a standard *SEACOR* form. This procedure was repeated a second time to confirm the accuracy of the first measurement. The water level meter probe and associated measuring tape were washed in a solution of warm tap water and trisodium phosphate (TSP) and rinsed with de-ionized water prior to, and between monitoring wells to reduce the possibility of cross-contamination.

GROUNDWATER PURGING AND SAMPLING PROTOCOL

The bladder pump intake was set at a depth of approximately 7 feet below static water level in each well. The inflatable packer, located directly beneath the pump intake, was used to isolate the upper 8 to 9 feet of water in the well during sampling. An average pumping rate of 1,800 milliliters per minute (ml/min) was used to purge approximately 3 to 5 well casing volumes of stagnant water from each well prior to sampling. Measurements of pH, temperature, and electric conductivity were taken during purging and recorded on a standard *SEACOR* form. Once these physical parameters stabilized, this was an indication that water in the monitoring well was representative of water from the formation, and a groundwater sample was collected. During sample collection, the pumping rate was lowered to approximately 100 ml/min.

APPENDIX B
LABORATORY RESULTS

BC Analytical

ANALYTICAL REPORT

801 Western Avenue
San Jose, CA 95128
Phone: 408/247-5737
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LOG NO: G94-05-236

Received: 17 MAY 94

Mailed : 01 JUN 94

Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Purchase Order: MSA92266

Requisition: ASN 007
Project: NORTH HOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES					DATE SAMPLED
05-236-1	GW-1					16 MAY 94
05-236-2	GW-6					16 MAY 94
05-236-3	GW-5					17 MAY 94
05-236-4	GW-9					17 MAY 94
05-236-5	GW-4					17 MAY 94
PARAMETER	05-236-1	05-236-2	05-236-3	05-236-4	05-236-5	
Ammonia (350.1), mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Chloride (300.0/9056), mg/L	26	35	28	22	30	
Nitrate (300.0/9056), mg/L	37	69	50	32	64	
Nitrite (300.0/9056), mg/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Sulfate (300.0/9056), mg/L	65	59	63	66	57	
Turbidity (180.1), NTU	3.9	37	3.9	2.9	6.0	
Dissolved Solids (160.1), mg/L	430	490	430	360	420	
Alkalinity (310.1)						
Carbonate Alk (as CaCO3), mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alk (as CaCO3), mg/L	210	220	200	190	240	
Hydroxide Alk (as CaCO3), mg/L	<1	<1	<1	<1	<1	
Total Alkalinity (as CaCO3), mg/L	210	220	200	190	240	
Calcium (6010/200.7), mg/L	92	110	90	85	91	
Magnesium (6010/200.7), mg/L	19	24	19	18	20	
Potassium (6010/200.7), mg/L	3.9	4.3	3.4	4.1	3.8	
Sodium (6010/200.7), mg/L	26	25	22	26	25	
Digestion (3010), Date	05/23/94	05/23/94	05/23/94	05/23/94	05/23/94	

B C Analytical

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
05-236-1	GW-1	16 MAY 94
05-236-2	GW-6	16 MAY 94
05-236-3	GW-5	17 MAY 94
05-236-4	GW-9	17 MAY 94
05-236-5	GW-4	17 MAY 94

PARAMETER	05-236-1	05-236-2	05-236-3	05-236-4	05-236-5
TPH (8015M)					
Date Analyzed	05/24/94	05/24/94	05/24/94	05/24/94	05/24/94
Date Extracted	05/23/94	05/23/94	05/23/94	05/23/94	05/23/94
Dilution Factor, Times	1	1	1	1	1
TPH (total), mg/L	<1	<1	<1	<1	<1
Other TPH (8015M)	---	---	---	---	---

B C Analytical

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES					DATE SAMPLED
05-236-1	GW-1					16 MAY 94
05-236-2	GW-6					16 MAY 94
05-236-3	GW-5					17 MAY 94
05-236-4	GW-9					17 MAY 94
05-236-5	GW-4					17 MAY 94
PARAMETER	05-236-1	05-236-2	05-236-3	05-236-4	05-236-5	
E524.2/VOC						
Date Analyzed	05/19/94	05/19/94	05/19/94	05/19/94	05/19/94	
Dilution Factor, Times	1	1	1	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1-Dichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1-Dichloroethene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,1-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2,3-Trichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2-Dibromoethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2-Dichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
1,3-Dichloropropane, ug/L	<0.2	<0.2	<0.2	0.48	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	

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Project: NORTH HOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
05-236-1	GW-1	16 MAY 94
05-236-2	GW-6	16 MAY 94
05-236-3	GW-5	17 MAY 94
05-236-4	GW-9	17 MAY 94
05-236-5	GW-4	17 MAY 94

PARAMETER	05-236-1	05-236-2	05-236-3	05-236-4	05-236-5
2,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
2-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
4-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromochloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromomethane, ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromoform, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform, ug/L	<0.2	0.28	0.26	<0.2	0.25
Chloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromochloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromomethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Freon 113, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Hexachlorobutadiene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Isopropylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Methylene chloride, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
N-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
N-Propylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2

B C Analytical

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Project: NORTH HOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES					DATE SAMPLED
05-236-1	GW-1					16 MAY 94
05-236-2	GW-6					16 MAY 94
05-236-3	GW-5					17 MAY 94
05-236-4	GW-9					17 MAY 94
05-236-5	GW-4					17 MAY 94
PARAMETER	05-236-1	05-236-2	05-236-3	05-236-4	05-236-5	
Naphthalene, ug/L	<1	<1	<1	<1	<1	
Styrene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Trichloroethene, ug/L	3.5	0.95	0.77	3.4	0.63	
Trichlorofluoromethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Toluene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Tetrachloroethene, ug/L	1.4	0.81	1.0	<0.2	0.22	
Vinyl chloride, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	1.1	0.33	0.94	<0.2	<0.2	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
o-Xylene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
sec-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Other E524.2/VOC	---	---	---	---	---	

B C Analytical

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LOG NO: G94-05-236

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Purchase Order: MSA92266

Requisition: ASN 007
Project: NORTHHOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 6

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
05-236-6	GW-8	17 MAY 94
PARAMETER	05-236-6	
Ammonia (350.1), mg/L	<0.1	
Chloride (300.0/9056), mg/L	38	
Nitrate (300.0/9056), mg/L	76	
Nitrite (300.0/9056), mg/L	<0.2	
Sulfate (300.0/9056), mg/L	62	
Turbidity (180.1), NTU	8.2	
Dissolved Solids (160.1), mg/L	510	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	240	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	240	
Calcium (6010/200.7), mg/L	98	
Magnesium (6010/200.7), mg/L	21	
Potassium (6010/200.7), mg/L	3.9	
Sodium (6010/200.7), mg/L	25	
Digestion (3010), Date	05/23/94	
TPH (8015M)		
Date Analyzed	05/24/94	
Date Extracted	05/23/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

BC Analytical

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Project: NORTH HOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 7

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
05-236-6	GW-8	17 MAY 94
PARAMETER	05-236-6	
E524.2/VOC		
Date Analyzed	05/24/94	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.2	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

B C Analytical

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REPORT OF ANALYTICAL RESULTS

Page 8

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
05-236-6	GW-8	17 MAY 94
PARAMETER	05-236-6	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.2	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.31	
Chloromethane, ug/L	<0.2	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	1.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	0.79	
Vinyl chloride, ug/L	<0.2	
cis-1,2-Dichloroethene, ug/L	0.55	

BC Analytical

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LOG NO: G94-05-236

Received: 17 MAY 94
Mailed : 01 JUN 94

Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Purchase Order: MSA92266

Requisition: ASN 007
Project: NORTH HOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 9

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
05-236-6	GW-8	17 MAY 94
PARAMETER	05-236-6	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	

B C Analytical

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LOG NO: G94-05-236

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Project: NORTHHOLLYWOOD

REPORT OF ANALYTICAL RESULTS

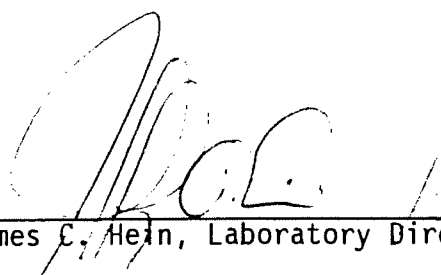
Page 10

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
05-236-7	Trip Blank	
PARAMETER	05-236-7	
Sample Held, Not Analyzed	HOLD	

Amended report.

The results for sample G9405236-2 (GW-6) method 524.2 are corrected. Chloroform, trichloroethene, tetrachloroethene, and cis-1,2-dichloroethene were quantified.

-- H. Cochran 6/16/94


James C. Hein, Laboratory Director

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LOG NO: G94-05-247

Received: 18 MAY 94

Mailed: JUN 8, 1994

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
05-247-1	GW-10	18 MAY 94			
05-247-2	GW-7	18 MAY 94			
05-247-3	GW-3	18 MAY 94			
05-247-4	GW-2	18 MAY 94			
PARAMETER	05-247-1	05-247-2	05-247-3	05-247-4	
Fluoride (350.1), mg/L	0.31	<0.1	<0.1	<0.1	
Chloride (300.0/9056), mg/L	20	26	31	35	
Nitrate (300.0/9056), mg/L	27	44	67	68	
Nitrite (300.0/9056), mg/L	<0.2	<0.2	<0.2	<0.2	
Sulfate (300.0/9056), mg/L	64	62	57	61	
Turbidity (180.1), NTU	0.52	5.1	160	180	
Dissolved Solids (160.1), mg/L	340	350	360	420	
Alkalinity (310.1)					
Carbonate Alk (as CaCO ₃), mg/L	<1	<1	<1	<1	
Bicarbonate Alk (as CaCO ₃), mg/L	190	190	190	240	
Hydroxide Alk (as CaCO ₃), mg/L	<1	<1	<1	<1	
Total Alkalinity (as CaCO ₃), mg/L	190	190	190	240	
Calcium (6010/200.7), mg/L	77	80	98	100	
Magnesium (6010/200.7), mg/L	16	17	20	22	
Potassium (6010/200.7), mg/L	3.8	3.6	4.6	4.2	
Sodium (6010/200.7), mg/L	27	27	26	26	
Digestion (3010), Date	05/23/94	05/23/94	05/23/94	05/23/94	

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Project: NORTH HOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
05-247-1	GW-10	18 MAY 94			
05-247-2	GW-7	18 MAY 94			
05-247-3	GW-3	18 MAY 94			
05-247-4	GW-2	18 MAY 94			
PARAMETER	05-247-1	05-247-2	05-247-3	05-247-4	
H (8015M)					
Date Analyzed	05/24/94	05/24/94	05/24/94	05/24/94	
Date Extracted	05/23/94	05/23/94	05/23/94	05/23/94	
Dilution Factor, Times	1	1	1	1	
TPH (total), mg/L	<1	<1	<1	<1	
Other TPH (8015M)	---	---	---	---	

B C Analytical

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LOG NO: G94-05-247

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
05-247-1	GW-10	18 MAY 94			
05-247-2	GW-7	18 MAY 94			
05-247-3	GW-3	18 MAY 94			
05-247-4	GW-2	18 MAY 94			
PARAMETER	05-247-1	05-247-2	05-247-3	05-247-4	
524.2/VOC					
Date Analyzed	05/24/94	05/24/94	05/24/94	05/24/94	
Dilution Factor, Times	1	1	1	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,1-Dichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,1-Dichloroethene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,1-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2,3-Trichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5	<0.5	<0.5	
1,2-Dibromoethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2-Dichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
1,3-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
2,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	

B C Analytical

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LOG NO: G94-05-247

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Project: NORTHHOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
05-247-1	GW-10	18 MAY 94			
05-247-2	GW-7	18 MAY 94			
05-247-3	GW-3	18 MAY 94			
05-247-4	GW-2	18 MAY 94			
PARAMETER	05-247-1	05-247-2	05-247-3	05-247-4	
1-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	<0.2	
4-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromochloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromodichloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromomethane, ug/L	<0.5	<0.5	<0.5	<0.5	
Benzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Bromoform, ug/L	<0.2	<0.2	<0.2	<0.2	
Chlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Carbon Tetrachloride, ug/L	<0.2	<0.2	<0.2	<0.2	
Chloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Chloroform, ug/L	0.18	<0.2	0.31	0.33	
Chloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Dibromochloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Dibromomethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Ethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Freon 113, ug/L	<0.2	<0.2	<0.2	<0.2	
Hexachlorobutadiene, ug/L	<0.2	<0.2	<0.2	<0.2	
Isopropylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Methylene chloride, ug/L	<0.2	<0.2	<0.2	<0.2	
N-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
N-Propylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Naphthalene, ug/L	<1	<1	<1.0	<1	
Styrene, ug/L	<0.2	<0.2	<0.2	<0.2	

BC Analytical

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LOG NO: G94-05-247

Received: 18 MAY 94

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Purchase Order: MSA-92266

Project: NORTH HOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
05-247-1	GW-10	18 MAY 94			
05-247-2	GW-7	18 MAY 94			
05-247-3	GW-3	18 MAY 94			
05-247-4	GW-2	18 MAY 94			
PARAMETER	05-247-1	05-247-2	05-247-3	05-247-4	
Trichloroethene, ug/L	12	0.36	6.0	9.6	
Trichlorofluoromethane, ug/L	<0.2	<0.2	<0.2	<0.2	
Toluene, ug/L	<0.2	0.15	<0.2	<0.2	
Tetrachloroethene, ug/L	1.0	<0.2	0.71	0.99	
Vinyl chloride, ug/L	<0.2	<0.2	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	0.25	<0.2	<0.2	0.49	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	<0.2	<0.2	<0.2	
o-Xylene, ug/L	<0.2	<0.2	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	<0.2	<0.2	<0.2	
sec-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	
Other E524.2/VOC	---	---	---	---	

BC Analytical

801 Western Avenue
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LOG NO: G94-05-247

Received: 18 MAY 94

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Purchase Order: MSA-92266

Project: NORTHHOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 6

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
05-247-5	Equipment Blank	18 MAY 94
PARAMETER	05-247-5	
Ammonia (350.1), mg/L	<0.1	
Chloride (300.0/9056), mg/L	<0.05	
Nitrate (300.0/9056), mg/L	<0.1	
trite (300.0/9056), mg/L	<0.1	
sulfate (300.0/9056), mg/L	<0.1	
Turbidity (180.1), NTU	0.18	
Dissolved Solids (160.1), mg/L	<10	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	<10	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	<10	
Calcium (6010/200.7), mg/L	<0.5	
Magnesium (6010/200.7), mg/L	<0.1	
Potassium (6010/200.7), mg/L	<0.5	
Sodium (6010/200.7), mg/L	<0.5	
Digestion (3010), Date	05/23/94	
TPH (8015M)		
Date Analyzed	05/24/94	
Date Extracted	05/23/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

B C Analytical

Western Avenue
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LOG NO: G94-05-247

Received: 18 MAY 94

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Purchase Order: MSA-92266

Project: NORTHHOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 7

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
05-247-5	Equipment Blank	18 MAY 94

PARAMETER	05-247-5
-----------	----------

E524.2/VOC

Date Analyzed	05/24/94
Dilution Factor, Times	1
1,1,1,2-Tetrachloroethane, ug/L	<0.2
1,1,1-Trichloroethane, ug/L	<0.2
1,1,2,2-Tetrachloroethane, ug/L	<0.2
1,1,2-Trichloroethane, ug/L	<0.2
1,1-Dichloroethane, ug/L	<0.2
1,1-Dichloroethene, ug/L	<0.2
1,1-Dichloropropene, ug/L	<0.2
1,2,3-Trichlorobenzene, ug/L	<0.2
1,2,3-Trichloropropane, ug/L	<0.2
1,2,4-Trichlorobenzene, ug/L	<0.2
1,2,4-Trimethylbenzene, ug/L	<0.2
1,2-Dibromo-3-chloropropane, ug/L	<0.5
1,2-Dibromoethane, ug/L	<0.2
1,2-Dichloroethane, ug/L	<0.2
1,2-Dichlorobenzene, ug/L	<0.2
1,2-Dichloropropane, ug/L	<0.2
1,3,5-Trimethylbenzene, ug/L	<0.2
1,3-Dichlorobenzene, ug/L	<0.2
1,3-Dichloropropane, ug/L	<0.2
1,4-Dichlorobenzene, ug/L	<0.2
2,2-Dichloropropane, ug/L	<0.2
2-Chlorotoluene, ug/L	<0.2
4-Chlorotoluene, ug/L	<0.2
Bromobenzene, ug/L	<0.2

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LOG NO: G94-05-247

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Purchase Order: MSA-92266

Project: NORTH HOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 8

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
05-247-5	Equipment Blank	18 MAY 94
PARAMETER	05-247-5	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.2	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.54	
Chloromethane, ug/L	<0.2	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	<0.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	<0.2	
Vinyl chloride, ug/L	<0.2	
cis-1,2-Dichloroethene, ug/L	<0.2	

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Project: NORTHHOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 9

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
05-247-5	Equipment Blank	18 MAY 94
PARAMETER	05-247-5	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	

B C Analytical

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REPORT OF ANALYTICAL RESULTS

Page 10

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
05-247-6	Trip Blank	18 MAY 94
PARAMETER	05-247-6	
E524.2/VOC		
Date Analyzed	05/24/94	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.2	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Purchase Order: MSA-92266

Project: NORTHHOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 11

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
05-247-6	Trip Blank	18 MAY 94
PARAMETER	05-247-6	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.2	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	<0.2	
Chloromethane, ug/L	<0.2	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	<0.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	<0.2	
Vinyl chloride, ug/L	<0.2	
cis-1,2-Dichloroethene, ug/L	<0.2	

BC Analytical

Western Avenue
Cale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-05-247

Received: 18 MAY 94

Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Purchase Order: MSA-92266

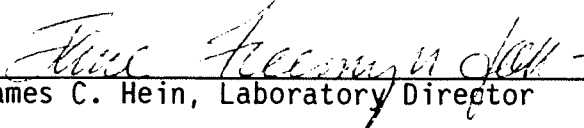
Project: NORTH HOLLYWOOD

REPORT OF ANALYTICAL RESULTS

Page 12

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
05-247-6	Trip Blank	18 MAY 94

PARAMETER	05-247-6
cis-1,3-Dichloropropene, ug/L	<0.2
m- and p-Xylene Isomers, ug/L	<0.2
o-Xylene, ug/L	<0.2
p-Isopropyl toluene, ug/L	<0.2
sec-Butylbenzene, ug/L	<0.2
trans-1,2-Dichloroethene, ug/L	<0.2
trans-1,3-Dichloropropene, ug/L	<0.2
tert-Butylbenzene, ug/L	<0.2
Other E524.2/VOC	---


James C. Hein, Laboratory Director

APPENDIX C
CHAIN OF CUSTODY DOCUMENTS

004295

BCA Log Number

957.5(1.25)

[illegible]

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil OT—Other PE—Petroleum

801 Western Avenue, Glendale, CA 91201 (818) 247-5737

801 Western Avenue, Glendale, CA 91201 (818) 247-5737

Disposal arrangements:

CHAIN OF CUSTODY RECORD

BCA Log Number **G94-0F-247**

Print name **SEACOR** Project or PO# **A0057-001-01**
 Address **3465 SACRAMENTO ST. SUITE A** Phone# **(805) 546-0455**
 City, State, Zip **ALBUQUERQUE, NM 87101** Report attention **GREG VOGEL**

Sample number	Date sampled	Time sampled	Type* See key below	Sampled by		Sample description	Number of containers	Analyses required					Remarks
								METALS	ALKALIS	NH3-N	FUEL OIL	HAZARDOUS SAMPLE SPECIAL HANDLING REQUIRED	
5-18-94	9:30 A.M.		GW			EQUIPMENT BLANK	10						
5-18-94	10:15 A.M.		GW			GW-10	10						
5-18-94	13:00 P.M.		GW			GW-7	10						
5-18-94	14:25 P.M.		GW			GW-3	10						
5-18-94	16:15 P.M.		GW			GW-2	10						
5-18-94	-		AQ			TRIP BLANK	4						

Signature		Print Name	Company	Date	Time
Inquired by <i>Bruce D. Cutting</i>		<i>Bruce B. Cutting</i>	<i>SEACOR</i>	<i>5-18-94</i>	<i>16:30 P.M.</i>
Received by <i>Susan Quinsland</i>		<i>S. ARROWSMITH</i>	<i>BC Analytical</i>	<i>5-18-94</i>	<i>16:30 P.M.</i>
Inquired by <i>004297</i>					
Received by					
Inquired by					
Received by Laboratory					

ANALYTICAL
 255 Powell Street, Emeryville, CA 94608 (510) 428-2300
 01 Western Avenue, Glendale, CA 91201 (818) 247-5737

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
 Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
 GW—Groundwater SO—Soil OT—Other PE—Petroleum

**RESULTS OF GROUNDWATER MONITORING
FIRST QUARTER 1994
ALLIEDSIGNAL AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

VOLUME I

Prepared for:
AlliedSignal AEROSPACE
2525 West 190th Street
Torrance, California 90509

Prepared by:
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

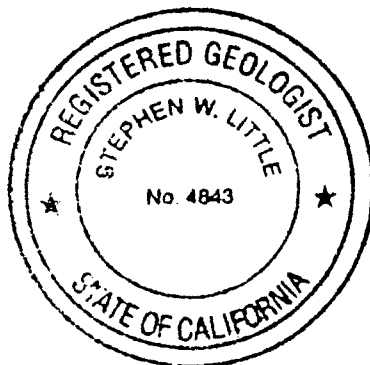
May 31, 1994
Job Number: A0057-001-01/ASN14

Prepared by:

Greg Vogelpohl
Greg Vogelpohl, P.E. *JAL*
Associate Engineer

Reviewed by:

Steve Little
Steve Little, R.G.
Principal Geologist



004298

**RESULTS OF GROUNDWATER MONITORING
FIRST QUARTER 1994
ALLIEDSIGNAL AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

May 31, 1994
Job Number: A0057-001-01/ASN14

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1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the first quarter of 1994 was conducted at the AlliedSignal AEROSPACE facility in North Hollywood, California on February 15-18 and March 7-9, 1994 in accordance with the California Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. Six on-site groundwater monitoring wells (GW-1 through GW-6) and four off-site groundwater monitoring wells (GW-7 through GW-10) were sampled during the February, 1994 monitoring event. Wells GW-2, GW-7 and GW-10 were resampled during the March, 1994 monitoring episode and analyzed only for volatile organic compounds (VOCs).

Groundwater levels in the wells have risen between 3.21 (well GW-9) and 4.99 (well GW-6) feet during the period between November 29, 1993 and March 7, 1994. Based on the water level measurements obtained on January 7, and March 7, 1994, the instantaneous groundwater flow direction was northerly beneath the eastern portion of the site and easterly beneath the central and western portions of the site. The water level measurements obtained on February 15, 1994 indicate that the groundwater flow direction beneath the site and adjacent Kaiser facility was southeasterly. However, determination of an instantaneous groundwater flow direction based on the groundwater contours in a transient system may be questionable and open to interpretation.

Consistent with regional data, nitrate was detected in the groundwater samples collected from monitoring wells GW-1 through GW-8 at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL) during the February, 1994 sampling event. The compound trichloroethene (TCE) was detected in the groundwater samples collected from wells GW-1 through GW-4 and GW-7 through GW-10 during the February, 1994 sampling event and in wells GW-2, GW-7 and GW-10 during the limited March, 1994 sampling episode at concentrations above the DHS MCL. The compound 1,1-dichloroethene (1,1-DCE) was detected in groundwater samples obtained from well GW-4 at a concentration above the DHS MCL during the February, 1994 sampling event. Carbon tetrachloride was detected in groundwater samples obtained from wells GW-4 and GW-8 at concentrations above the DHS MCL during the February, 1994 sampling event. The compound cis-1,2-dichloroethene (cis-1,2-DCE) was detected in groundwater samples obtained from wells GW-7 and GW-10 at concentrations above the DHS MCL during the February, 1994 sampling episode. All other VOCs detected in the groundwater samples collected from the six on-site and four off-site monitoring wells during the February and limited March, 1994 sampling events were present at concentrations below their respective MCLs.

Attempts were made during the February and limited March sampling events to obtain groundwater samples at uniform depths within the aquifer to allow valid correlation of analytical data between wells (inter-well evaluation). Samples were also obtained at discrete aquifer depths within the wells to evaluate trends in contaminant concentration with depth below the groundwater surface (intra-well evaluation).

During the February, 1994 sampling event, groundwater samples were obtained from wells GW-7, GW-8 and GW-10 by positioning the intake of the sampling pump at the same depth within the aquifer as in well GW-2. The depth of pump placement in wells GW-7, GW-8 and GW-10 corresponded to sampling intervals between 5 and 10 feet deeper than normal in these wells. These groundwater samples were analyzed for VOCs. The concentrations of TCE detected in groundwater samples obtained from wells GW-7, GW-8 and GW-10, the concentration of chloroform detected in groundwater samples collected from well GW-7, and the concentrations of cis-1, 2-DCE detected in groundwater samples obtained from wells GW-7 and GW-10 were above their respective MCLs. The concentrations of TCE detected at the normal sampling depths in wells GW-8 (30 $\mu\text{g}/\ell$) and GW-10 (2,300 $\mu\text{g}/\ell$) were higher than the concentration of TCE detected at the same sampling elevation in GW-2 (14 and 1,600 $\mu\text{g}/\ell$, respectively). The concentrations of TCE detected at the normal sampling interval (3,100 $\mu\text{g}/\ell$) in well GW-7 was lower than the concentration of TCE detected at the same sampling elevation as GW-2 (4,200 $\mu\text{g}/\ell$). The TCE concentrations detected in wells GW-2, GW-7 and GW-10 decreased from the February, 1994 (60, 3,100 and 2,300 $\mu\text{g}/\ell$, respectively) to the March, 1994 (15, 35 and 210 $\mu\text{g}/\ell$, respectively) sampling event in a period of three weeks.

During the March, 1994 sampling episode, groundwater samples were obtained from wells GW-2, GW-7 and GW-10 at normal, 10 and 30 feet below the normal pump position in these wells. These groundwater samples were analyzed for VOCs. The concentrations of TCE detected in groundwater samples collected from well GW-2 decreased with depth. However, the concentrations of TCE detected in groundwater samples obtained from well GW-7 increased with increasing depth within the well. The concentrations of TCE detected in groundwater samples collected from well GW-10 remained relatively consistent at lower sampling depth.

During the last three sampling events, concentrations of TCE generally increased from November, 1993 to February, 1994 but subsequently decreased in several of the wells between February and March, 1994. For example, the TCE concentrations detected in wells GW-1, GW-2, GW-4 and GW-7 through GW-10 increased between one and two orders of magnitude from the November, 1993 to the February, 1994 sampling episode, whereas the TCE concentrations in wells GW-3, GW-5 and GW-6 remained consistent during this period. Pumping of the production wells in the Tujunga and Rinaldi-Toluca well fields has increased since the January 17, 1994 earthquake. The pumping effect may account for the increase in TCE concentrations detected in wells at the subject site.

2.0 INTRODUCTION

On behalf of AlliedSignal AEROSPACE, Science & Engineering Analysis Corporation (*SEACOR*) has prepared this report presenting the results of groundwater monitoring conducted by *SEACOR* in February and March, 1994 at the AlliedSignal AEROSPACE facility located at 11600 Sherman Way in North Hollywood, California (see Figure 1). Groundwater monitoring and sampling of wells GW-1 through GW-6 at the subject site and wells GW-7 through GW-10 at the adjacent Kaiser facility (see Figure 2) was conducted in accordance with the RWQCB WIP guidelines.

Groundwater monitoring activities commenced at the site with the installation of two wells in 1987. After two monitoring events were conducted, the wells were abandoned at the request of the RWQCB. Quarterly groundwater monitoring at the site has been conducted regularly since the third quarter of 1991. Historical groundwater elevations and analytical results from the most recent and previous groundwater monitoring events are presented in Tables 6 through 27 and Figures 8 through 63.

3.0 WATER LEVEL MEASUREMENTS

During the first quarter of 1994, depth to groundwater was measured in the six on-site monitoring wells and the four off-site monitoring wells on January 7, February 15, and March 7, 1994 with an Environmental Instruments Company (EI) water level meter according to the protocol described in Appendix A. Water level data obtained on January 7, February 15, and March 7, 1994 are summarized in Table 1.

The data indicate that groundwater levels beneath the site have risen between 3.21 (well GW-9) and 4.99 (well GW-6) feet during the period between November 29, 1993 and March 7, 1994. Historic groundwater elevations are presented in Table 6.

The groundwater level measurements obtained on January 7, 1994 indicate that the instantaneous average groundwater flow direction was northerly at a gradient of 0.0031 beneath the eastern portion of the site and easterly at a gradient of 0.0027 beneath the central and western portions of the site and the Kaiser facility. Based on water level measurements obtained February 15, 1994, the instantaneous average groundwater flow direction was southeasterly at a gradient of 0.0014 beneath the site and the Kaiser facility. The groundwater level measurements obtained on March 7, 1994 indicate that the instantaneous average groundwater flow direction was northerly at a gradient of 0.0011 beneath the eastern portion of the site and easterly at a gradient of 0.016 beneath the central and western portions of the site and the Kaiser facility. Figures 3 through 5 present groundwater elevation contour maps based on the January 7, February 15 and March 7, 1994 groundwater surface elevations, respectively.

The groundwater flow direction beneath, and in the vicinity of the site, appears to be influenced by groundwater extraction from aeration wells and North Hollywood and Rinaldi-Toluca well fields located south and northwest of the subject site, respectively (Remedial Investigation Report for Groundwater Contamination in the San Fernando Valley - Volume 1, James M. Montgomery, December 1992). Although groundwater elevation contour maps have been prepared based on groundwater elevations measured at the site, the calculated groundwater flow direction(s) may not be accurate or representative due to the influence of regional pumping. Under transient conditions (regional pumping), groundwater pathlines and streamlines are not coincident, therefore, groundwater flow must be determined by tracking the movement of individual groundwater particles.

4.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater monitoring wells GW-1 through GW-10 were purged and sampled on February 15-18, 1994 according to the protocol described in Appendix A. Prior to purging, the bladder pump intakes in the wells were placed approximately 8-10 feet below the top of the screened intervals and the packers were inflated. This enabled the upper 8 to 10 feet of water below the top of the screened interval in the wells to be isolated during sampling. Based on the well construction details, the static water level within wells GW-1 through GW-6, GW-7 and GW-10 were between 2.59 (GW-10) and 19.38 (GW-5) feet above the screened interval.

On February 17, 1994, groundwater monitoring wells GW-7, GW-8 and GW-10 were purged and sampled according to the protocol described in Appendix A. Prior to purging, the bladder pump intakes in these wells were placed at approximately the same sampling interval as well GW-2. This corresponded to sampling intervals between 5 and 10 feet deeper than normal in these wells.

On March 7-9, 1994, groundwater monitoring wells GW-2, GW-7 and GW-10 were purged and sampled according to the protocol described in Appendix A. These wells were sampled at their normal sampling depths and subsequently at 10 and 30 feet below their normal sampling depths by lowering the bladder pump intakes in these wells to the desired sampling intervals.

All groundwater analyses were conducted by BC Analytical (BCA) in Glendale, California. For Quality Assurance/Quality Control (QA/QC) purposes, a field blank and a trip blank sample were collected on February 15-18, 1994. The primary groundwater samples obtained from monitoring wells GW-1 through GW-10 on February 15-18, 1994 were delivered to BCA in Glendale and analyzed for the following:

- Method 524.2 - Volatile organics;
- Method 8015M - Total petroleum hydrocarbons;
- Method 300.0-L - Sulfates, chlorides;
- Method 310.1-L - Alkalinity - total, hydroxyl, carbonate, bicarbonate;
- Method 6010-L - Calcium, magnesium, potassium, sodium;
- Method 160.1 and 180.1 - Total dissolved solids and turbidity;
- Method 300.0-N - Nitrate and nitrite;
- Method 350.1-L - Ammonia nitrogen

All the groundwater samples collected from uniform aquifer depths in monitoring wells GW-7, GW-8 and GW-10 on February 17, 1994 and all the depth-specific groundwater samples obtained from monitoring wells GW-2, GW-7 and GW-10 on March 7-9, 1994 were delivered to BCA in Glendale and analyzed only for VOCs in accordance with EPA Test Method 524.2.

All samples were immediately placed on ice following collection. Individual samples were collected in pre-cleaned, analysis-specific containers supplied by the laboratory with the appropriate preservative and clearly marked and dated for identification. Samples were securely packed and delivered to the laboratory within 24 hours via courier. All samples were preserved and stored for analysis no longer than the maximum allowable holding time. The following table presents the appropriate sample containers, holding time, container size and preservative for each analytical method used in this project.

TABLE 4.1 - SAMPLING GUIDE			
ANALYSIS	HOLDING TIME	CONTAINER SIZE	PRESERVATIVE
Volatile Organics-EPA Test Method 524.2	14 days	2 40 ml (glass) with septum	Cool, No HS, HCL
Total Petroleum Hydrocarbons-EPA Test Method 8015M	14 days	4 oz (amber glass) with septum	Cool, No HS, HCL
Sulfates & Chlorides-EPA Test Method 300.0	28 days	4 oz (plastic)	Cool
Alkalinity (total, hydroxyl, carbonate, bicarbonate)-EPA Test Method 310.1	14 Days	4 oz (plastic)	Cool
Calcium, Magnesium, Potassium, Sodium-EPA Test Method 6010	6 months	16 oz (plastic)	Cool, HNO ₃
Total Dissolved Solids-EPA Test Method 160.1	7 days	16 oz (plastic)	Cool
Turbidity-EPA Test Method 180.1	2 days	4 oz (plastic)	Cool
Nitrate & Nitrite-EPA Test Method 300.0	48 hours	4 oz (plastic)	Cool
Ammonia Nitrogen-EPA Test Method 350.1	28 days	4 oz (plastic)	Cool, H ₂ SO ₄

Note: HS - Headspace
 HCL - Hydrochloric Acid
 H₂SO₄ - Sulfuric Acid
 HNO₃ - Nitric Acid

Laboratory reports and chain of custody documents for this groundwater monitoring event are presented in Volume 2, Appendices A and B, respectively.

5.0 DATA QUALITY ASSURANCE/QUALITY CONTROL

BCA located in Glendale, California performed all the laboratory analysis for the first quarter of 1994. BCA followed the details of the data reporting process outlined in the Laboratory Requirements for Data Validation (EPA Document Control Number 9QA-07-90) and the RWQCB Quality Assurance/Quality Control Guidance Document for Well Investigation Program - San Gabriel and San Fernando Basins.

A field/equipment blank and a trip blank were analyzed along with the groundwater samples collected on February 15-18, 1994. The field/equipment blanks were used to demonstrate that the sample bottle and the sampling procedures were not contaminating the sample. Deionized water supplied by the laboratory was transported to one of the wells and a sample of the deionized water was collected using, to the extent feasible, the same sampling protocol and equipment used to obtain the groundwater samples. A trip blank, supplied by BCA, was used to provide a measure of the positive interferences introduced by the sample preservation, transportation, storage, and analysis. A case summary describing the data quality assurance/quality control (QA/QC) for this project is presented in Volume II, Appendix B.

by the National Academy of Sciences. The turbidity levels detected in the samples collected from wells GW-2 through GW-8 and GW-10 were above the DHS Secondary MCL of 5 Nephelometric Turbidity Units (NTU). Primary MCLs include a potential of health risk, whereas, secondary MCLs are derived from human welfare considerations (usually taste and odor) and do not include a consideration of health risk. The concentrations of nitrate detected in the samples collected from wells GW-1 through GW-8 were above the DHS MCL of 45 mg/l.

Sodium and TDS were detected in the equipment blank sample at concentrations of 1.3 and 35 mg/l, respectively. All other inorganic compounds were not detected in the equipment blank sample above their respective detection limits.

Inorganic compound analytical results for the first quarter 1994 monitoring event are presented in Table 2. Historic inorganic compound analytical results are presented in Tables 7 through 16. Please note that nitrate values reported prior to January, 1993 were quantified as nitrate as N, whereas recent data are reported as nitrate as NO₃ in accordance with the Sampling and Analysis Plan approved by the RWQCB. Nitrate concentrations detected during the first quarter 1994 monitoring event are shown on Figure 7.

6.2 VOLATILE ORGANIC COMPOUNDS

6.2.1 Groundwater Sample Results - Normal Sampling Elevations (February 15-18, 1994)

TCE was detected at concentrations ranging from 0.97 (GW-5) to 3,100 micrograms per liter (µg/l) (GW-7) in the groundwater samples collected from the ten monitoring wells. The highest concentrations of TCE were detected in wells GW-2, GW-7 and GW-10 located near the southern boundary of Kaiser property and the Southern Pacific Railroad property near the western portion of the site. The concentrations of TCE detected in wells other than GW-5 and GW-6 were above the DHS MCL of 5 µg/l. Refer to Section 7.0 of this document for a discussion of TCE concentrations on different sampling dates and at different sampling depths.

The compound tetrachloroethene (PCE) was detected at concentrations ranging from 0.66 (GW-5) to 1.7 µg/l (GW-1) in the groundwater samples collected from wells GW-1, GW-4, GW-5, GW-6, GW-8 and GW-9. PCE was not detected in the groundwater samples collected from wells GW-2, GW-3, GW-7 and GW-10 above detection limits of 4 to 40 µg/l. All the concentrations of PCE detected were below the DHS MCL of 5 µg/l.

The compound 1,1,1-trichloroethane (1,1,1-TCA) was detected at concentrations ranging from 0.25 to 5.0 µg/l in the groundwater samples obtained from wells GW-1, GW-3, GW-4, GW-8 and GW-9. 1,1,1-TCA was not detected above detection limits of 0.2 to 40 µg/l in the other five groundwater samples. The concentrations of 1,1,1-TCA detected were below the DHS MCL of 200 µg/l.

TPH was not present above a detection limit of 1,000 $\mu\text{g}/\ell$ in any of the ten groundwater samples.

1,1-DCE was detected at concentrations ranging from 0.31 to 6.9 $\mu\text{g}/\ell$ in the groundwater samples collected from wells GW-1, GW-3, GW-4 and GW-9. 1,1-DCE was not detected above detection limits of 0.2 to 40 $\mu\text{g}/\ell$ in the other six groundwater samples. The concentration of 1,1-DCE detected in the groundwater samples collected from well GW-4 was above the DHS MCL of 6 $\mu\text{g}/\ell$.

1,2,3-trichlorobenzene (1,2,3-TCB) was detected at a concentration of 0.29 $\mu\text{g}/\ell$ in the groundwater sample collected from well GW-8. 1,2,3-TCB was not detected above detection limits of 0.2 to 40 $\mu\text{g}/\ell$ in the other nine groundwater samples.

1,2,4-trichlorobenzene (1,2,4-TCB) was detected at a concentration of 0.23 $\mu\text{g}/\ell$ in the groundwater sample collected from well GW-8. 1,2,4-TCB was not detected above detection limits of 0.2 to 40 $\mu\text{g}/\ell$ in the other nine groundwater samples.

Carbon tetrachloride was detected at concentrations of 1.2 and 0.92 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-4 and GW-8, respectively. Carbon tetrachloride was not detected above detection limits of 0.2 to 40 $\mu\text{g}/\ell$ in the other eight groundwater samples. The concentrations of carbon tetrachloride detected in the groundwater samples collected from wells GW-4 and GW-8 were above the DHS MCL of 0.5 $\mu\text{g}/\ell$.

Chloroform was detected at concentrations ranging from 0.31 to 80 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-1 and GW-4 through GW-10. Chloroform was not detected in the other three groundwater samples above detection limits of 0.2 to 20 $\mu\text{g}/\ell$. The concentrations of chloroform detected were below the DHS MCL of 100 $\mu\text{g}/\ell$ for total trihalomethanes (THMs).

The compound cis-1,2-DCE was detected at concentrations ranging from 0.26 to 56 $\mu\text{g}/\ell$ in the groundwater samples collected from wells GW-1, GW-3, GW-5, GW-6, GW-7, GW-8 and GW-10. cis-1,2-DCE was not detected in the other four groundwater samples above detection limits of 0.2 to 20 $\mu\text{g}/\ell$. The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from wells GW-7 and GW-10 were above the DHS MCL of 6 $\mu\text{g}/\ell$.

All other volatile organic compounds (VOCs) were not detected in the ten groundwater samples above a detection limit of 0.2 to 100 $\mu\text{g}/\ell$.

The VOC's 1,2-dichloropropane, toluene and PCE were detected at concentrations of 0.26, 0.30 and 0.95 $\mu\text{g}/\ell$, respectively, in the equipment blank samples. No other VOCs were detected in the equipment blank samples above their respective detection limits. TCE was detected at a concentration of 0.49 $\mu\text{g}/\ell$ in the trip blank samples. No other VOCs were detected in the trip blank samples above their respective detection limits.

VOC analytical results for the groundwater samples collected from the normal sampling elevations

in the monitoring wells for the first quarter 1994 monitoring event are presented in Tables 3 and 4 and Figures 6 and 7. Historical VOC analytical results are presented in Tables 17 through 27. Historical groundwater surface elevations, nitrate and volatile organic compound concentrations for wells GW-1 through GW-6 are presented in Figures 8 through 63.

6.2.2 Groundwater Sample Results - Below Normal Sampling Elevations (February 17, 1994)

TCE was detected at concentrations of 14, 1,600 and 4,200 $\mu\text{g}/\ell$ in the groundwater samples collected from wells GW-8, GW-10 and GW-7, respectively, at 5-10 feet below the normal sampling depths for these wells. All the concentrations of TCE detected were above the DHS MCL of 5 $\mu\text{g}/\ell$. The concentrations of TCE were lower in the groundwater samples collected at the normal sampling depth in well GW-7 (3,100 $\mu\text{g}/\ell$) than the concentrations of TCE detected in groundwater samples obtained at the lower sampling depth (4,200 $\mu\text{g}/\ell$). The concentrations of TCE were higher in the groundwater samples collected at the normal sampling depths in wells GW-8 and GW-10 (30 and 2,300 $\mu\text{g}/\ell$, respectively) than the concentrations of TCE detected in groundwater samples obtained at the lower sampling depths in these wells (14 and 1,600 $\mu\text{g}/\ell$, respectively).

PCE was detected at a concentration of 0.40 $\mu\text{g}/\ell$ in the groundwater sample collected from well GW-8 at 10 feet below the normal sampling interval for this well. PCE was not detected above detection limits of 20 to 50 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-7 and GW-10 at the same sampling elevation. The concentration of PCE detected in the groundwater samples obtained from well GW-8 was below the DHS MCL of 5 $\mu\text{g}/\ell$.

Carbon tetrachloride was detected at a concentration of 1.3 $\mu\text{g}/\ell$ in the groundwater samples collected from well GW-8 below the normal sampling interval for this well. Carbon tetrachloride was not detected above detection limits of 20 to 50 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-7 and GW-10 at the same sampling elevation. The concentration of carbon tetrachloride detected in the groundwater samples collected from well GW-8 was above the DHS MCL of 0.5 $\mu\text{g}/\ell$.

Chloroform was detected at concentrations of 0.40, 27 and 110 $\mu\text{g}/\ell$ in the groundwater samples collected from wells GW-8, GW-10 and GW-7, respectively, below the normal sampling intervals for these wells. The concentration of chloroform detected in the groundwater samples obtained from well GW-7 was above the DHS MCL of 100 $\mu\text{g}/\ell$ for THMs.

cis-1,2-DCE was detected at concentrations of 0.24, 31 and 83 $\mu\text{g}/\ell$ in the groundwater samples collected from wells GW-8, GW-10 and GW-7, respectively, below the normal sampling intervals for these wells. The concentrations of cis-1,2-DCE detected in the groundwater samples obtained from wells GW-7 and GW-10 were above the DHS MCL of 6 $\mu\text{g}/\ell$.

All other VOCs were not detected in the three groundwater samples above detection limits of 0.2 to

300 $\mu\text{g}/\ell$.

VOC analytical results for the groundwater samples collected at below the normal sampling depths in wells GW-7, GW-8 and GW-10 on February 17, 1994 are presented in Tables 3 and 5 and Figure 6.

6.2.3 Groundwater Sample Results - Normal Sampling Elevations (March 7-9, 1994)

TCE was detected at concentrations of 60, 35 and 210 $\mu\text{g}/\ell$ in the groundwater samples collected from wells GW-2, GW-7 and GW-10, respectively. The concentrations of TCE detected in wells GW-2 and GW-7 were one to two orders of magnitude lower than the TCE concentrations detected in these wells during the February, 1994 sampling episode (three weeks earlier).

PCE was detected at concentrations of 1.4 and 0.72 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-2 and GW-7, respectively. PCE was not detected in the groundwater samples collected from well GW-10 above a detection limit of 2 $\mu\text{g}/\ell$. The concentrations of PCE detected were below the DHS MCL of 5 $\mu\text{g}/\ell$.

1,1,2,2-Tetrachloroethane (1,1,2,2-PCA) and 1,2,4-TCB were detected at concentrations of 0.46 and 0.50 $\mu\text{g}/\ell$, respectively, in the groundwater samples obtained from well GW-7. These compounds were not detected in the other two groundwater samples above detection limits of 1 to 2 $\mu\text{g}/\ell$. The concentration of 1,1,2,2-PCA detected in the groundwater sample obtained from well GW-7 was below the DHS MCL of 1 $\mu\text{g}/\ell$.

Chloroform was detected at concentrations of 0.96 and 4.0 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-7 and GW-10, respectively. Chloroform was not detected in the groundwater samples collected from well GW-2 at a detection limit of 1 $\mu\text{g}/\ell$. The concentrations of chloroform detected are below the DHS MCL of 100 $\mu\text{g}/\ell$ for THMs.

cis-1,2-DCE was detected at concentrations of 1.0 and 4.4 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-7 and GW-10, respectively. cis-1,2-DCE was not detected in the groundwater samples collected from well GW-2 at a detection limit of 1 $\mu\text{g}/\ell$. The concentrations of cis-1,2-DCE detected were below the DHS MCL of 6 $\mu\text{g}/\ell$.

All other VOCs were not detected in the three groundwater samples above detection limits of 0.4 to 5 $\mu\text{g}/\ell$.

VOC analytical results for the groundwater samples collected at normal sampling elevations in wells GW-2, GW-7 and GW-10 on March 7-9, 1994 are presented in Tables 3 and 4 and Figure 6.

6.2.4 Groundwater Sample Results - 10 Feet Below Normal Sampling Elevations (March 7-9, 1994)

TCE was detected at concentrations of 29, 34 and 200 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-2, GW-7 and GW-10, respectively. The concentrations of TCE detected in GW-7 and GW-10 were one to two orders of magnitude lower than the concentrations of TCE detected in these wells during the February, 1994 sampling event (three weeks earlier). The concentrations of TCE detected in groundwater samples collected from wells GW-2, GW-7 and GW-10 decreased from their normal sampling depths (60, 35, and 210 $\mu\text{g}/\ell$, respectively) to 10 feet below their normal sampling depths (29, 34 and 200 $\mu\text{g}/\ell$, respectively).

PCE was detected at concentration of 0.60, 0.70 and 2.0 $\mu\text{g}/\ell$ in the groundwater samples collected at 10 feet below normal depth from wells GW-2, GW-7 and GW-10, respectively. The concentrations of PCE detected were below the DHS MCL of 5.0 $\mu\text{g}/\ell$.

Chloroform was detected at concentrations of 0.42, 1.0 and 3.8 $\mu\text{g}/\ell$ in the groundwater samples collected from wells GW-2, GW-7 and GW-10, respectively. All the concentrations of chloroform detected were below the DHS MCL of 100 $\mu\text{g}/\ell$ for THMs.

cis-1,2-DCE was detected at concentrations of 0.54, 0.96 and 4.5 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-2, GW-7 and GW-10, respectively. All the concentrations of cis-1,2-DCE detected were below the DHS MCL of 6 $\mu\text{g}/\ell$.

All other VOCs were not detected in the three groundwater samples above detection limits of 0.4 to 10 $\mu\text{g}/\ell$.

VOC analytical results for the groundwater samples collected at 10 feet below the normal sampling elevations in wells GW-2, GW-7 and GW-10 on March 7-9, 1994 are presented in Tables 3 and 5 and Figure 6.

6.2.5 Groundwater Sample Results - 30 Feet Below Normal Sampling Elevations (March 7-9, 1994)

TCE was detected at concentrations of 50, 86 and 210 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-2, GW-7 and GW-10, respectively. The concentrations of TCE detected in groundwater samples obtained from wells GW-2 and GW-7 increased from 10 feet below their normal sampling depths (29 and 34 $\mu\text{g}/\ell$, respectively) to 30 feet below their normal sampling depths (50 and 86 $\mu\text{g}/\ell$, respectively). The concentrations of TCE detected in groundwater samples collected from well GW-2 decreased slightly from the normal sampling depth (60 $\mu\text{g}/\ell$) to 30 feet below the normal sampling depth (50 $\mu\text{g}/\ell$). The concentrations of TCE detected in groundwater samples obtained from well GW-7 increased from the normal sampling depth (35 $\mu\text{g}/\ell$) to 30 feet

below the normal sampling depth (86 $\mu\text{g}/\ell$). The concentrations of TCE detected in groundwater samples collected from well GW-10 remained relatively consistent at the normal sampling depth (210 $\mu\text{g}/\ell$), 10 feet below the normal sampling depth (200 $\mu\text{g}/\ell$), and 30 feet below the normal sampling depth (210 $\mu\text{g}/\ell$).

PCE was detected at concentrations of 1.1, 1.7 and 2.4 $\mu\text{g}/\ell$ in the groundwater samples collected from 30 feet below normal sampling depth in wells GW-2, GW-7 and GW-10, respectively. None of the concentrations of PCE detected were above the DHS MCL of 5.0 $\mu\text{g}/\ell$.

1,2,3-TCB and 1,2,4-TCB were detected at concentrations of 3.0 and 2.3 $\mu\text{g}/\ell$, respectively, in the groundwater samples collected from well GW-10. These compounds were not detected above detection limits of 1 to 2 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-2 and GW-7.

Chloroform was detected at concentrations of 2.7 and 4.5 $\mu\text{g}/\ell$ in the groundwater samples collected from wells GW-7 and GW-10, respectively. Chloroform was not detected above a detection limit of 1 $\mu\text{g}/\ell$ in the groundwater samples obtained from well GW-2. The concentrations of chloroform detected were below the DHS MCL of 100 $\mu\text{g}/\ell$ for THMs.

cis-1,2-DCE was detected at concentrations of 2.4 and 4.7 $\mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-7 and GW-10, respectively. cis-1,2-DCE was not detected above a detection limit of 1 $\mu\text{g}/\ell$ in the groundwater samples obtained from well GW-2. the concentrations of cis-1,2-DCE detected were below the DHS MCL of 6 $\mu\text{g}/\ell$.

All other VOCs were not detected in the three groundwater samples above detection limits of 1 to 10 $\mu\text{g}/\ell$.

VOC analytical results for the groundwater samples collected at 30 feet below the normal sampling elevations in wells GW-2, GW-7 and GW-10 on March 7-9, 1994 are presented in Tables 3 and 5 and Figure 6.

7.0 DISCUSSION

Based on groundwater level measurements obtained between November 29, 1993 and March 7, 1994, groundwater elevations have increased between 3.21 (well GW-9) and 4.99 (well GW-6) feet beneath the site. Figure 64 presents the change in groundwater elevations beneath the site and the Kaiser facility between November, 1993 and March, 1994. Based on the water level measurements obtained on January 7 and March 7, 1994, the instantaneous groundwater flow direction was northerly beneath the eastern portion of the site and easterly beneath the central and western portions of the site and the Kaiser facility on January 7 and March 7, 1994. Water level measurements obtained on February 15, 1994 indicated that the instantaneous groundwater flow direction was southeasterly beneath the site and the adjacent Kaiser facility. Instantaneous groundwater flow beneath the site appears to be significantly impacted by seasonal pumping of aeration wells and supply wells located within the Rinaldi-Toluca and North Hollywood well fields.

TCE was detected in the groundwater samples collected from wells GW-1 through GW-4 and wells GW-7 through GW-10 during the February 15-18, 1994 sampling event and in groundwater samples obtained from wells GW-2, GW-7 and GW-10 during the March 7-9, 1994 sampling event at concentrations above the MCL. The concentrations of TCE detected in groundwater samples obtained from wells GW-7, GW-8 and GW-10, the concentration of chloroform detected in well GW-7, and the concentrations of cis-1,2-DCE detected in wells GW-7 and GW-10 on February 17, 1994 at the same sampling elevation as well GW-2 were above their respective MCLs. The concentrations of TCE detected at the normal sampling depth in wells GW-8 and GW-10 (30 and 2,300 $\mu\text{g}/\ell$, respectively) were higher than the concentrations of TCE detected at the lower sampling elevation (14 and 1,600 $\mu\text{g}/\ell$, respectively) during the February 15-18, 1994 sampling event. In contrast, the concentrations of TCE detected at the normal sampling depth in well GW-7 (3,100 $\mu\text{g}/\ell$) were lower than the concentrations of TCE detected at the lower sampling elevation (4,200 $\mu\text{g}/\ell$) during the February 15-18, 1994 sampling event.

The concentrations of TCE detected in the groundwater samples collected from wells GW-2, GW-7 and GW-10 on March 7-9, 1994 at normal, 10 and 30 feet below their respective normal sampling elevations were above the MCL. The concentrations of TCE detected in groundwater samples obtained from well GW-2 during the March 7-9, 1994 sampling episode decreased from the normal sampling interval (60 $\mu\text{g}/\ell$) to 10 feet below the normal sampling depth (29 $\mu\text{g}/\ell$) and increased from the middle sampling interval (10 feet below normal sampling depth) to the low sampling interval (30 feet below normal sampling depth) (50 $\mu\text{g}/\ell$). The concentrations of TCE detected in the groundwater samples collected from well GW-7 during the March 7-9, 1994 sampling event decreased slightly between the normal sampling elevation (35 $\mu\text{g}/\ell$) and 10 feet below the normal sampling elevation (34 $\mu\text{g}/\ell$) and increased from the middle (10 feet below the normal sampling elevation) to the lower sampling interval (30 feet below the normal sampling elevation) (86 $\mu\text{g}/\ell$). The concentrations of TCE detected in the groundwater samples collected from well GW-10 during

the March 7-9, 1994 sampling episode remained relatively consistent with depth (210 $\mu\text{g}/\ell$ at normal sampling depth, 200 $\mu\text{g}/\ell$ at 10 feet below normal sampling interval, and 210 $\mu\text{g}/\ell$ at 30 feet below normal sampling depth).

1,1-DCE was detected in groundwater samples collected from well GW-4 at a concentration above the MCL during the February 15-18, 1994 sampling event. Carbon tetrachloride was detected in groundwater samples collected from wells GW-4 and GW-8 at concentrations above the MCL during the February 15-18, 1994 sampling episode. cis-1,2-DCE was detected in the groundwater samples obtained from wells GW-7 and GW-10 at concentrations above the MCL during the February 15-18, 1994 sampling event. All other VOCs detected in the groundwater samples collected from the six on-site wells and four off-site wells sampled during both sampling events were present at concentrations below their respective MCLs.

In general, the concentrations of VOCs detected in wells GW-1, GW-2, GW-4 and GW-7 through GW-10 have increased from the November, 1993 sampling event to the February, 1994 sampling episode. The concentrations of TCE detected in wells GW-1 through GW-4 and GW-7 through GW-10 increased from 4.4, 29, 0.6, 7.7, 0.9, 3.1 and 15 $\mu\text{g}/\ell$, respectively, during the November, 1993 sampling event to 62, 890, 65, 3,100, 30, 16 and 2,300 $\mu\text{g}/\ell$, respectively, during the February, 1994 sampling event. Pumping of the production wells in the Tujunga and Rinaldi-Toluca well fields has increased since the January 17, 1994 earthquake. The pumping affect may account for the increase in TCE concentrations detected in wells at the subject site.

The concentrations of VOCs detected in wells GW-3, GW-5 and GW-6 have remained relatively consistent from the November, 1993 sampling event to the February, 1994 sampling episode. The concentrations of TCE detected in wells GW-3, GW-5 and GW-6 were 15, 0.78 and 1.2 $\mu\text{g}/\ell$, respectively, during the November, 1993 sampling event and were 15, 0.97 and 1.2 $\mu\text{g}/\ell$, respectively, during the February, 1994 sampling event.

The concentrations of TCE detected in wells GW-2, GW-7 and GW-10 decreased at least an order of magnitude from the February, 1994 sampling event to the March, 1994 sampling episode. The concentrations of TCE detected in wells GW-2, GW-7 and GW-10 decreased to 60, 35 and 210 $\mu\text{g}/\ell$, respectively, during the March, 1994 sampling event.

Nitrate was detected in the groundwater samples collected from wells GW-1 through GW-8 at concentrations above the MCL during the February 15-18, 1994 sampling episode. The turbidity levels in wells GW-2 through GW-8 and GW-10 were above the secondary MCL during the February 15-18, 1994 sampling event. No other inorganic constituents were detected above the primary or secondary MCL during the February 15-18, 1994 sampling episode.

The next groundwater monitoring episode at the site is scheduled for early May (2nd Quarter 1994).

8.0 LIMITATIONS

SEACOR has prepared this report for the exclusive use of AlliedSignal AEROSPACE, their representatives, and other authorized parties. The findings and conclusions presented herein are based primarily upon the laboratory analysis of groundwater samples collected during this study. All work has been conducted in accordance with generally accepted practices in the fields of environmental engineering, geology, and hydrogeology that exist in Los Angeles County at this time. No other warranty, either expressed or implied, is made.

TABLES

TABLE 1 - GROUNDWATER SURFACE ELEVATIONS (all measurements in feet above mean sea level)							
Well ID	Wellhead Elevation	Depth to Water (01/07/94)	Groundwater Elevation (01/07/94)	Depth to Water (02/15/94)	Groundwater Elevation (02/15/94)	Depth to Water (03/07/94)	Groundwater Elevation (03/07/94)
GW-1	734.39	225.02	509.37	225.62	508.77	224.21	510.18
GW-2	737.82	227.62	510.20	228.38	509.44	227.04	510.78
GW-3	735.53	225.65	509.88	226.44	509.09	225.00	510.53
GW-4	734.63	225.70	508.93	226.34	508.29	224.92	509.71
GW-5	735.72	226.44	509.28	227.22	508.50	225.57	510.15
GW-6	739.92	232.02	507.90	231.08	508.84	230.40	509.52
GW-7	734.48	224.29	510.19	225.51	508.97	223.74	510.74
GW-8	741.80	230.84	510.96	232.14	509.66	230.51	511.29
GW-9	740.55	229.34	511.21	231.19	509.36	229.18	511.37
GW-10	737.44	226.87	510.57	228.41	509.03	226.56	510.88

NM: Not measured.
NC: Not calculated.

TABLE 2 - INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS
(all results in milligrams per liter, except turbidity)

Organic Constituent	GW-1 (02/18/94)	GW-2 (02/16/94)	GW-3 (02/16/94)	GW-4 (02/18/94)	GW-5 (02/18/94)	GW-6 (02/18/94)	GW-7 (02/16/94)	GW-8 (02/16/94)	GW-9 (02/16/94)	GW-10 (02/16/94)	Equipment Blank (02/17/94)
Chloride	27	32	28	31	26	36	27	34	31	22	<0.05
Sulfate	56	56	52	55	56	57	66	55	58	64	<0.1
Carbonate Alkalinity	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	210	290	210	220	210	240	260	240	180	260	<10
Hydroxide Alkalinity	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Alkalinity	210	290	210	220	210	240	260	240	180	260	<10
Calcium	95	130	100	110	96	110	120	110	82	110	<0.5
Magnesium	20	27	21	23	20	25	26	24	18	23	<0.1
Potassium	5.2	4.4	4.2	3.9	3.4	3.9	4.2	4.5	3.8	4.4	<0.5
Sodium	26	27	25	25	23	26	30	28	26	33	1.3
TDS	420	550	460	440	390	460	550	500	410	480	35
Turbidity	3.1	21	27	39	28	56	7.8	23	1.9	7.2	<0.1
Nitrate	49	60	60	64	50	69	71	69	41	33	<0.1
Nitrite	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ammonia Nitrogen	<0.1	<0.1	0.10	0.11	0.21	0.10	0.12	<0.1	0.11	0.11	<0.1

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

TABLE 3 - TCE ANALYTICAL RESULTS
(all results in micrograms per liter)

Well ID	Sampling Depth	Date	TCE Concentration
GW-1	Normal	(02/18/94)	62
GW-2	Normal	(02/16/94)/(03/09/94)	890/60
GW-2	10' Below Normal	(03/09/94)	29
GW-2	30' Below Normal	(03/09/94)	50
GW-3	Normal	(02/16/94)	15
GW-4	Normal	(02/18/94)	65
GW-5	Normal	(02/18/94)	0.97
GW-6	Normal	(02/18/94)	1.2
GW-7	Normal	(02/16/94)/(03/08/94)	3,100/35
GW-7	5 to 10' Below Normal	(02/17/94)/(03/08/94)	4,200/34
GW-7	Normal	(03/08/94)	35
GW-8	Normal	(02/16/94)	30
GW-8	10' Below Normal	(02/17/94)	14
GW-9	Normal	(02/16/94)	16
GW-10	Normal	(02/16/94)/(03/07/94)	2,300/210
GW-10	8 to 10' Below Normal	(02/17/94)/(03/07/94)	1,600/200
GW-10	30' Below Normal	(03/07/94)	210

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TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS - NORMAL SAMPLING ELEVATIONS
(all results in micrograms per liter)

Organic Constituent	GW-1 (02/18/94)	GW-2 (02/18/94)/(03/09/94)	GW-3 (02/16/94)	GW-4 (02/18/94)	GW-5 (02/18/94)	GW-6 (02/18/94)	GW-7 (02/16/94)/(03/09/94)	GW-8 (02/16/94)	GW-9 (02/16/94)	GW-10 (02/16/94)/(03/09/94)	Equipment Blank (02/17/94)	Trip Blank
TPH	<1,000	<1,000/NA	<1,000	<1,000	<1,000	<1,000	<1,000/NA	<1,000	<1,000	<1,000/NA	<1,000	<1,000
1,1,1,2-Tetrachloroethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,1,1-Trichloroethane	1.4	<20/<1	0.31	5.0	<0.2	<0.2	<40/<0.4	0.25	0.42	<40/<2	<0.2	<0.2
1,1,2,2-Tetrachloroethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/0.46	<0.2	<0.2	<40/<2	<0.2	<0.2
1,1,2-Trichloroethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,1-Dichloroethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,1-Dichloroethane	1.0	<20/<1	0.31	6.7	<0.2	<0.2	<40/<0.4	<0.2	0.40	<40/<2	<0.2	<0.2
1,1-Dichloropropene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,2,3-Trichlorobenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,2,3-Trichloropropene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,2,4-Trichlorobenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/0.50	0.23	<0.2	<40/<2	<0.2	<0.2
1,2,4-Trichloropropene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,2-Dibromo-3-chloropropane	<3	<50/<3	<10	<3	<0.5	<0.5	<100/<1	<0.5	<0.5	<100/<5	<0.5	<0.5
1,2-Dibromochloroethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,2-Dichloroethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,2-Dichlorobenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,2-Dichloropropane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,3,5-Trimethylbenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	0.26	<0.2
1,3-Dichlorobenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,3-Dichloropropane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
1,4-Dichlorobenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
2,2-Dichloropropane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
2-Chlorotoluene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
4-Chlorotoluene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS - NORMAL SAMPLING ELEVATIONS
(all results in micrograms per liter)

Organic Constituent	GW-1 (02/18/94)	GW-2 (02/16/94)/(03/09/94)	GW-3 (02/16/94)	GW-4 (02/18/94)	GW-5 (02/18/94)	GW-6 (02/18/94)	GW-7 (02/16/94)/(03/06/94)	GW-8 (02/16/94)	GW-9 (02/16/94)	GW-10 (02/16/94)/(03/07/94)	Equipment Blank (02/17/94)	Trip Blank
Bromobenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Bromochloromethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Bromodichloromethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Bromomethane	<3	<50/<3	<10	<3	<0.5	<0.5	<100/<1	<0.5	<0.5	<100/<5	<0.5	<0.5
Benzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Bromoform	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Chlorobenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Carbon Tetrachloride	<1	<20/<1	<4	1.2	<0.2	<0.2	<40/<0.4	0.92	<0.2	<40/<2	<0.2	<0.2
Chloroethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Chloroform	1.5	<20/<1	<4	1.1	0.34	0.31	80/0.96	0.52	0.34	46/4.0	<0.2	<0.2
Chloromethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Dibromochloromethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Dichloromethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Dibromomethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Dichlorodifluoromethane	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Ethylbenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Freon 113	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Hexachlorobutadiene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Isopropylbenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Methylene Chloride	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
N-Butylbenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
N-Propylbenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Naphthalene	<5	<100/<5	<20	<5	<1	<1	<200/<2	<1	<1	<200/<10	<0.1	<1
Styrene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2

TABLE 4 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS - NORMAL SAMPLING ELEVATIONS
(all results in micrograms per liter)

Organic Constituent	GW-1 (02/18/94)	GW-2 (02/16/94)/(03/09/94)	GW-3 (02/16/94)	GW-4 (02/18/94)	GW-5 (02/18/94)	GW-6 (02/18/94)	GW-7 (02/16/94)/(03/08/94)	GW-8 (02/16/94)	GW-9 (02/16/94)	GW-10 (02/16/94)/(03/07/94)	Equipment Blank (02/17/94)	Trip Blank
Trichloroethene	62	890/60	15	65	0.97	1.2	3,100/35	30	16	2,300/210	<0.2	0.49
Trichlorofluoroethene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
Toluene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	0.30	<0.2
Tetrachloroethene	1.7	<20/1.4	<4	1.2	0.66	0.94	<40/<0.4	0.77	1.1	<40/<2	0.95	<0.2
Vinyl Chloride	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
cis-1,2-Dichloroethene	3.0	<20/<1	0.26	<1	0.30	0.56	56/1.0	0.5	<0.2	52/4.4	<0.2	<0.2
cis-1,3-Dichloropropene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
m- & p-xylenes	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
o-xylene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
p-Isopropyl toluene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
sec-Butylbenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
trans-1,2-Dichloroethene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
trans-1,3-Dichloropropene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2
tert-Butylbenzene	<1	<20/<1	<4	<1	<0.2	<0.2	<40/<0.4	<0.2	<0.2	<40/<2	<0.2	<0.2

Total Petroleum Hydrocarbons:
Less than the detection limit of 3.
Not analyzed

004326

TABLE 5 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS - OTHER SAMPLING ELEVATIONS (all results in micrograms per liter)										
Organic Constituent	GW-7 5' Below (02/17/94)	GW-4 10' Below (02/17/94)	GW-10 8' Below (02/17/94)	GW-2 10' Below (03/09/94)	GW-2 30' Below (03/09/94)	GW-7 10' Below (03/09/94)	GW-7 30' Below (03/09/94)	GW-10 10' Below (03/07/94)	GW-10 30' Below (03/07/94)	
1,1,1,2-Tetrachloroethane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,1,1-Trichloroethane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,1,2-Trichloroethane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,1-Dichloroethane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,1-Dichloroethene	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,1-Dichloropropene	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,2,3-Trichlorobenzene	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	3.0
1,2,3-Trichloropropane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,2,4-Trichlorobenzene	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	2.3
1,2,4-Trichloropropane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,2-Dibromo-3-chloropropane	< 200	< 0.5	< 50	< 1	< 3	< 1	< 3	< 5	< 5	< 5
1,2-Dibromoethane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,2-Dichloroethane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,2-Dichlorobenzene	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,2-Dichloropropane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,3,5-Trimethylbenzene	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,3-Dichlorobenzene	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,3-Dichloropropane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
1,4-Dichlorobenzene	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
2,2-Dichloropropane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
2-Chloroethane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2
4-Chloroethane	< 50	< 0.2	< 20	< 0.4	< 1	< 0.4	< 1	< 2	< 2	< 2

TABLE 3 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS - OTHER SAMPLING ELEVATIONS (all results in micrograms per liter)									
Organic Constituent	GW-7 5' Below (02/17/94)	GW-8 10' Below (02/17/94)	GW-10 8' Below (02/17/94)	GW-2 10' Below (03/09/94)	GW-2 30' Below (03/09/94)	GW-7 10' Below (03/09/94)	GW-7 30' Below (03/09/94)	GW-10 10' Below (03/07/94)	GW-10 30' Below (03/07/94)
Bromobenzene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Bromochloromethane	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Bromodichloromethane	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Bromomethane	<200	<0.5	<50	<1	<3	<1	<3	<5	<5
Benzene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Bromoform	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Chlorobenzene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Carbon Tetrachloride	<50	1.3	<20	<0.4	<1	<0.4	<1	<2	<2
Chloroethane	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Chloroform	110	0.40	27	0.42	<1	1.0	2.7	3.8	4.5
Chloromethane	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Dibromochloromethane	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Dichloromethane	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Dibromomethane	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Dichlorodifluoromethane	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Ethylbenzene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Freon 113	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Hexachlorobutadiene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Isopropylbenzene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Methylene Chloride	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
N-Butylbenzene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
N-Propylbenzene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Naphthalene	<300	<1	<100	<2	<5	<2	<5	<10	<10

TABLE 5 - VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS - OTHER SAMPLING ELEVATIONS
(all results in micrograms per liter)

Organic Constituent	GW-7 5' Below (02/17/94)	GW-8 10' Below (02/17/94)	GW-10 8' Below (02/17/94)	GW-2 10' Below (03/09/94)	GW-2 30' Below (03/09/94)	GW-7 10' Below (03/08/94)	GW-7 30' Below (03/08/94)	GW-10 10' Below (03/07/94)	GW-10 30' Below (03/07/94)
Styrene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Trichloroethene	4,200	14	1,600	29	50	34	86	200	210
Trichlorofluoromethane	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Toluene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
Tetrachloroethene	<50	0.40	<20	0.60	1.1	0.70	1.7	2.0	2.4
Vinyl Chloride	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
cis-1,2-Dichloroethene	83	0.24	31	0.54	<1	0.96	2.4	4.5	4.7
cis-1,3-Dichloropropene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
m- & p-xylene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
o-xylene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
p-isopropyl toluene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
sec-Butylbenzene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
trans-1,2-Dichloroethene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
trans-1,3-Dichloropropene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2
tert-Butylbenzene	<50	<0.2	<20	<0.4	<1	<0.4	<1	<2	<2

<3: Less than the detection limit of 3.

TABLE 6 - HISTORIC GROUNDWATER SURFACE ELEVATIONS
(all measurements in feet above mean sea level)

Date	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10
07/19/91	472.30	472.33	472.15	473.38	473.78	474.63	NC	NC	NC	NC
08/12/91	470.58	470.53	470.45	470.52	471.98	473.34	NC	NC	NC	NC
09/17/91	468.38	468.17	468.11	468.47	470.05	470.84	NC	NC	NC	NC
11/18/91	467.66	467.97	467.76	467.56	468.91	469.43	NC	NC	NC	NC
12/10/91	471.32	471.56	471.45	470.78	471.86	476.06	NC	NC	NC	NC
01/13/92	475.52	475.88	475.64	475.19	477.13	475.66	NC	NC	NC	NC
02/19/92	478.72	479.14	479.09	477.95	478.99	477.53	NC	NC	NC	NC
03/17/92	475.67	475.92	475.85	475.36	476.22	476.82	NC	NC	NC	NC
04/01/92	474.12	476.07	474.70	474.66	475.33	476.33	NC	NC	NC	NC
05/19/92	472.11	472.52	471.96	471.28	472.42	474.01	NC	NC	NC	NC
06/15/92	472.80	473.12	472.87	472.47	473.75	473.79	NC	NC	NC	NC
07/22/92	471.87	471.94	471.95	471.47	472.78	472.55	NC	NC	NC	NC
08/10/92	469.97	470.13	470.03	469.76	471.03	471.55	NC	NC	NC	NC
09/04/92	463.93	464.95	464.00	464.37	466.04	468.38	NC	NC	NC	NC
11/12/92	462.97	462.55	462.82	462.75	464.85	464.38	NC	NC	NC	NC
12/21/92	468.71	468.22	468.66	468.20	470.04	468.33	NC	NC	NC	NC
01/14/93	473.10	473.00	473.27	472.44	473.99	471.78	NC	NC	NC	NC
02/16/93	471.70	478.02	478.11	477.00	478.14	475.24	NC	NC	NC	NC
03/02/93	479.52	479.91	479.95	478.89	480.04	476.84	NC	NC	NC	NC
03/25/93	482.56	482.92	482.95	481.99	483.02	480.12	NC	NC	NC	NC
05/09/93	487.59	488.15	488.13	487.21	488.04	486.07	NC	NC	NC	NC
06/01/93	490.08	490.83	490.67	489.63	490.40	488.53	NC	NC	NC	NC
06/17/93	488.29	489.63	488.85	487.80	488.65	488.59	NC	NC	NC	NC
06/30/93	491.29	492.34	491.99	491.28	492.16	490.31	NC	NC	NC	NC
08/02/93	496.49	497.40	497.24	496.22	496.86	494.70	NC	NC	NC	NC
08/18/93	496.44	497.61	497.19	495.73	496.06	495.36	NC	NC	NC	NC
09/08-09/93	NM	NM	NM	NM	NM	NM	NC	NC	NC	NC
09/13/93	498.72	499.91	499.41	498.48	498.98	497.89	498.56	499.90	500.30	499.04
10/14/93	501.79	502.84	502.45	501.13	501.53	500.57	NC	NC	NC	NC
11/29/93	506.29	507.14	506.93	505.90	506.24	504.53	507.16	507.91	508.16	507.52
12/07/93	506.99	507.83	507.60	506.56	506.96	505.37	NM	NM	NM	NM
01/07/94	509.37	510.20	509.88	508.93	509.28	507.90	510.19	510.96	511.21	510.57

004330

TABLE 6 - HISTORIC GROUNDWATER SURFACE ELEVATIONS
(all measurements in feet above mean sea level)

Date	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10
02/15/94	508.77	509.44	509.09	508.29	508.50	508.84	508.97	509.66	509.36	509.03
03/07/94	510.18	510.78	510.53	509.71	510.15	509.52	510.74	511.29	511.37	510.88

NC: Not calculated.
 N/A: Not measured.

004331

TABLE 7 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date										
	08/21/91	09/17/91	01/14/92	01/16/92	05/19/92	06/11/92	01/14/93	03/02/93	04/01/93	12/07/93	02/18/94
Chloride	44.7/46.9	38.5	31.0	24.2	29.0	37.0	22	27	27	25	27
Sulfate	74.7/67.1	69.3	59.3	50.8	59.4	64.0	55	59	55	56	56
Carbonate Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210
Hydroxide Alkalinity	ND/ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1
Total Alkalinity	244/266	244	204	197	220	248	210	190	210	200	210
Calcium	113/111	103	81.5	79.8	88.9	85	86	86	89	91	95
Magnesium	24.9/24.7	23.6	18.3	17.1	17.8	19.9	18	17	19	19	20
Potassium	ND/ND	ND	ND	ND	ND	ND	3.9	3.7	3.8	3.8	5.2
Sodium	24.5/23.9	23.6	23.6	22.7	24	26.1	25	24	26	27	26
TDS	551/514	580	437	441	440	581	400	360	400	410	420
Turbidity	ND/ND	0.38	0.40	0.60	0.20	0.2	0.68	1.0	2.4	1.42	3.1
Nitrate	18/17.8	17.7	10.5	10.9	14.9	17.3	45	42	38	36	49
Nitrite	ND/ND	ND	3.9	ND	ND	ND	<0.05	<0.05	<0.05	<0.1	<0.1
Ammonia Nitrogen	0.48/0.35	0.51	ND	0.20	ND	ND	<0.1	0.21	<0.1	0.38	<0.1

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 8 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date											
	08/21/91	09/17/91	01/16/92	03/17/92	05/28/92	08/18/92	01/14/93	03/02/93	06/02/93	08/19/93	11/30/93	02/16/94
Chloride	40.8	34.8/33.4	28.9	25.2	26.4	24.3	31	30	30	28	31	32
Sulfate	63.7	63.7/61.9	57.3	48.5	59	52.6	58	55	55	65	56	56
Carbonate Alkalinity	ND	ND/ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	246	248/248	172	197	261	264	210	210	210	220	280	290
Hydroxide Alkalinity	ND	ND/ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1
Total Alkalinity	246	248/248	172	197	261	264	210	210	210	220	280	290
Calcium	111	96.9/100	79.2	85	89	87.6	79	98	84	95	86	130
Magnesium	24.2	23.1/17.8	17.8	19	20.1	20.0	17	20	18	20	19	27
Potassium	ND	ND/ND	ND	ND	ND	ND	3.3	3.9	3.4	3.7	3.3	4.4
Sodium	24.1	23.5/24.1	25.2	27.9	23.5	25.2	23	26	24	25	24	27
TDS	490	541/534	443	369	441	485	430	400	440	440	460	550
Turbidity	ND	3.8/4.0	3.0	1.40	0.20	0.5	19	23	8.7	39	4.4	21
Nitrate	13.9	14.5/14.4	19.9	11.4	10.6	9.1	69	64	58	66	61	60
Nitrite	ND	ND/ND	3.5	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1
Ammonia Nitrogen	0.35	ND/ND	ND	2.7	ND	ND	<0.1	0.11	<0.1	<0.1	<0.1	<0.1

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

004333

TABLE 9 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date											
	06/22/91	09/17/91	01/16/92	03/16/92	05/19/92	08/12/92	01/14/93	03/02/93	06/02/93	08/19/93	11/09/93	02/16/94
Chloride	42.2	36.3	33.5/34	30.3/29	33.3/32	36.0	33	28	33	26	27	28
Sulfate	66.9	68.5	61.1/54	52.1/59	61.9/61.9	66.1	54	53	52	56	50	52
Carbonate Alkalinity	ND	ND	ND/ND	ND/ND	ND/ND	ND	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	240	244	208/201	232/228	245/253	248	190	190	200	200	210	210
Hydroxide Alkalinity	ND	ND	ND/ND	ND/ND	ND/ND	ND	<1	<1	<1	<1	<1	<1
Total Alkalinity	240	244	208/201	232/228	245/253	248	190	190	200	200	210	210
Calcium	96.3	107	81.4/101	86.6/96.7	88.6/92.4	110	89	86	90	91	82	100
Magnesium	22.3	24.5	19.8/21.7	19.7/22.1	20.1/21.0	23.6	19	18	19	19	18	21
Potassium	ND	ND	ND/4	ND/4	ND/ND	ND	3.9	3.5	3.9	3.8	3.6	4.2
Sodium	22.4	25.1	24.8/26.8	25.1/29.5	24.4/25.5	23.8	26	24	26	25	24	25
TDS	524	521	477/330	429/450	455/492	1,070	420	360	400	380	500	460
Turbidity	ND	ND	0.50/0.15	0.40/0.20	0.20/0.20	0.20	4.3	0.85	2.0	8.9	4.7	27
Nitrate	16.0	16.3	12.4/15.2	13.9/15.8	15.7/15.6	15.5	66	60	56	66	57	60
Nitrite	ND	ND	4.4/ND	ND/ND	ND/ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1
Ammonia Nitrogen	0.15	ND	ND/ND	0.12/ND	ND/ND	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.10

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

004334

TABLE 10 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-4
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date											
	08/19/91	01/15/92	03/18/92	06/19/92	08/10/92	01/16/93	03/03/93	06/02/93	08/19/93	11/20/93	02/15/94	
Chloride	37.4	33.8/34.1	33.7	34.8	39.1/39.2	28	27	23	24	26	31	
Sulfate	66.9	61.5/61.5	55.0	63.9	63.6/74.2	60	47	45	62	52	55	
Carbonate Alkalinity	ND	ND/ND	ND	ND	ND/ND	<1	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity	246	216/212	225	227	240/228	220	210	190	200	210	220	
Hydroxide Alkalinity	ND	ND/ND	ND	ND	ND/ND	<1	<1	<1	<1	<1	<1	
Total Alkalinity	246	216/212	225	227	240/228	220	210	190	200	210	220	
Calcium	99.4	89.9/89.7	101	96.4	101/102	100	95	86	87	80	110	
Magnesium	23.3	20.6/20.5	23.0	22.4	23.8/24.1	22	20	19	18	17	23	
Potassium	ND	ND/ND	ND	ND	ND/ND	3.9	3.8	3.7	3.6	3.3	3.9	
Sodium	23.0	23.4/23.3	23.2	23.9	36.0/44.2	26	24	24	23	23	25	
TDS	495	481/481	453	485	625/585	490	440	400	400	500	440	
Turbidity	0.40	0.40/0.50	0.80	0.20	0.2/0.1	3.1	8.5	0.58	5.2	1.1	39	
Nitrate	18.1	12.6/12.5	14.8	17.5	18.6/18.4	52	64	44	52	51	64	
Nitrite	ND	4.3/4.2	ND	ND	ND/ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1	
Ammonia Nitrogen	1.0	ND/ND	0.23	ND	ND/ND	<0.1	0.11	<0.1	<0.1	<0.1	0.11	

Turbidity measured in Nephelometric Turbidity Units.

TDS:

Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

TABLE 11 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-6
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date											
	08/28/91	09/17/91	01/15/92	03/18/92	05/20/92	08/12/92	01/16/93	03/02/93	06/02/93	08/18/93	11/30/93	02/18/94
Chloride	38.2	37.4	30.3	27.8	40.8	38.3	33	24	26	22	26	26
Sulfate	67.5	65.7	66.6	55.6	68.2	62.5	58	54	51	60	56	56
Carbonate Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	234	232	196	205	277	243	190	190	190	200	220	210
Hydroxide Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1
Total Alkalinity	234	232	196	205	277	243	190	190	190	200	220	210
Calcium	94.6	106	86.9	88.3	100	108	87	81	77	85	83	96
Magnesium	22.8	25.2	20.1	20.2	23.7	24.3	19	17	17	18	18	20
Potassium	ND	ND	ND	ND	ND	ND	3.4	3.2	3.0	3.3	3.2	3.4
Sodium	22.4	24.7	22.6	21.9	24.3	22.8	23	21	21	22	23	23
TDS	493	519	456	397	485	720	420	370	400	400	450	390
Turbidity	0.50	ND	0.90	1.9	0.20	0.40	11	1.2	0.58	1.3	20	28
Nitrate	18.0	18.2	10.4	11.7	18.8	17.9	77	50	44	49	45	50
Nitrite	ND	ND	4.0	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1
Ammonia Nitrogen	0.55	0.11	ND	0.34	0.11	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.21

turbidity measured in Nephelometric Turbidity Units.

ND: Not Detected

1: Less than the detection limit of 1.

D: Not Detected

0043336

TABLE 12 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-4
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date											
	08/22/91	09/19/91	01/16/92	03/11/92	05/20/92	06/11/92	01/14/93	03/20/93	06/01/93	08/18/93	11/20/93	02/18/94
Chloride	41.3	36.2	38.2	32.7	40.3	40.1	35	31	36	30	32	36
Sulfate	65.2	70.4	68.8	54.2	67.5	65.7	60	52	54	60	54	57
Carbonate Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity	ND	236	288	244	253	243	270	250	240	220	260	240
Hydroxide Alkalinity	ND	ND	ND	ND	ND	ND	<1	<1	<1	<1	<1	<1
Total Alkalinity	ND	236	288	244	253	243	270	250	240	220	260	240
Calcium	101	103	101	105	105	103	110	110	110	98	97	110
Magnesium	24.3	26.3	23.6	24.4	25.1	25.4	24	24	24	21	21	25
Potassium	ND	5.1	ND	ND	ND	ND	4.2	4.0	4.0	3.6	3.6	3.9
Sodium	22.9	24.0	23.6	25.0	25.6	27.7	26	26	27	24	23	26
TDS	513	589	553	457	491	605	470	490	500	480	700	460
Turbidity	ND	96	2.2	0.50	0.20	0.4	9.5	33	2.0	1.4	34	56
Nitrate	19.6	19.1	13.1	13.9	18.7	19.1	74	65	71	75	63	69
Nitrite	ND	ND	4.9	ND	ND	ND	<0.05	<0.05	<0.05	<0.10	<0.1	<0.1
Ammonia Nitrogen	0.23	ND	ND	1.5	ND	ND	<0.1	0.09	<0.1	<0.1	<0.1	0.10

Acidity measured in Nephelometric Turbidity Units.
 ND: Not Detected
 T: Total Dissolved Solids
 L: Less than the detection limit of 1.
 D: Not Detected

004337

TABLE 13 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date	
	07/08/93	11/29/93
Chloride	27	27
Sulfate	57	66
Carbonate Alkalinity	<20	<2
Bicarbonate Alkalinity	180	190
Hydronide Alkalinity	<20	<2
Total Alkalinity	180	190
Calcium	96	72
Magnesium	21	18
Potassium	4	3.7
Sodium	29	26
TDS	420	860
Turbidity	7.0	<1.0
Nitrate	63	49
Nitrite	ND	<1.0
Ammonia Nitrogen	<0.02	<1.0

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

TABLE 14 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR CW-4
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date	
	09/09/93	11/29/93 02/16/94
Chloride	34	35 34
Sulfate	60	56 55
Carbonate Alkalinity	<20	<2 <1
Bicarbonate Alkalinity	230	240 240
Hydroxide Alkalinity	<20	<2 <1
Total Alkalinity	230	240 240
Calcium	110	92 110
Magnesium	25	23 24
Potassium	4.9	4.4 4.5
Sodium	29	28 28
TDS	500	510 500
Turbidity	5.0	<1.0 23
Nitrate	74	56 69
Nitrite	ND	<1.0 <0.1
Ammonia Nitrogen	0.03	<1.0 <0.1

Turbidity measured in Nephelometric Turbidity Units.
TDS: Total Dissolved Solids.
<1: Less than the detection limit of 1.
ND: Not Detected

TABLE 15 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-9
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date	
	09/08/93	11/29/93
Chloride	26	21
Sulfate	1,000	59
Carbonate Alkalinity	<20	<2
Bicarbonate Alkalinity	180	190
Hydroxide Alkalinity	<20	<2
Total Alkalinity	180	190
Calcium	86	64
Magnesium	20	17
Potassium	4.4	3.9
Sodium	29	25
TDS	3,400	420
Turbidity	30	<1.0
Nitrate	45	30
Nitrite	ND	<1.0
Ammonia Nitrogen	<0.02	<1.0

Turbidity measured in Nephelometric Turbidity Units.

TDS: Total Dissolved Solids.

<1: Less than the detection limit of 1.

ND: Not Detected

TABLE 16 - HISTORIC INORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-10
(all results in milligrams per liter, except turbidity)

Inorganic Constituent	Sample Date		
	09/09/93	11/29/93	02/16/94
Chloride	21	20	22
Sulfate	63	58	64
Carbonate Alkalinity	<20	<2	<1
Bicarbonate Alkalinity	190	200	260
Hydrosulfide Alkalinity	<20	<2	<1
Total Alkalinity	190	200	260
Calcium	85	68	110
Magnesium	20	17	23
Potassium	4.1	3.6	4.4
Sodium	30	26	33
TDS	390	360	480
Turbidity	10	<1.0	7.2
Nitrate	38	25	33
Nitrite	ND	<1.0	<0.1
Ammonia Nitrogen	0.02	<1.0	0.11

Turbidity measured in Nephelometric Turbidity Units.

TDS:

Total Dissolved Solids.

<1:

Less than the detection limit of 1.

ND:

Not Detected

TABLE 17 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR W-1 (all results in micrograms per liter)								
Sample ID	Sampling Method	Date	1,1,1-TCA	1,1-DCA	1,1-DCE	TCE	Toluene	PCE
W-1 @ 290'	AL	5/14/87	<1	<1	<1	<1	<1	<1
W-1 @ 426'	AL	5/15/87	<1	<1	<1	<1	<1	<1
W-1 @ 290'	SP	6/8/87	<1	<1	<1	<1	5	<1
W-1 @ 420'	SP	6/11/87	<1	<1	<1	<1	7	<1

1,1,1-TCA:
 1,1-DCA:
 1,1-DCE:
 TCE:
 PCE:
 <1:
 AL:
 SP:

1,1,1-Trichloroethane,
 1,1-Dichloroethane,
 1,1-Dichloroethene,
 Trichloroethene,
 Tetrachloroethene,
 Less than the detection limit of 1,
 Air Lift Pump,
 Submersible Pump.

TABLE 18 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-1
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	08/21/91	09/17/91	01/14/92	03/15/92	05/19/92	06/11/92	01/14/93	03/02/93	06/17/93	12/07/93	02/18/94
1,1,1-Trichloroethene	2.4/2.3	1.6	ND	5.1	3.1	4.3	<3	<0.5	3.0	0.3	1.4
1,1-Dichloroethene	ND/ND	ND	ND	1.3	0.75	0.51	<3	<0.5	<3	0.3	<1
1,1-Dichlorobenzene	3.7/3.5	2.8	ND	3.1	3.3	5.5	<3	<0.5	2.9	<0.2	1.0
1,2,3-Trichlorobenzene	ND/0.75	ND	ND	ND	ND	ND	<3	<0.5	<3	<0.2	<1
Carbon Tetrachloride	1.1/0.70	1.3	ND	ND	0.85	1.6	<3	<0.5	<3	<0.2	<1
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	<3	1.4	<3	<0.2	<1
Trichloroethene	40/39	27	3.6	130	58	100	54	25	91	4.4	62
Toluene	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1
Tetrachloroethene	1.2/1.0	1.1	ND	1.7	1.4	2.1	<3	2.2	4.9	2.6	1.7
cis-1,2-Dichloroethene	ND/ND	ND	ND	3.0	1.6	1.4	<3	0.71	5.0	2.1	3.0
m,p-xylenes	ND	ND	ND	ND	ND	ND	<3	<0.5	<3	0.3	<1

ND: Not Detected.
<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and nitrobenzene (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 19 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-2
(all results in micrograms per liter)

Organic Constituent	Sample Date													
	06/21/91	09/17/91	01/15/92	03/17/92	05/20/92	08/10/92	01/14/93	03/02/93	06/18/93	08/19/93	11/20/93	02/16/94	03/09/94	
1,1,1-Trichloroethane	6.7	5.4/5.8	ND	2.5	12	15	0.54	<0.5	<3	<1	0.37	<20	<1	
1,1-Dichloroethane	ND	ND/ND	ND	ND	0.53	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1	
1,1-Dichloroethene	7.0	5.3/5.5	ND	2.4	13	17	0.64	<0.5	<3	<1	<0.2	<20	<1	
Carbon Tetrachloride	1.7	1.8/1.9	ND	0.57	3.3	3.8	<0.5	<0.5	<3	<1	<0.2	<20	<1	
Trichloroethene	50	42/44	1.6	31	83	150	24	19	48	48	29	890	60	
Tetrachloroethene	1.0	1.0/1.0	ND	0.58	1.9	2.3	0.71	0.62	<3	<1	1.7	<20	1.4	
Toluene	0.84	0.53/ND	ND	ND	ND	ND	<0.5	<0.5	<3	<1	<0.2	<20	<1	
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<3	<1	0.4	<20	<1	

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride and trichloroethene (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 20 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-3
(all results in micrograms per liter)

Organic Constituent	Sample Date											
	08/22/91	09/17/91	01/16/92	03/16/92	05/19/92	08/12/92	01/14/93	03/02/93	06/18/93	08/19/93	11/30/93	02/16/94
1,1,1-Trichloroethane	7.3	7.9	ND/ND	22/20	7.5/7.0	13	<5	<5	<50	<1	0.6	0.31
1,1-Dichloroethane	ND	0.55	ND/ND	6.6/ND	1.5/1.4	ND	<5	<5	<50	<1	<0.2	<4
1,1-Dichloroethene	10	8.5	ND/ND	11/ND	6.6/5.5	13	<5	<5	<50	<1	0.4	0.31
Carbon Tetrachloride	ND	2.0	ND/ND	ND/ND	1.1/ND	ND	<5	<5	<50	<1	<0.2	<4
Trichloroethene	110	100	4.7/6.4	620/820	100/160	240	68	47	2,200	49	15	15
Tetrachloroethene	ND	2.7	ND/ND	ND/ND	2.0/1.8	3.3	<5	<5	<50	2.2	1.6	<4
cis-1,2-Dichloroethene	ND	0.80	ND/ND	13/ND	2.1/1.9	2.8	<5	<5	<50	<1	<0.2	0.26
Toluene	ND	ND	ND/ND	ND/ND	ND/ND	ND	<5	<5	<50	<1	0.2	<4

ND: Not Detected.

<5: Less than the detection limit of 5.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 21 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR CW-4
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	06/19/91	01/15/92	03/18/92	05/19/92	08/10/92	01/16/93	03/10/93	06/18/93	08/19/93	11/20/93	02/18/94
1,1,1-Trichloroethane	ND	ND/ND	0.59	ND	ND/ND	<0.5	<0.5	<0.5	<0.2	<0.2	5.0
1,2,3-Trichlorobenzene	ND	ND/ND	ND	ND	ND/ND	0.59	<0.5	<0.5	<0.2	<0.2	<1
1,1-Dichloroethene	ND	ND/ND	1.2	1.0	0.60/0.66	<0.5	<0.5	1.7	<0.2	<0.2	6.7
Carbon Tetrachloride	ND	ND/ND	0.73	0.75	0.68/0.63	<0.5	<0.5	<0.5	<0.2	<0.2	1.2
Trichloroethene	1.5	ND/ND	10	4.7	3.9/3.8	1.4	2.5	20	1.0	0.6	65
Tetrachloroethene	ND	ND/ND	ND	ND	ND/ND	0.52	<0.5	0.60	0.32	0.3	1.2
m- & p-Xylenes	ND	ND/ND	0.69	ND	ND/ND	0.59	<0.5	<0.5	<0.2	<0.2	<1
Naphthalene	ND	ND/ND	ND	ND	ND/ND	0.59	<0.5	<0.5	<0.2	<0.2	<5

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 22 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-6
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	08/20/91	09/17/91	01/15/92	03/18/92	05/20/92	06/12/92	01/16/93	03/02/93	06/18/93	11/20/93	02/18/94
1,1,1-Trichloroethene	ND	ND	ND	ND	ND	ND	0.51	<0.5	<0.5	<0.2	<0.2
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	0.25	<0.2
Freon 113	ND	ND	ND	ND	ND	ND	<0.5	0.66	<0.5	<0.2	<0.2
Trichloroethene	ND	ND	ND	ND	0.69	0.51	0.59	0.55	0.51	0.78	0.97
Tetrachloroethene	ND	ND	ND	ND	0.52	ND	0.85	0.90	0.69	0.97	0.66
m- & p-xylenes	ND	ND	ND	ND	ND	ND	0.63	<0.5	<0.5	<0.2	<0.2
Naphthalene	ND	ND	ND	ND	ND	ND	0.53	<0.5	<0.5	0.45	<1
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	0.63	0.30

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 23 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-4
(all results in micrograms per liter)

Organic Constituent	Sample Date											
	08/22/91	09/15/91	01/16/92	03/17/92	05/20/92	08/11/92	01/14/93	03/03/93	06/17/93	08/18/93	11/26/93	02/18/94
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.3	<0.2
Naphthalene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.4	<1
Trichloroethene	0.63	0.77	1.2	1.8	0.85	0.52	1.7	1.7	1.2	0.84	1.2	1.2
Tetrachloroethene	ND	ND	1.1	0.98	ND	ND	0.95	1.6	1.1	0.87	1.2	0.94
cis-1,2-dichloroethene	ND	ND	0.65	ND	ND	ND	<0.5	<0.5	0.50	0.36	0.4	0.56
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.3	<0.2

ND: Not Detected.
<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 24 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-7
(all results in micrograms per liter)

Organic Constituent	Sample Date		
	09/08/93	11/29/93	02/16/94
1,1,1-Trichloroethane	0.19	<0.5	<40
1,1,2,2-Tetrachloroethane	<0.2	<0.5	<40
1,2,4-Trichlorobenzene	<0.2	<0.5	<40
Trichloroethene	33	7.7	3,100
Tetrachloroethene	0.21	<0.5	<40
cis-1,2-dichloroethene	0.58	<0.5	56
			0.46
			0.50
			35
			0.72
			1.0

ND: Not Detected.
<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihaloethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 25 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-6
(all results in micrograms per liter)

Organic Constituent	Sample Date	
	09/09/93	11/29/93
1,1,1-Trichloroethane	<0.2	<0.5
1,2,3-Trichlorobenzene	<0.2	<0.5
1,2,4-Trichlorobenzene	<0.2	<0.5
1,2-Dichloroethane	0.17	<0.5
Carbon Tetrachloride	<0.2	<0.5
Trichloroethene	0.80	0.9
Tetrachloroethene	0.30	0.6
cis-1,2-dichloroethene	0.22	0.6

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride and chloroform) that were reported at 10 µg/l or less are not included in this table.

TABLE 26 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-4
(all results in micrograms per liter)

Organic Constituent	Sample Date	
	09/08/93	11/29/93
1,1,1-Trichloroethane	<0.2	<0.5
1,1-Dichloroethane	<0.2	<0.5
Dichlorodifluoromethane	1.0	<0.5
Trichloroethene	2.4	3.1
Tetrachloroethene	0.28	0.5
cis-1,2-dichloroethene	0.31	<0.5

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., acetylene chloride and trichloroethane) that were reported at 10 µg/l or less are not included in this table.

TABLE 27 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-10
(all results in micrograms per liter)

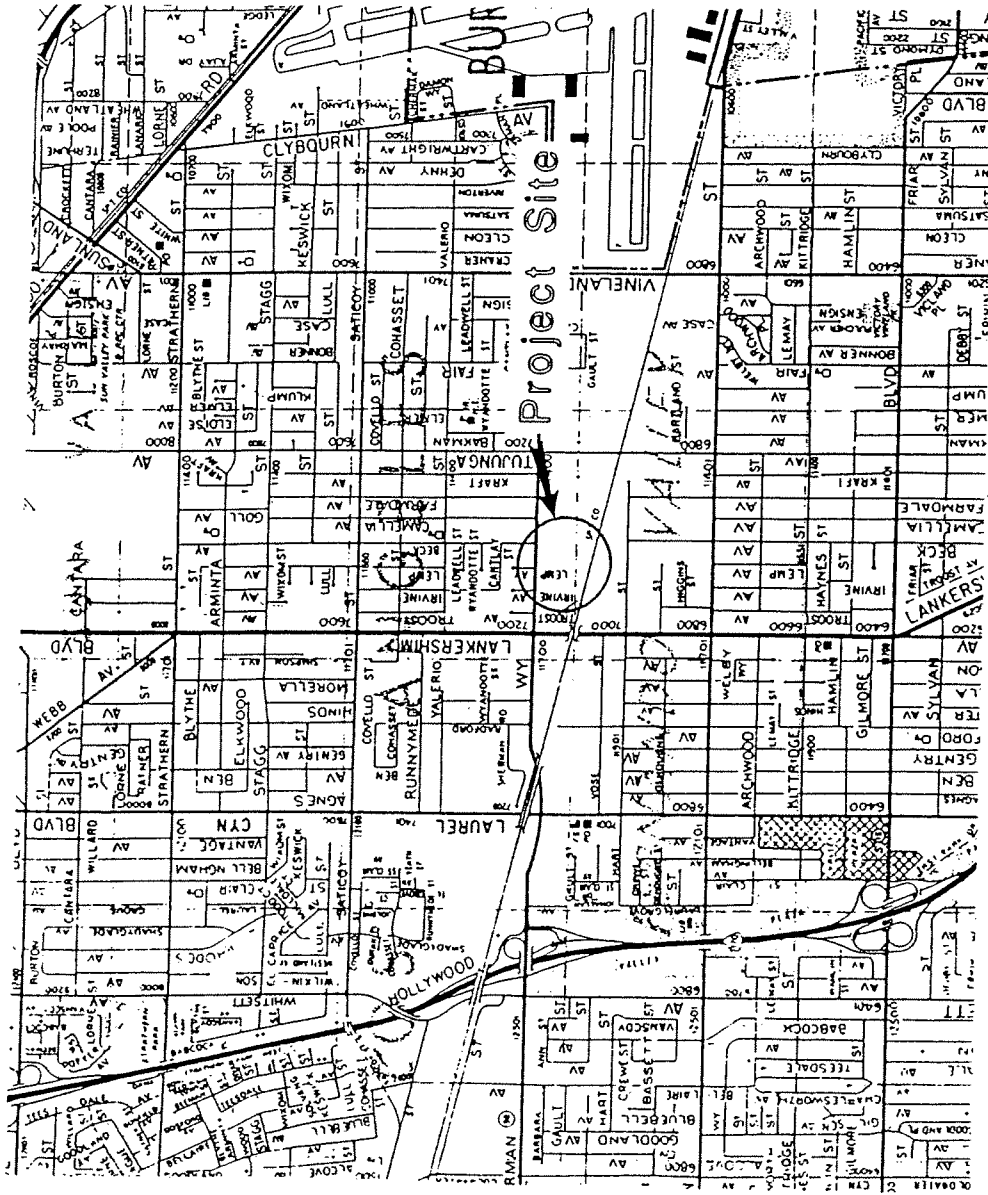
Organic Constituent	Sample Date			
	09/09/93	11/29/93	02/16/94	03/07/94
1,1-Dichloroethane	0.10	<0.5	<40	<2
Dichlorodifluoromethane	4.2	<0.5	<40	<2
1,1,1-Trichloroethane	0.14	<0.5	<40	<2
Trichloroethene	50	15	2,300	210
Tetrachloroethene	1.5	1.2	<40	<2
cis-1,2-dichloroethene	1.3	<0.5	52	4.4

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

FIGURES



Base Map: The Thomas Guide, Los Angeles & Orange Counties, 1987, Page 16.

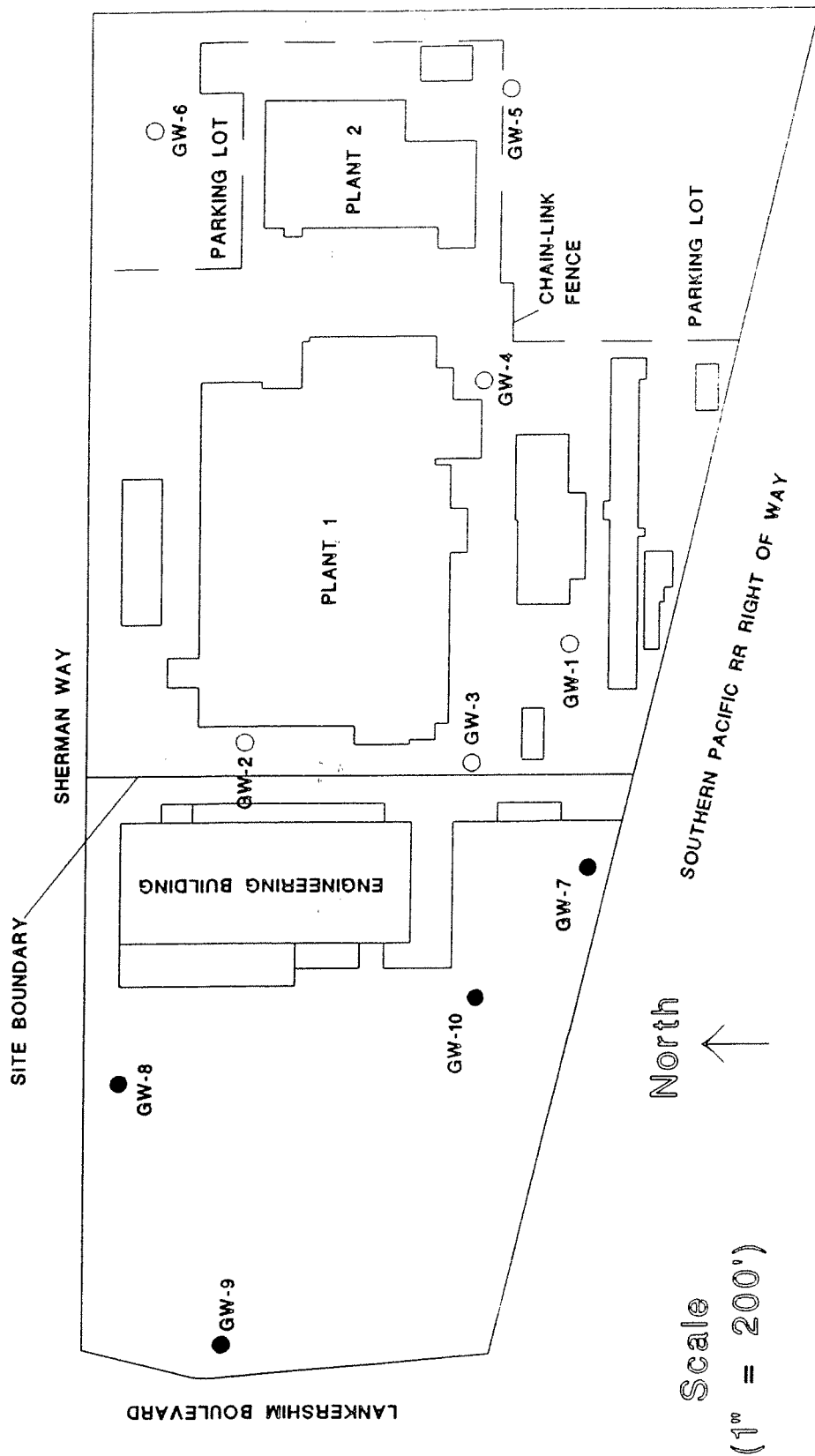
North
 ↑
 Scale
 (1" = 2800')

ALLIEDSIGNAL
 AEROSPACE COMPANY
 North Hollywood Facility

VICINITY MAP

FIGURE 1

SEACOR



Scale
(1" = 200')

North
↑

Legend:

- Denotes approximate location of onsite monitoring well.
GW-6
- Denotes approximate location of offsite monitoring well.
GW-10

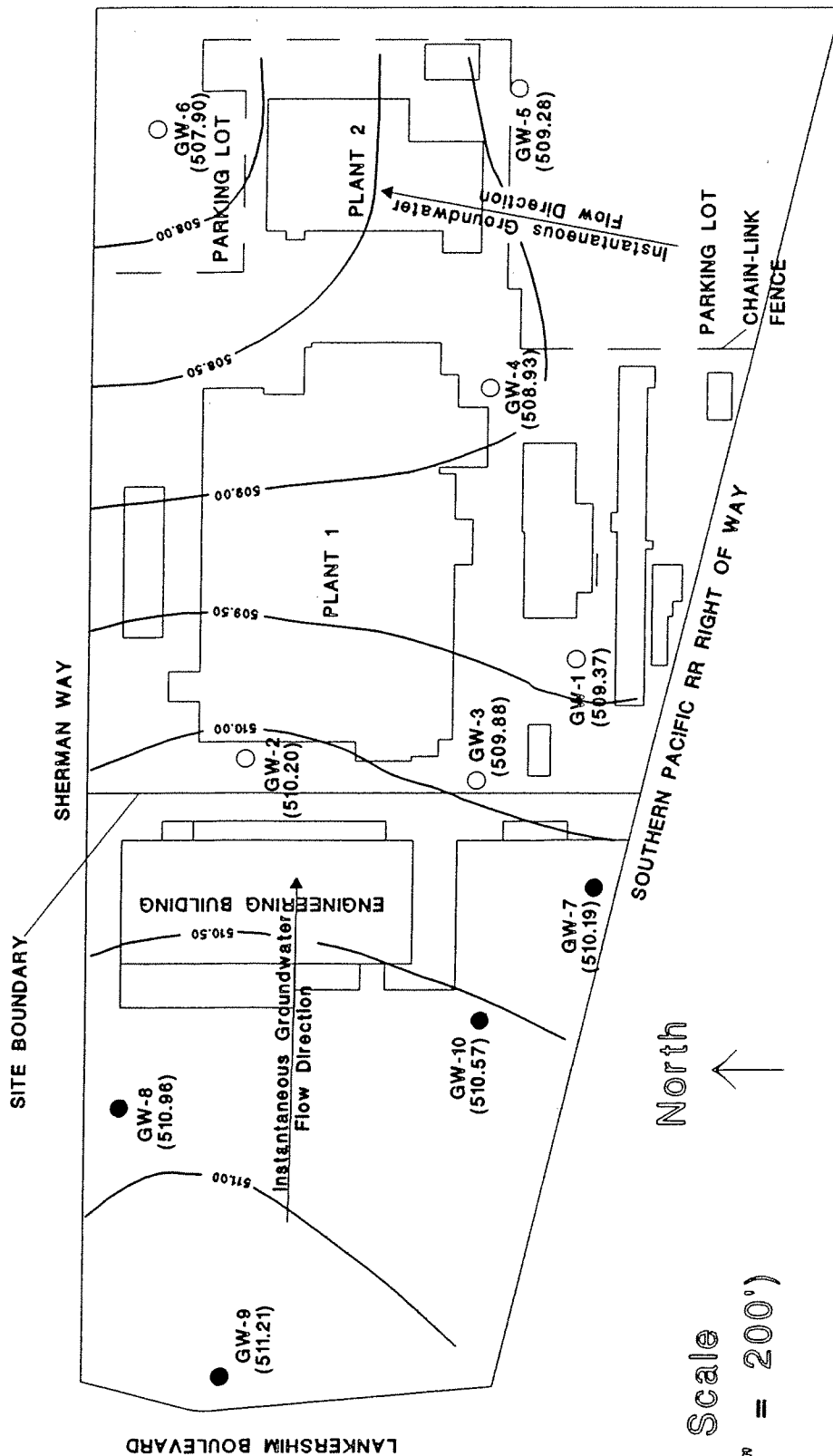
SITE MAP

FIGURE 2

ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility

File Name: AS2-A57SM2

SEACOR



Legend:

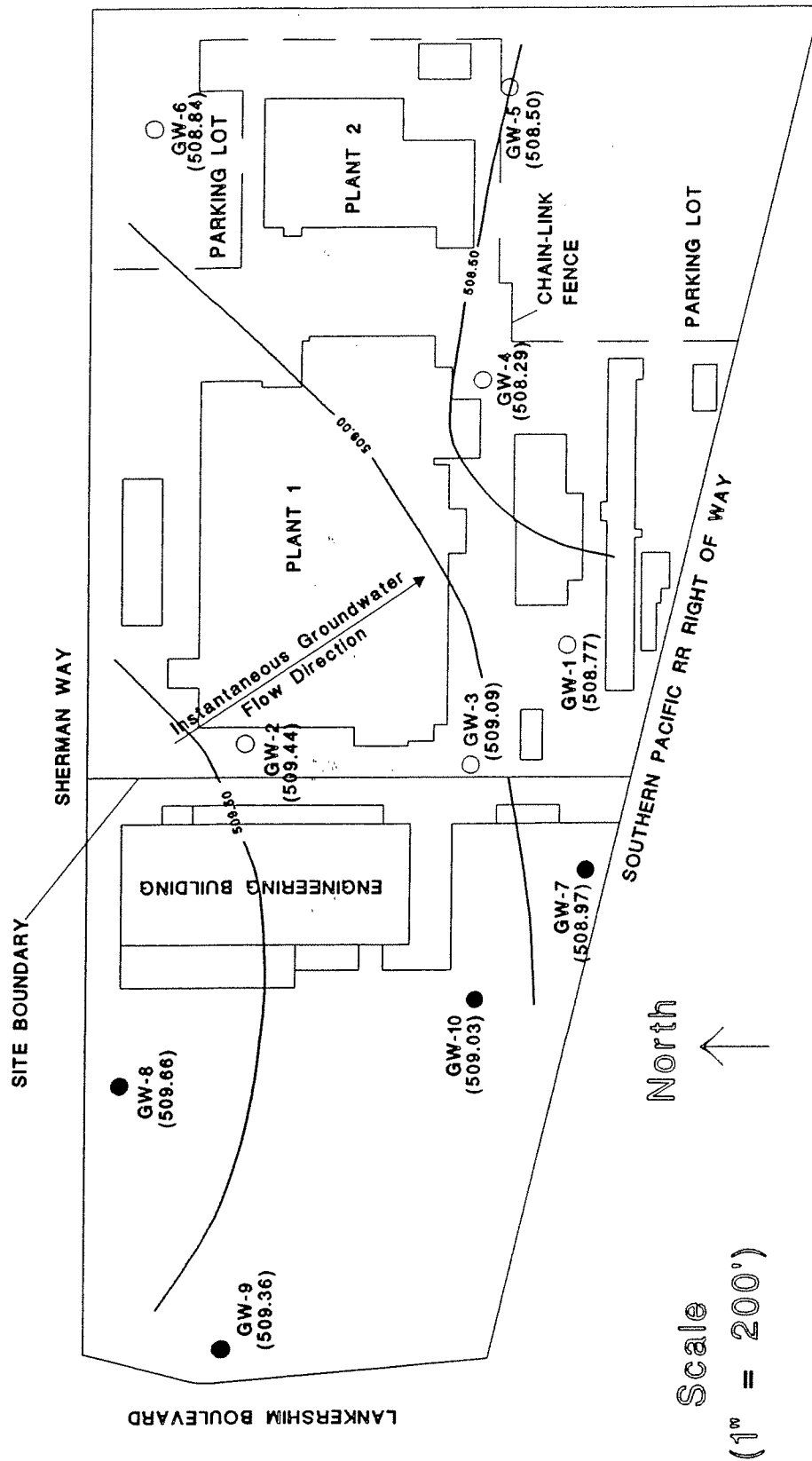
- Denotes approximate location of onsite monitoring well.
- Denotes approximate location of offsite monitoring well.
- (509.37) Denotes groundwater surface elevation in feet above mean sea level.
- 508.00 — Denotes groundwater contour line.

GROUNDWATER
CONTOUR MAP
(01/07/84)
FIGURE 3

ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility

File Name: AS3-A57G0194

SEACOR



Note: Groundwater measurements obtained on February 15, 1994.

Legend:

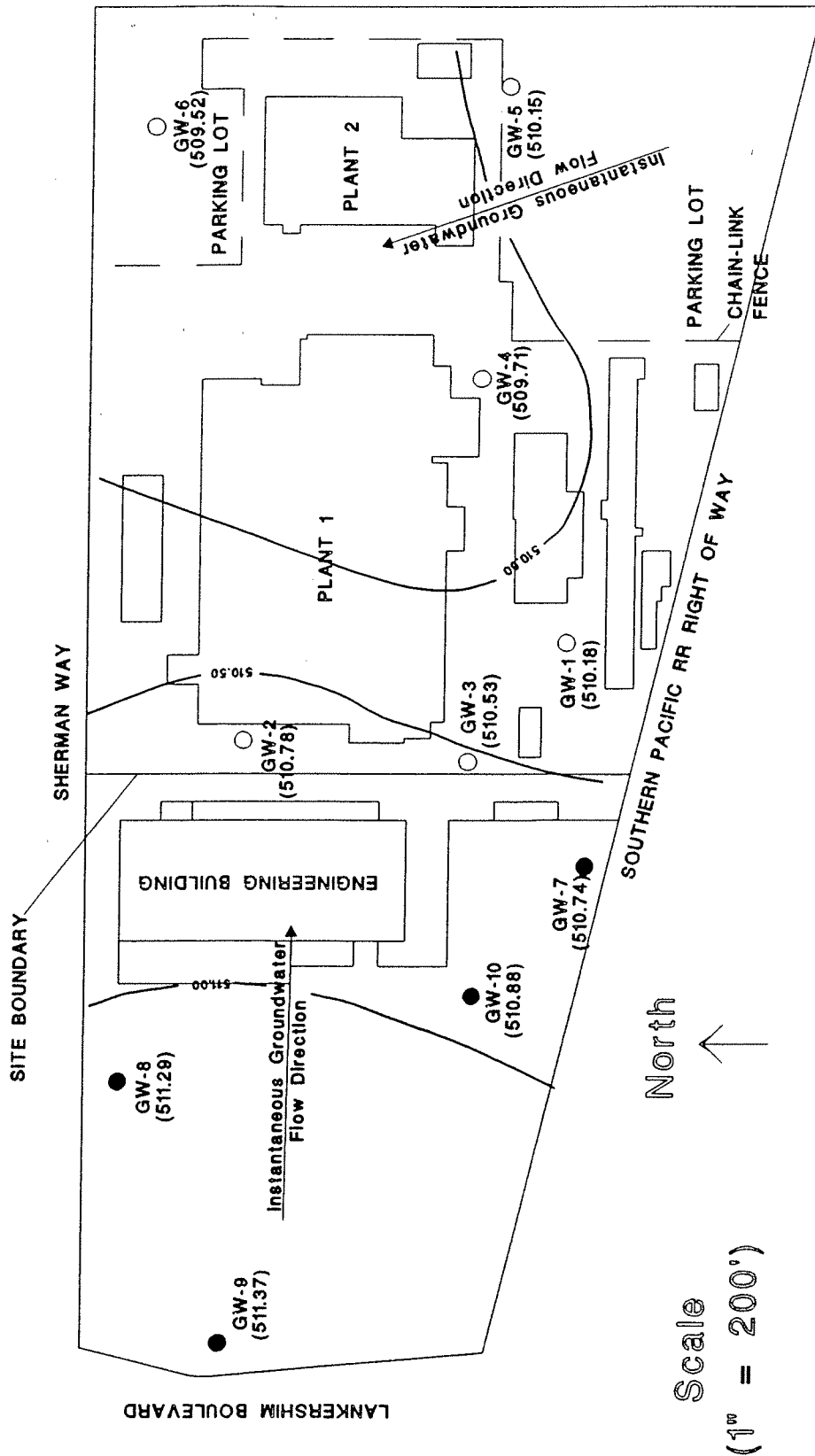
- Denotes approximate location of onsite monitoring well.
- Denotes approximate location of offsite monitoring well.
- 509.03) Denotes groundwater surface elevation in feet above mean sea level.
- 509.00 — Denotes groundwater contour line.
- (NM) Not measured

GROUNDWATER
CONTOUR MAP
(02/15/94)
FIGURE 4

ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility

File Name: AS3-A57G0294

SEACOR



Legend:

- Denotes approximate location of onsite monitoring well.
- Denotes approximate location of offsite monitoring well.
- (510.18) Denotes groundwater surface elevation in feet above mean sea level.
- 510.00 — Denotes groundwater contour line.

GROUNDWATER CONTOUR MAP

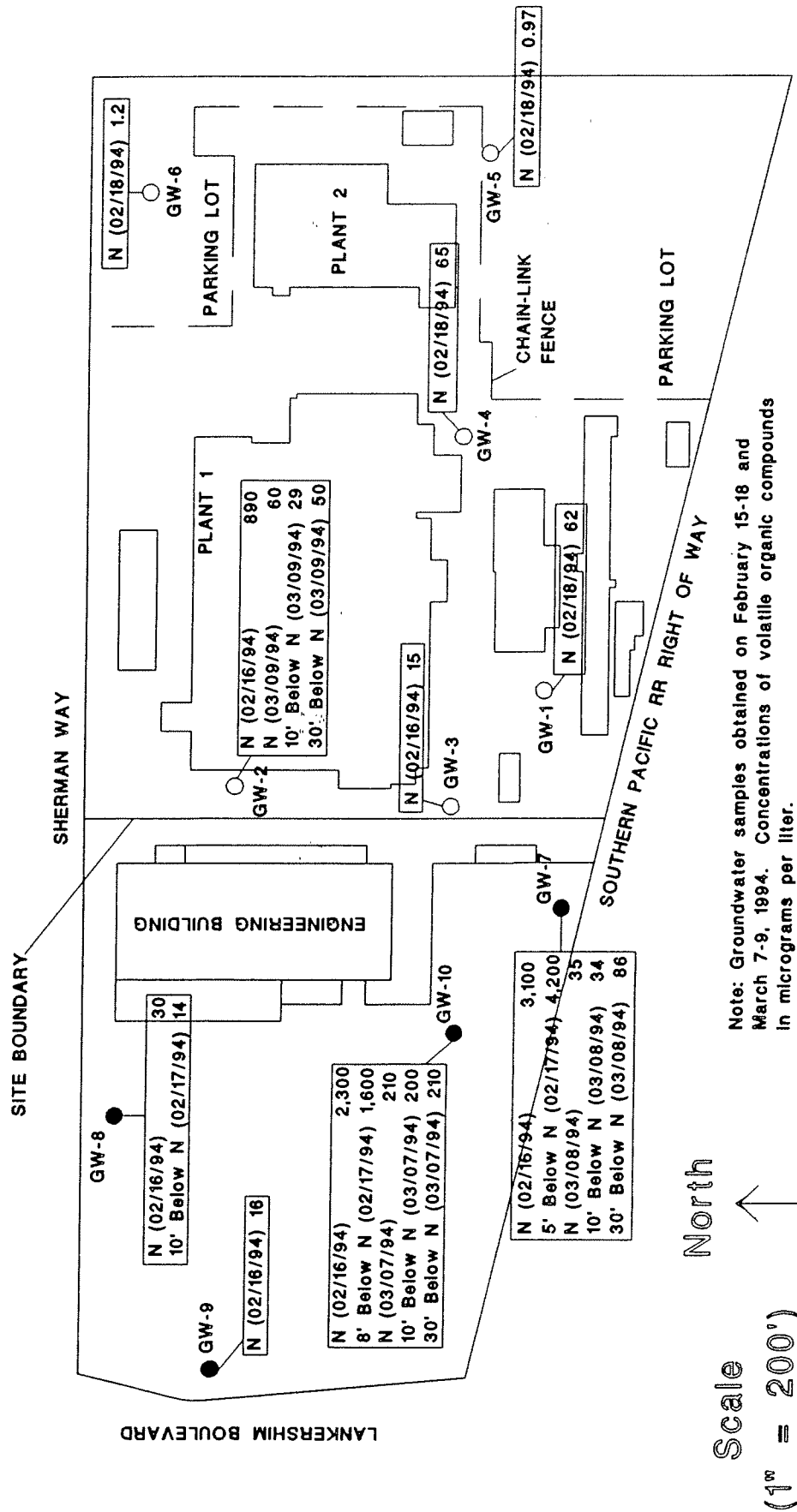
(03/07/94)

FIGURE 5

ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility

File Name: AS3-A57G0394

SEACOR



Legend:

N Normal Sampling Depth
 5' Below N 5 feet Below Normal Sampling Depth

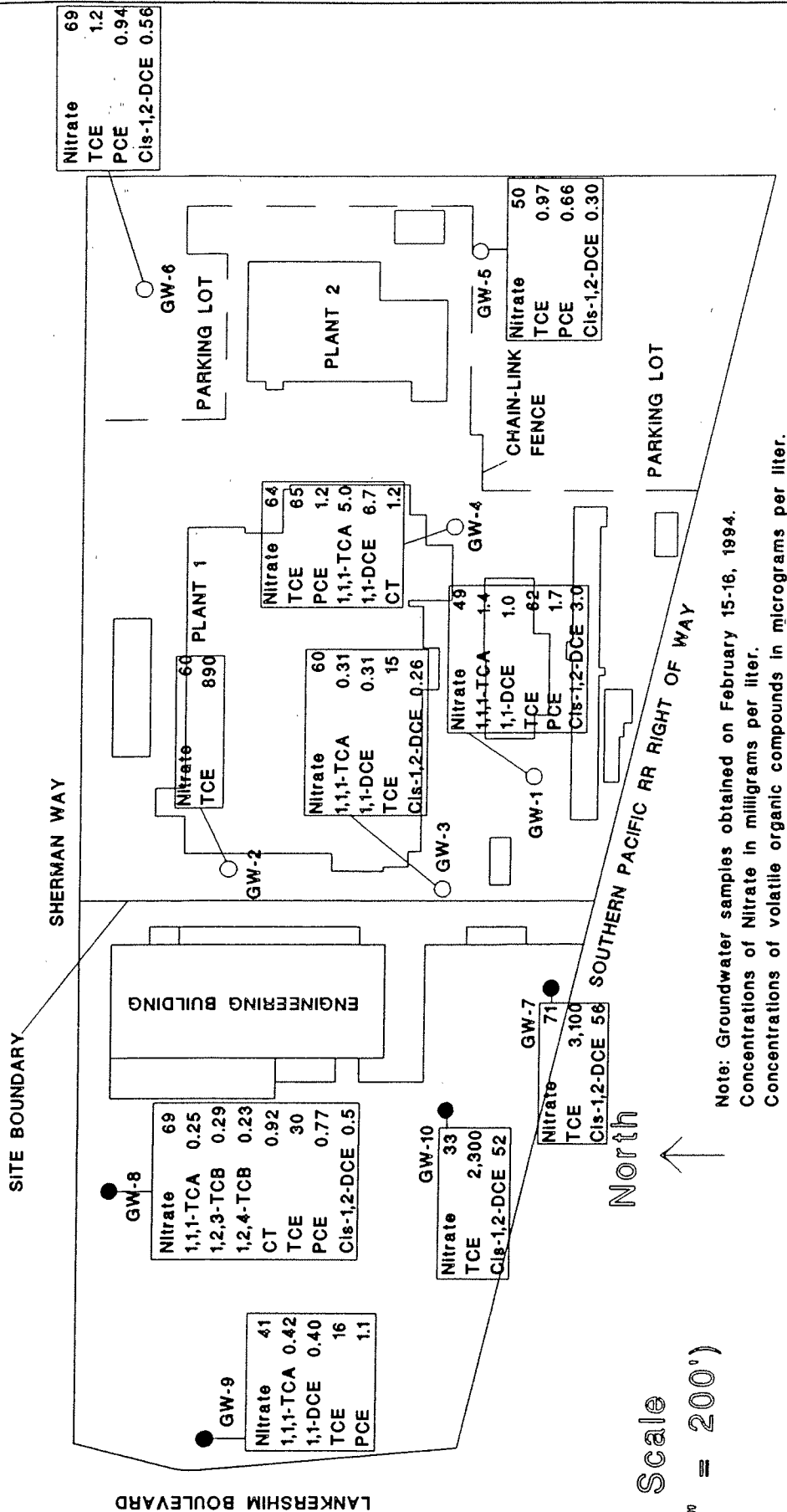
ALLIEDSIGNAL
 AEROSPACE COMPANY
 North Hollywood Facility

TCE
 CONCENTRATION MAP
 FIGURE 6

File Name: AS3-A57394VM

SEACOR

004359



NITRATE AND VOC CONCENTRATION MAP (02/94) FIGURE 7

ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility

File Name: AS3-A57294VM

SEACOR

Figure 8
Historic Groundwater Elevation in GW-1

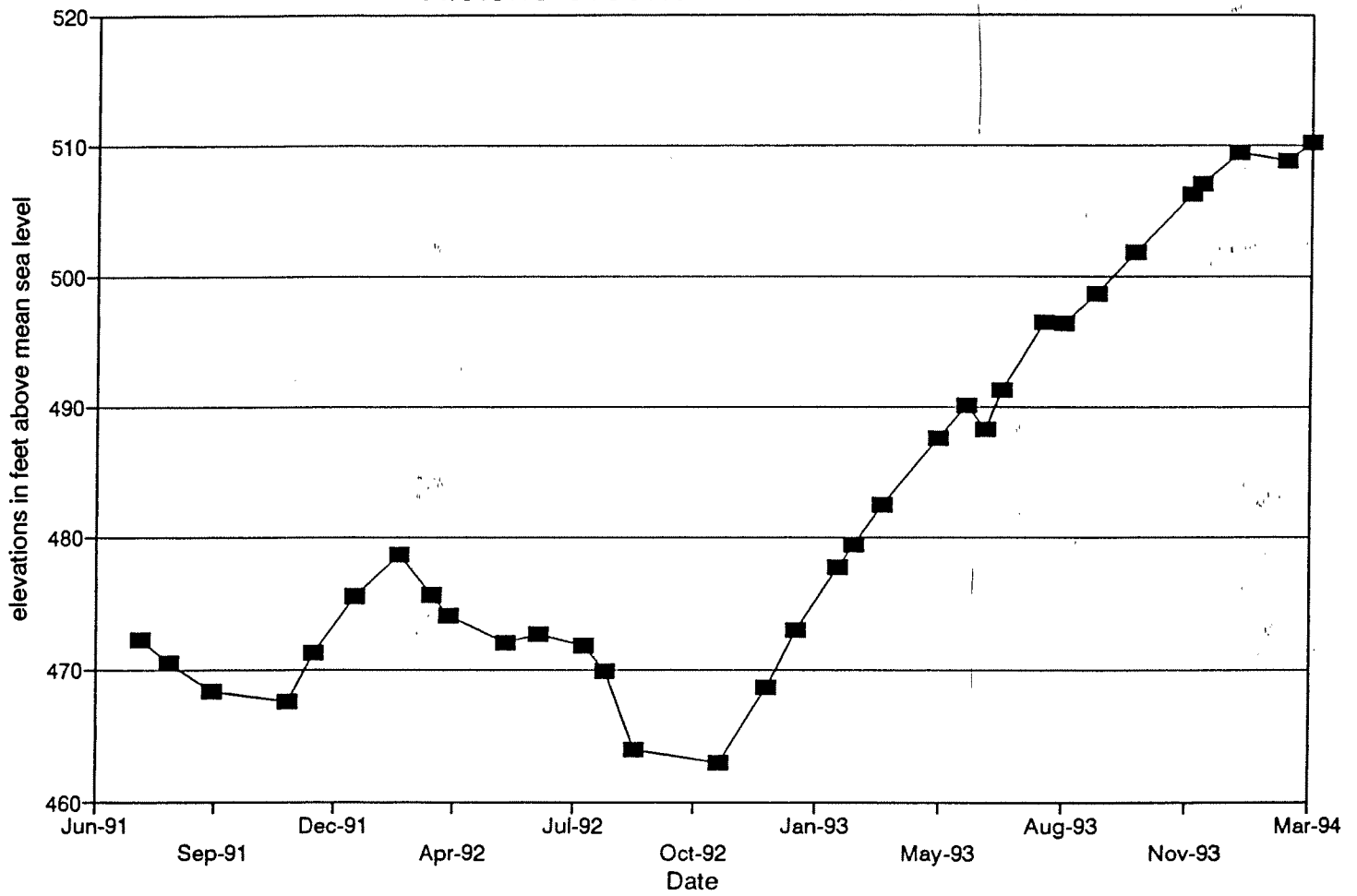


Figure 9
Nitrate Concentration in GW-1

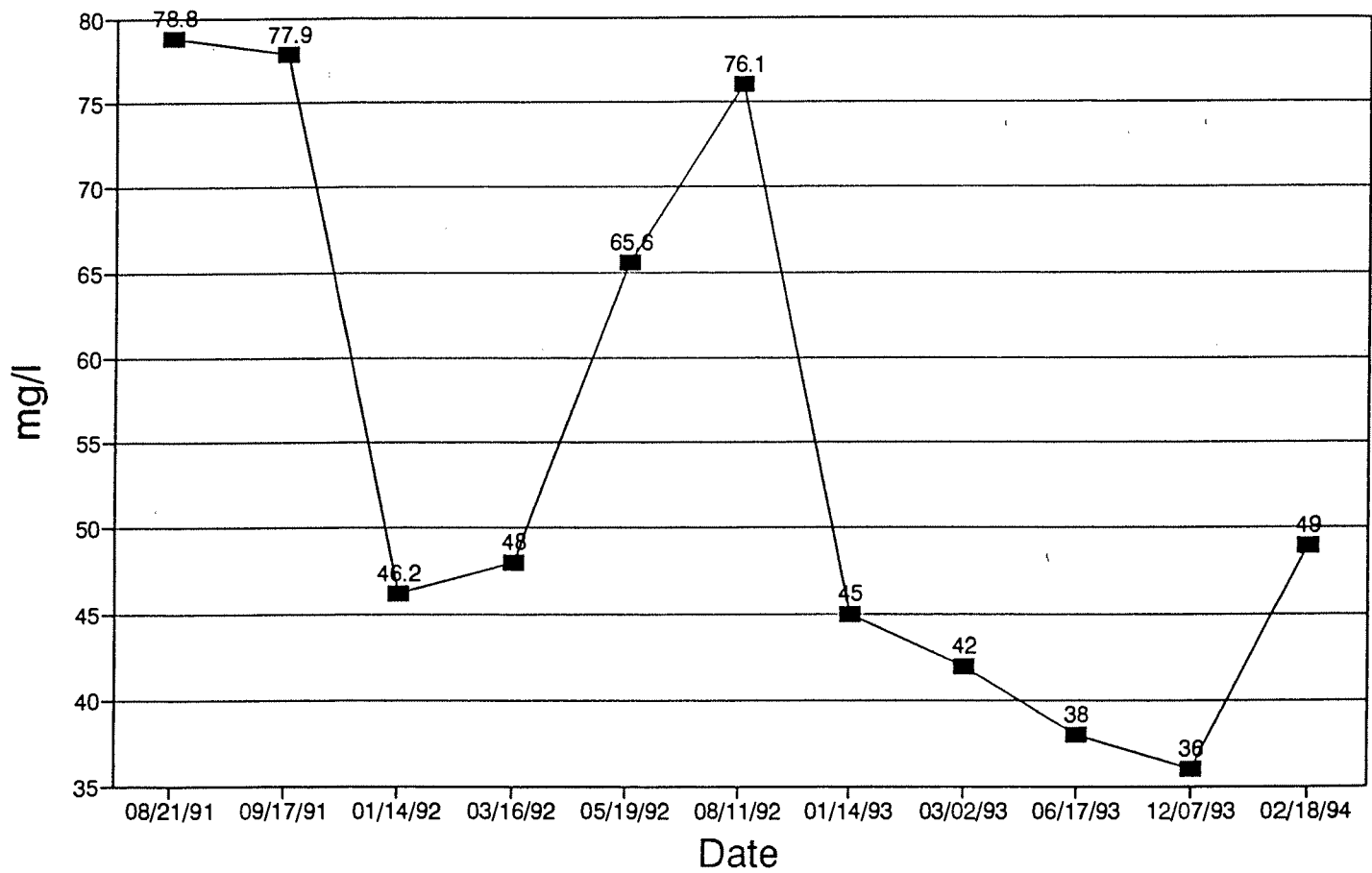


Figure 10
1,1,1-TCA Concentration in GW-1

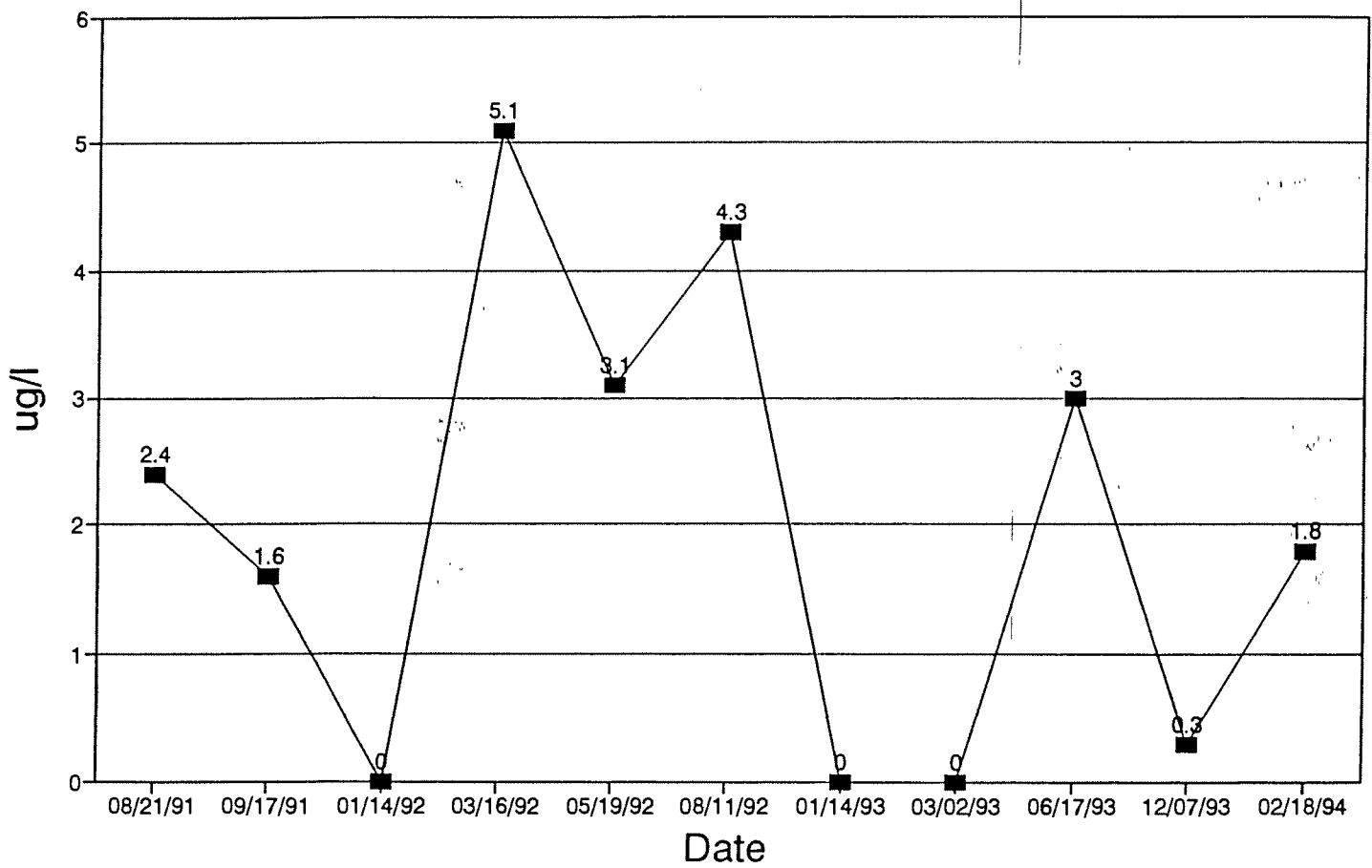


Figure 11
1,1-DCA Concentration in GW-1

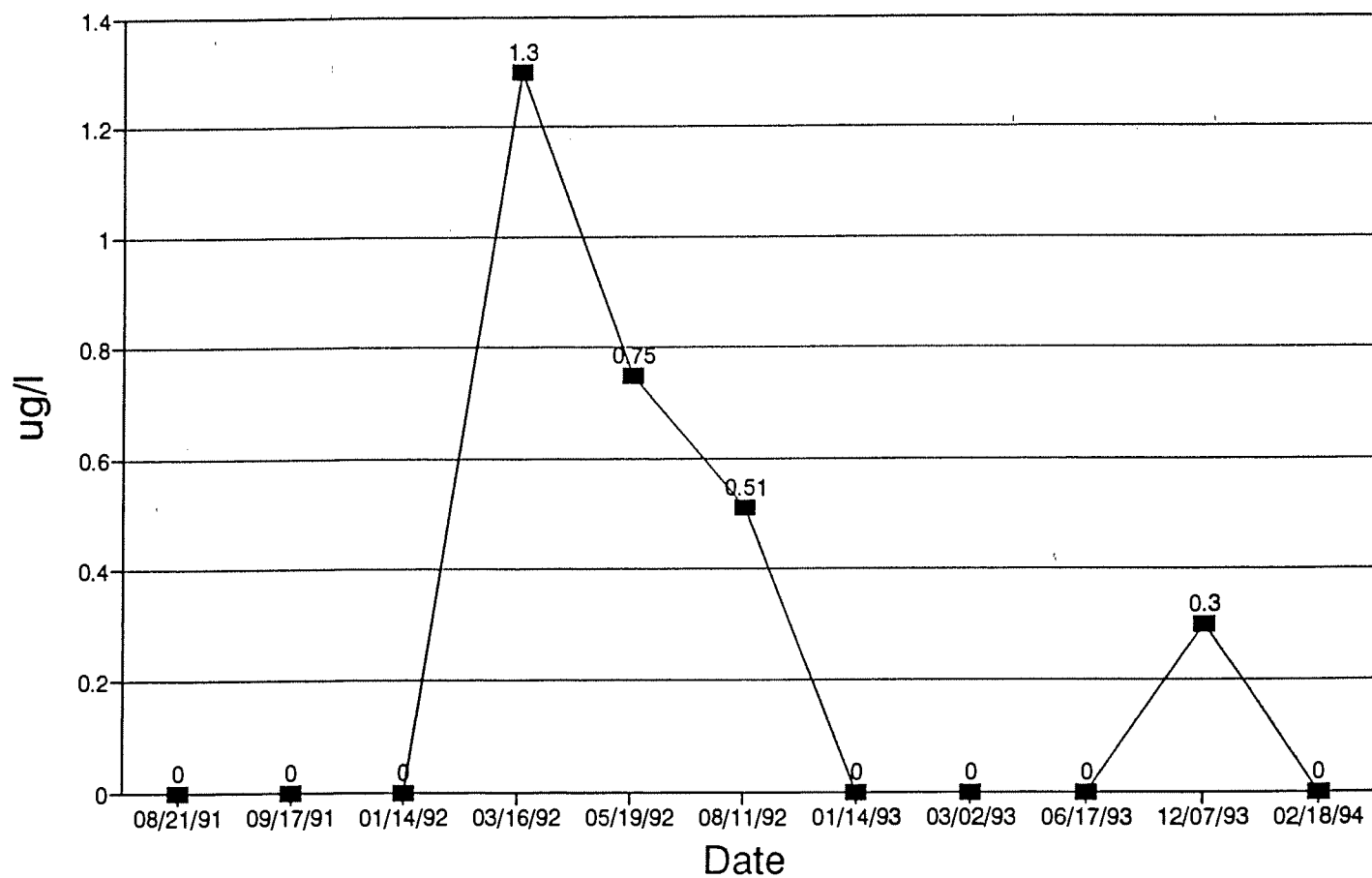


Figure 12
1,1-DCE Concentration in GW-1

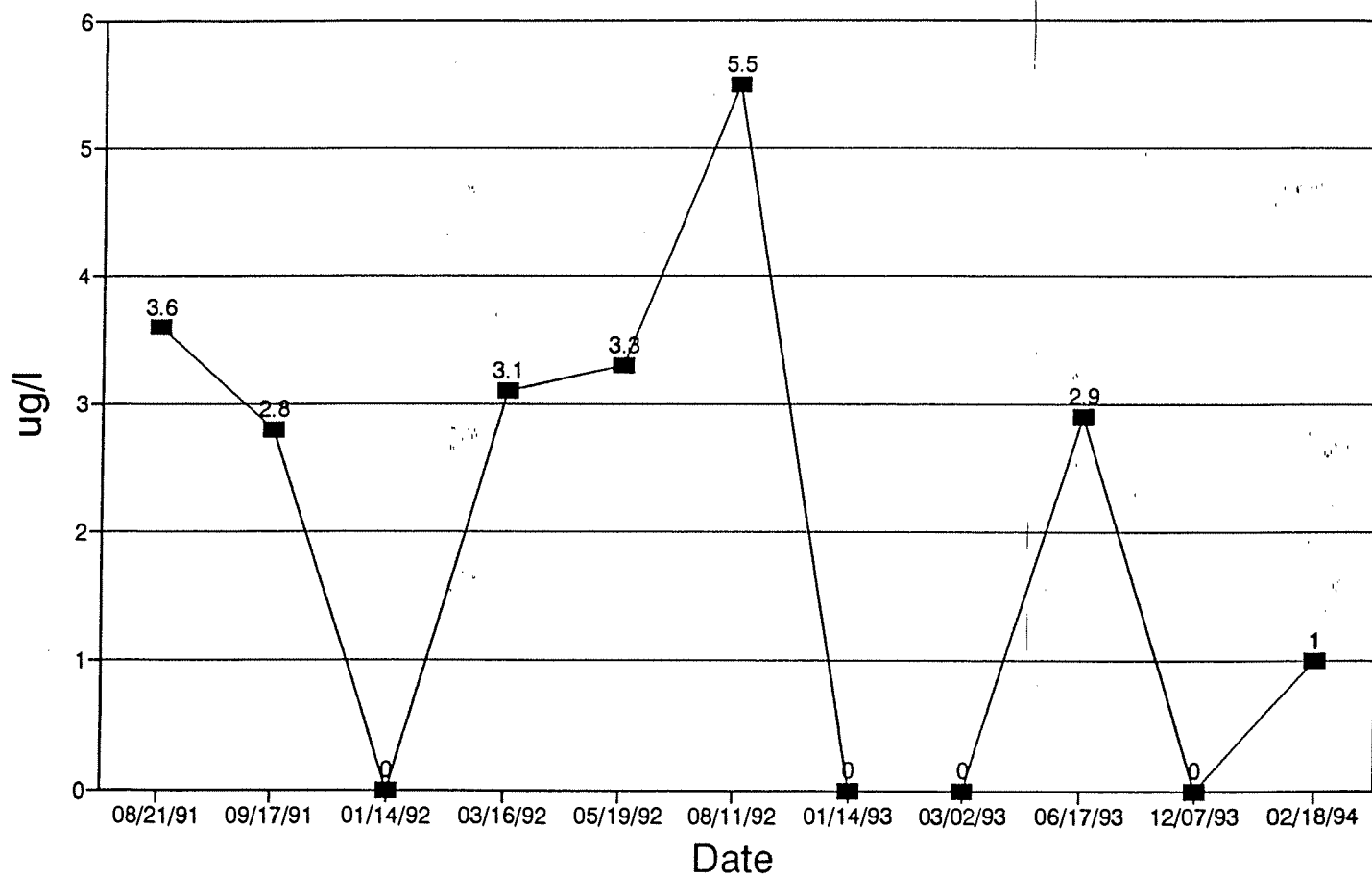


Figure 13
CCL4 Concentration in GW-1

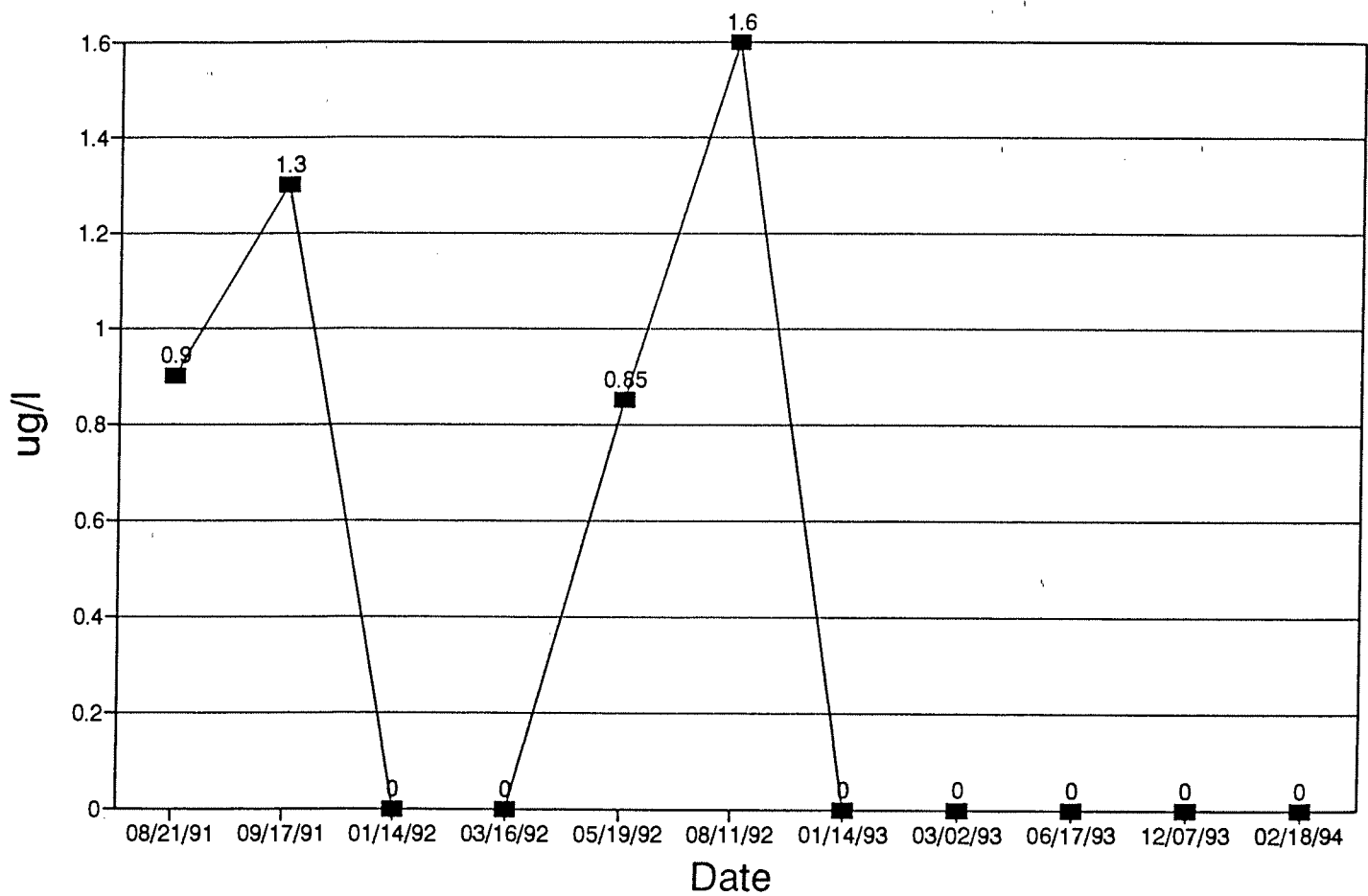


Figure 14
TCE Concentration in GW-1

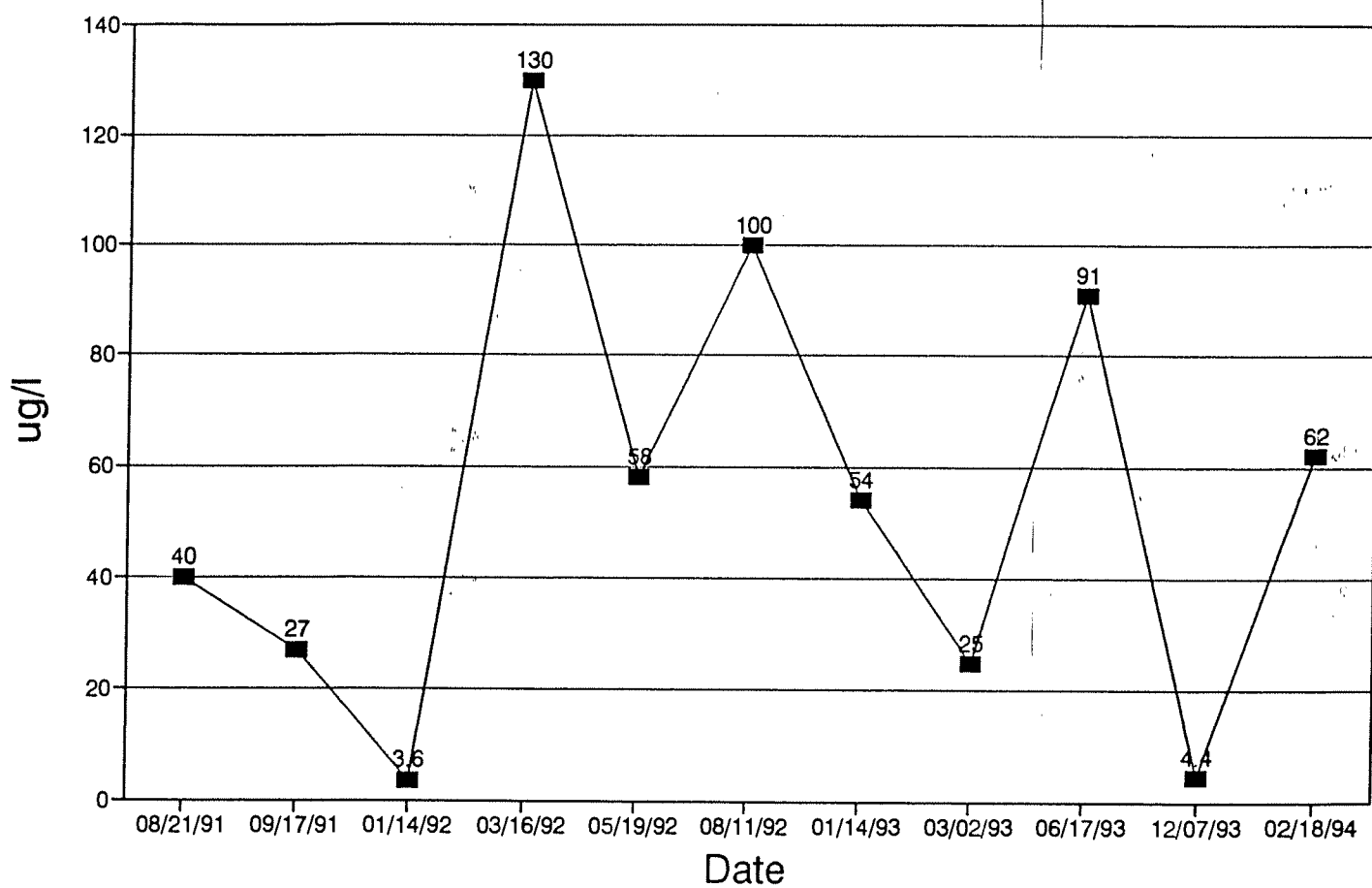


Figure 15
PCE Concentration in GW-1

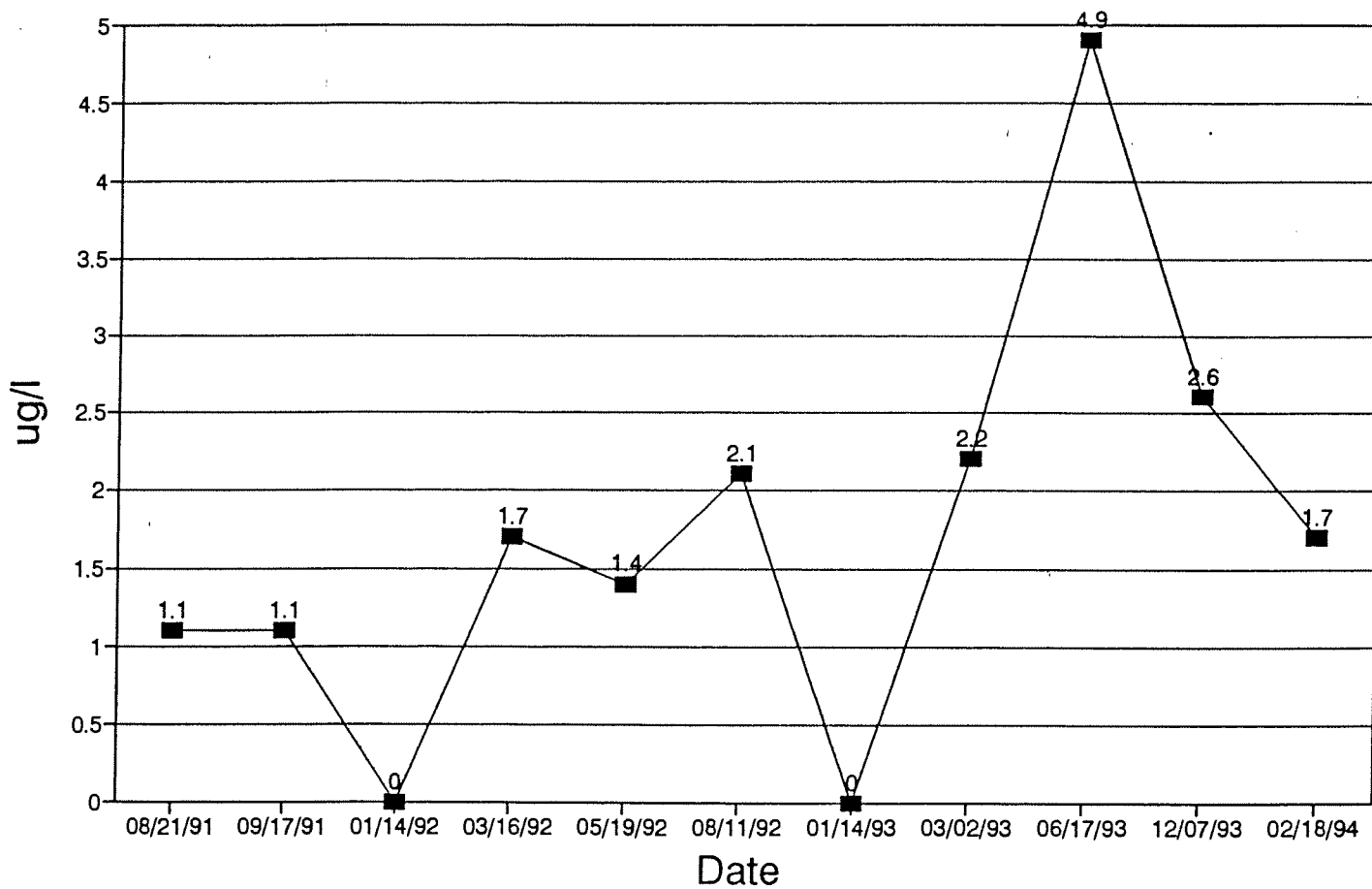


Figure 16
CIS-1,2-DCE Concentration in GW-1

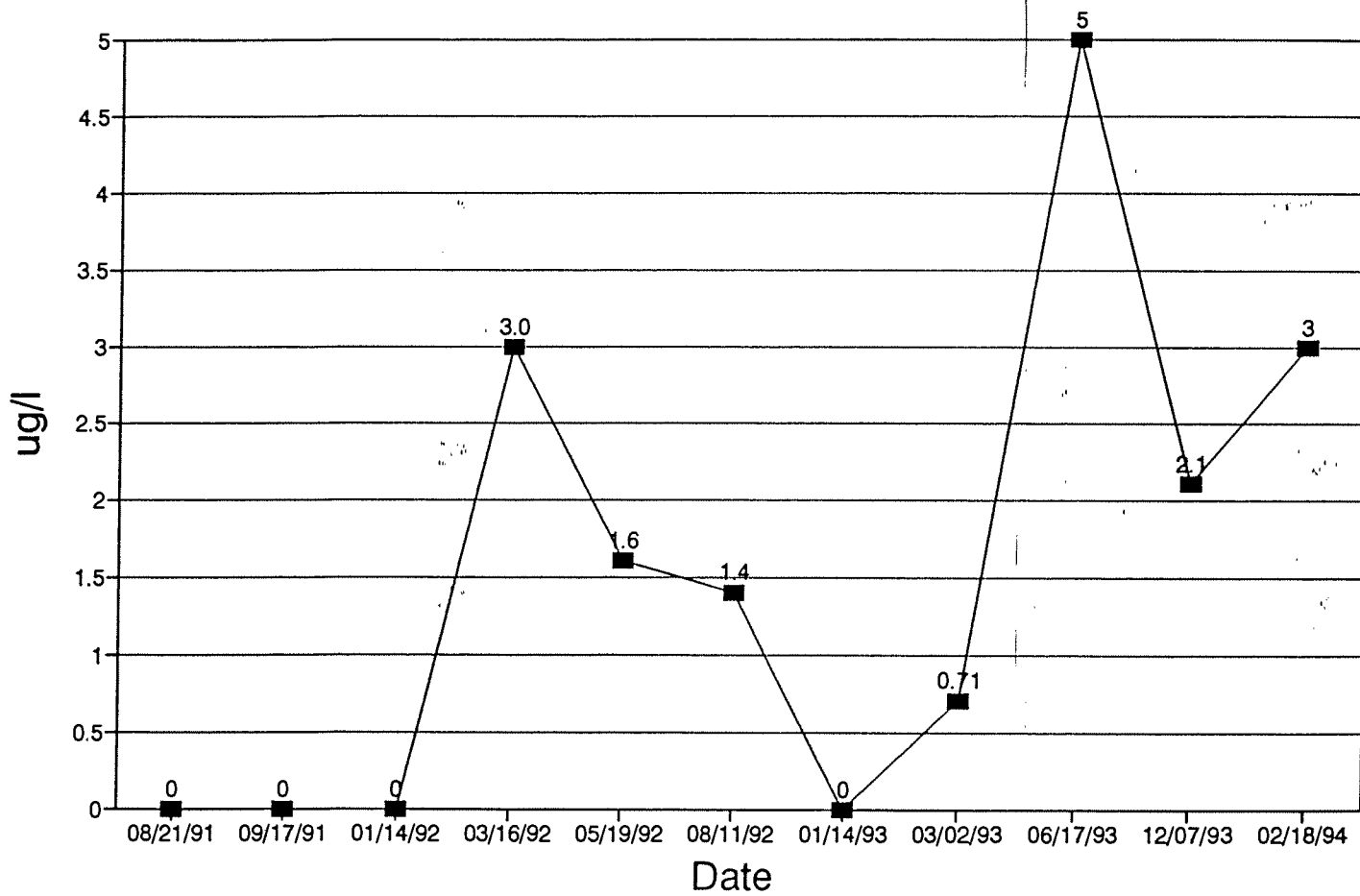


Figure 17
Historic Groundwater Elevation in GW-2

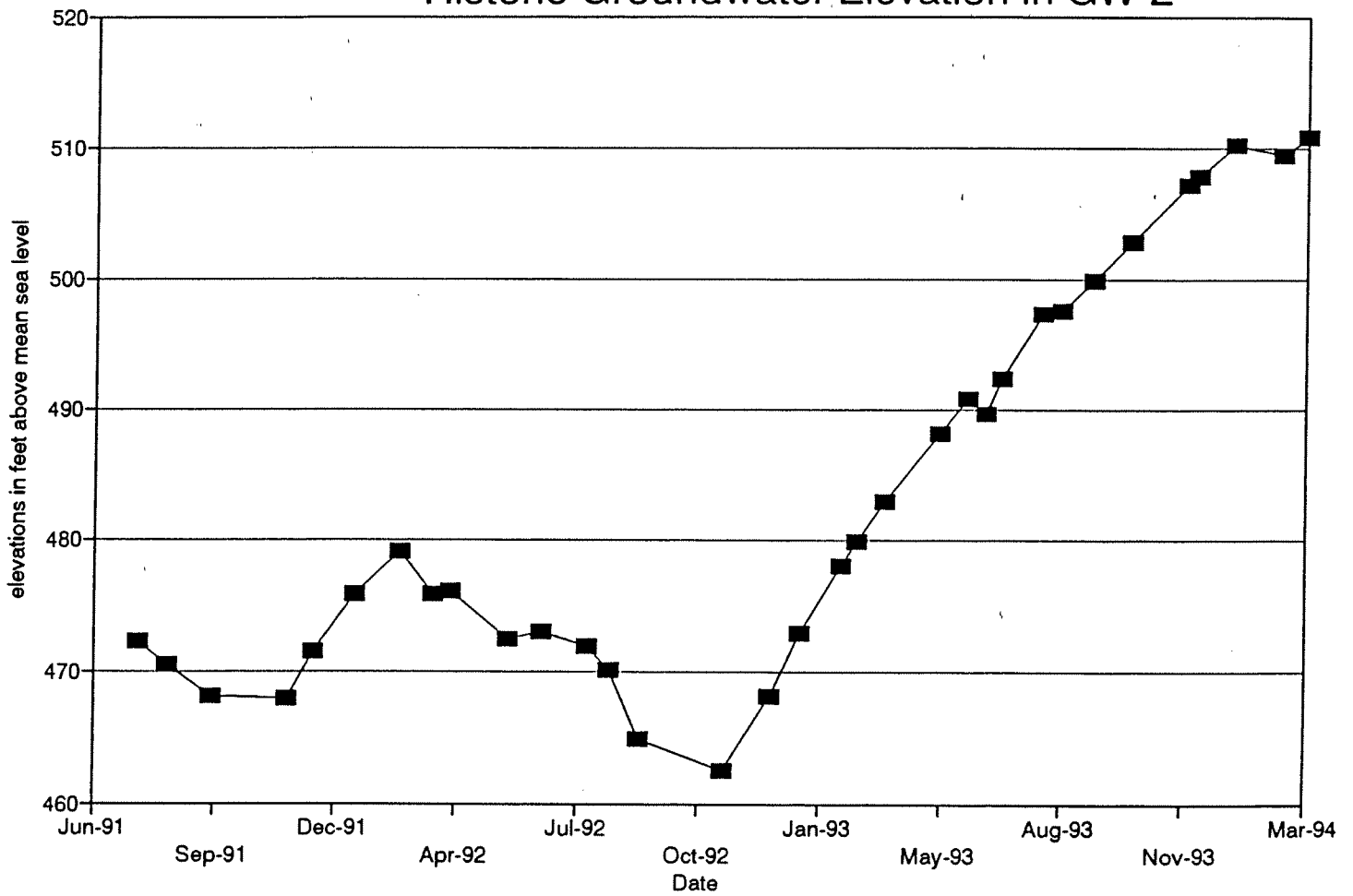


Figure 18
Nitrate Concentration in GW-2

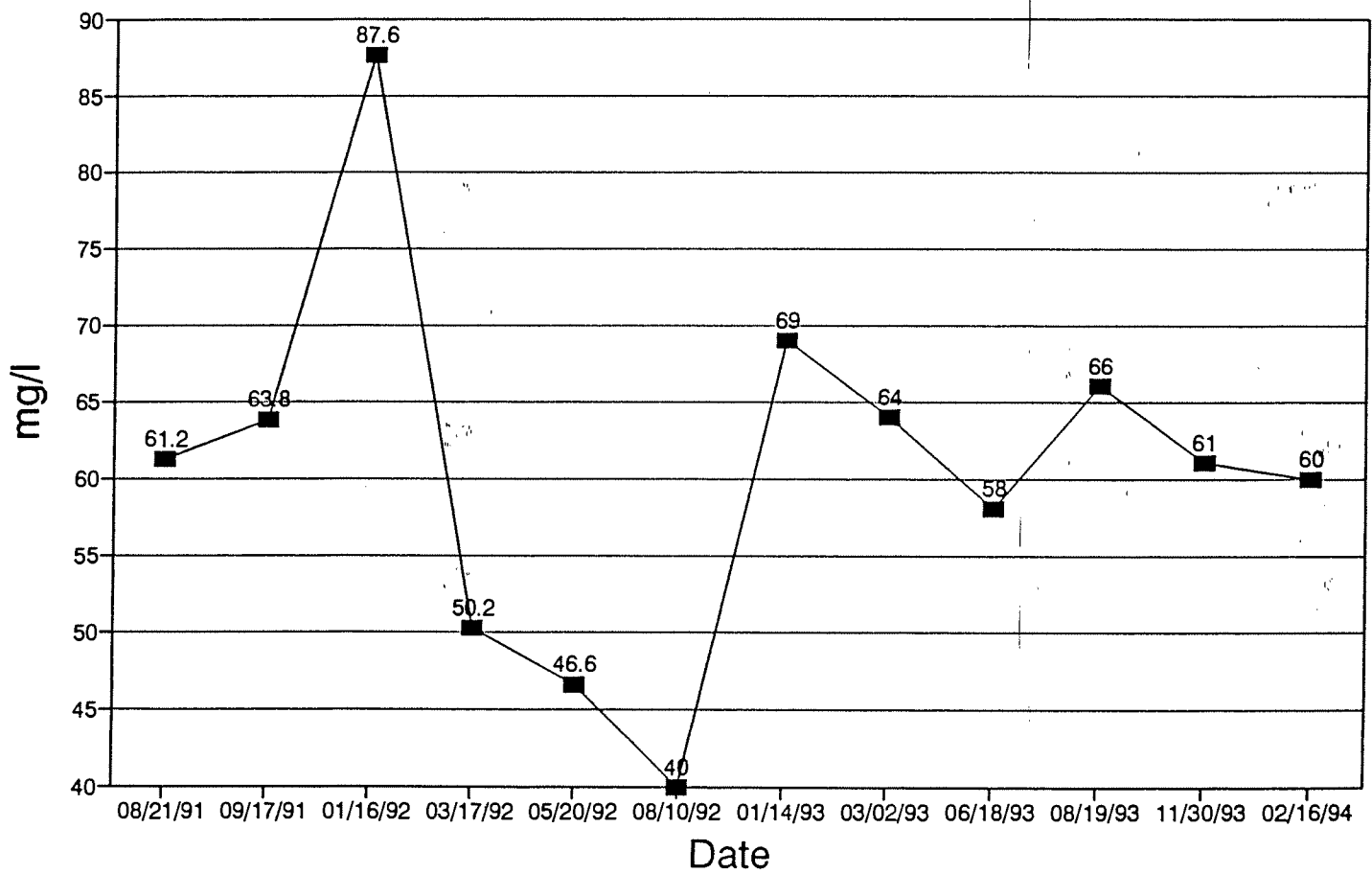


Figure 19
1,1,1-TCA Concentration in GW-2

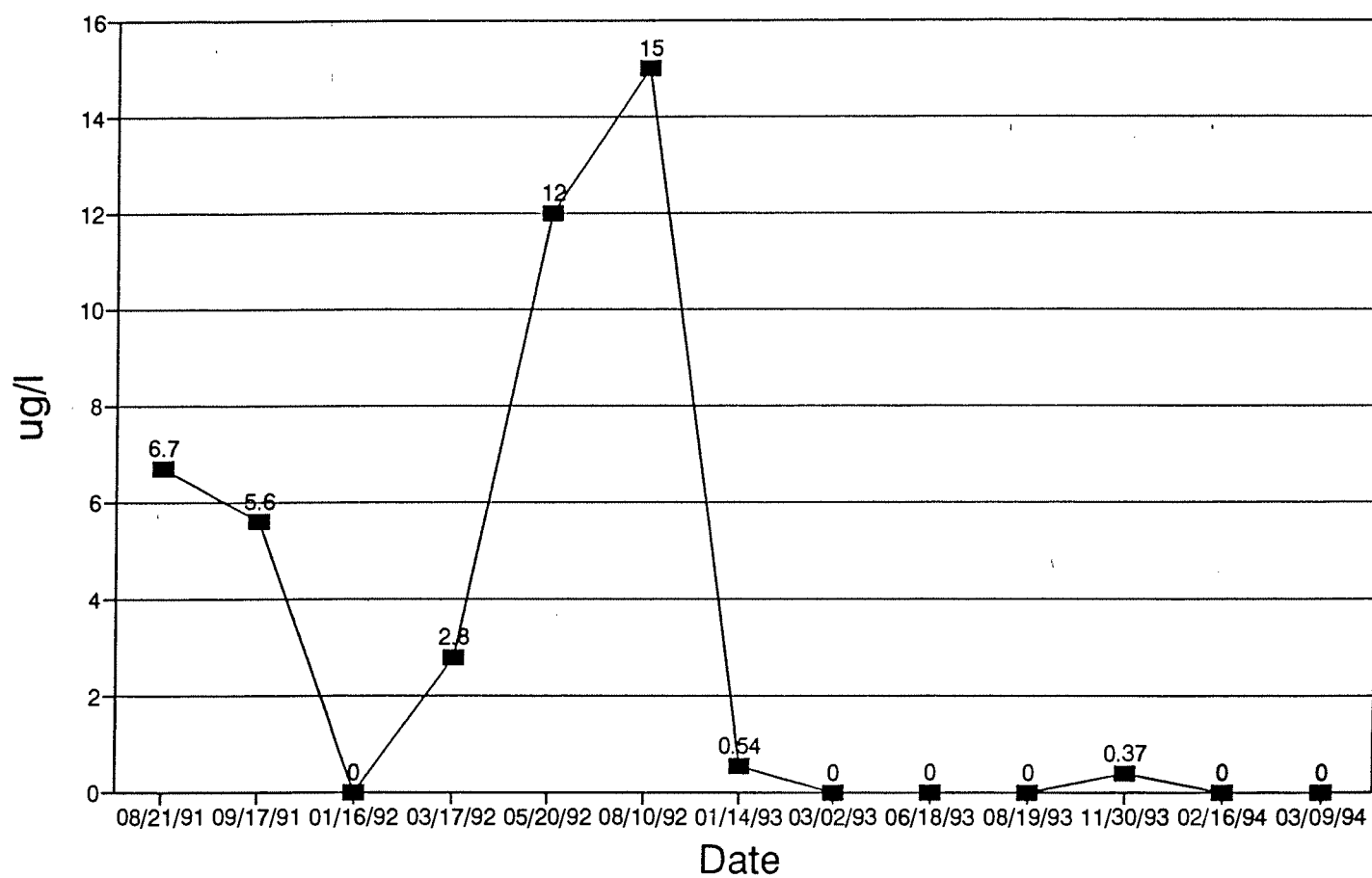


Figure 20
1,1-DCE Concentration in GW-2

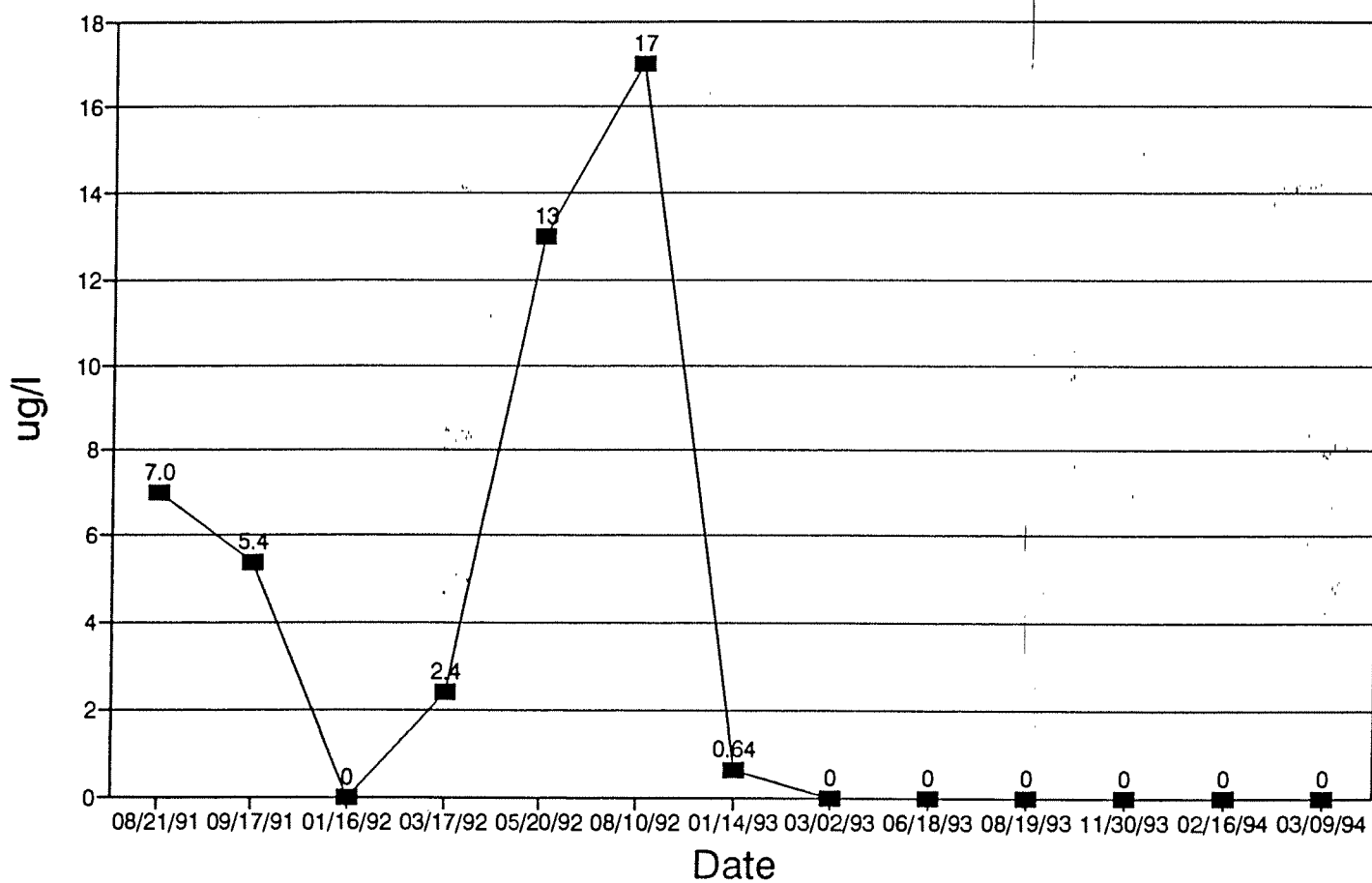


Figure 21
CCL4 Concentration in GW-2

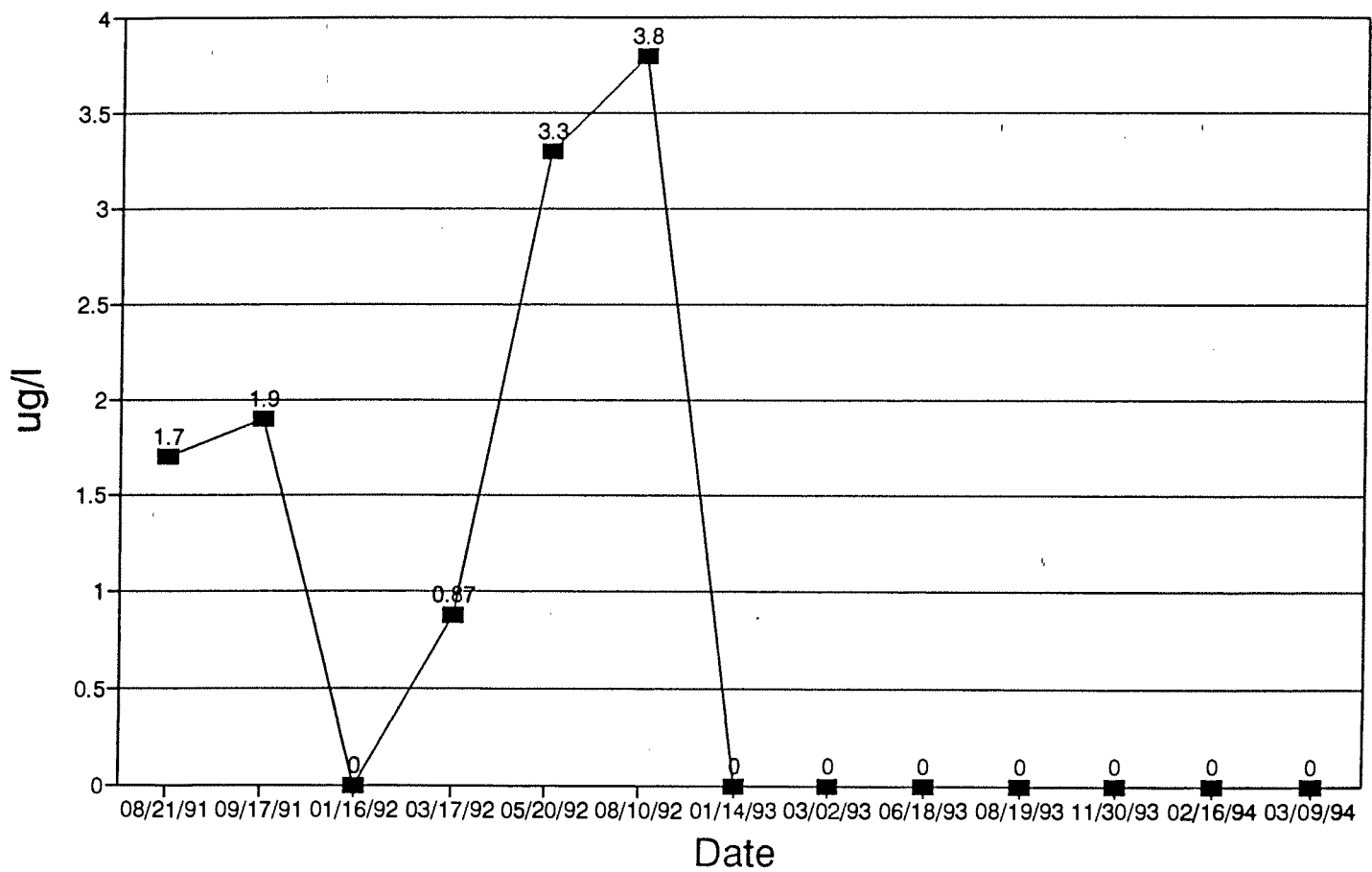


Figure 22
TCE Concentration in GW-2

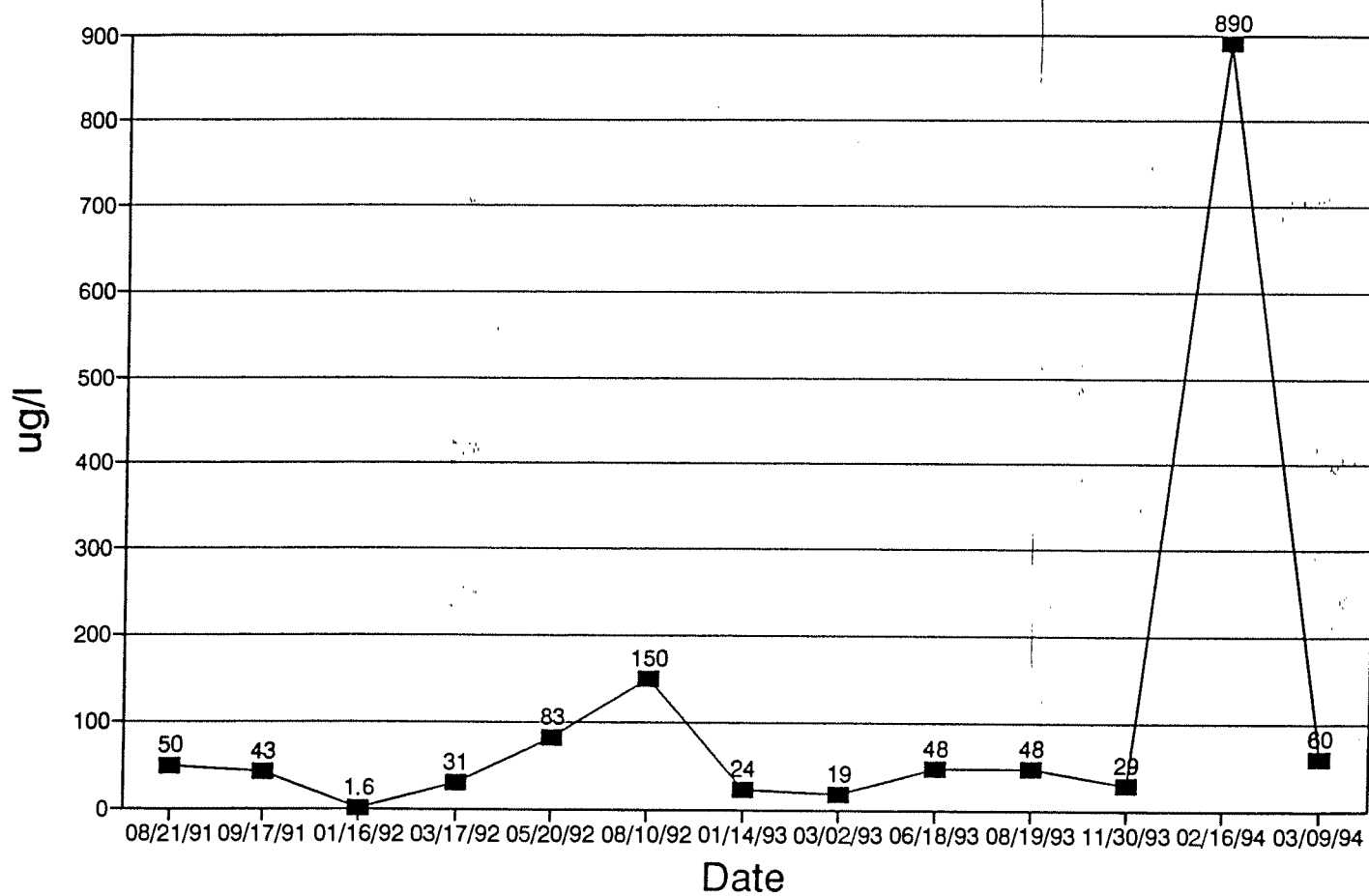


Figure 23
PCE Concentration in GW-2

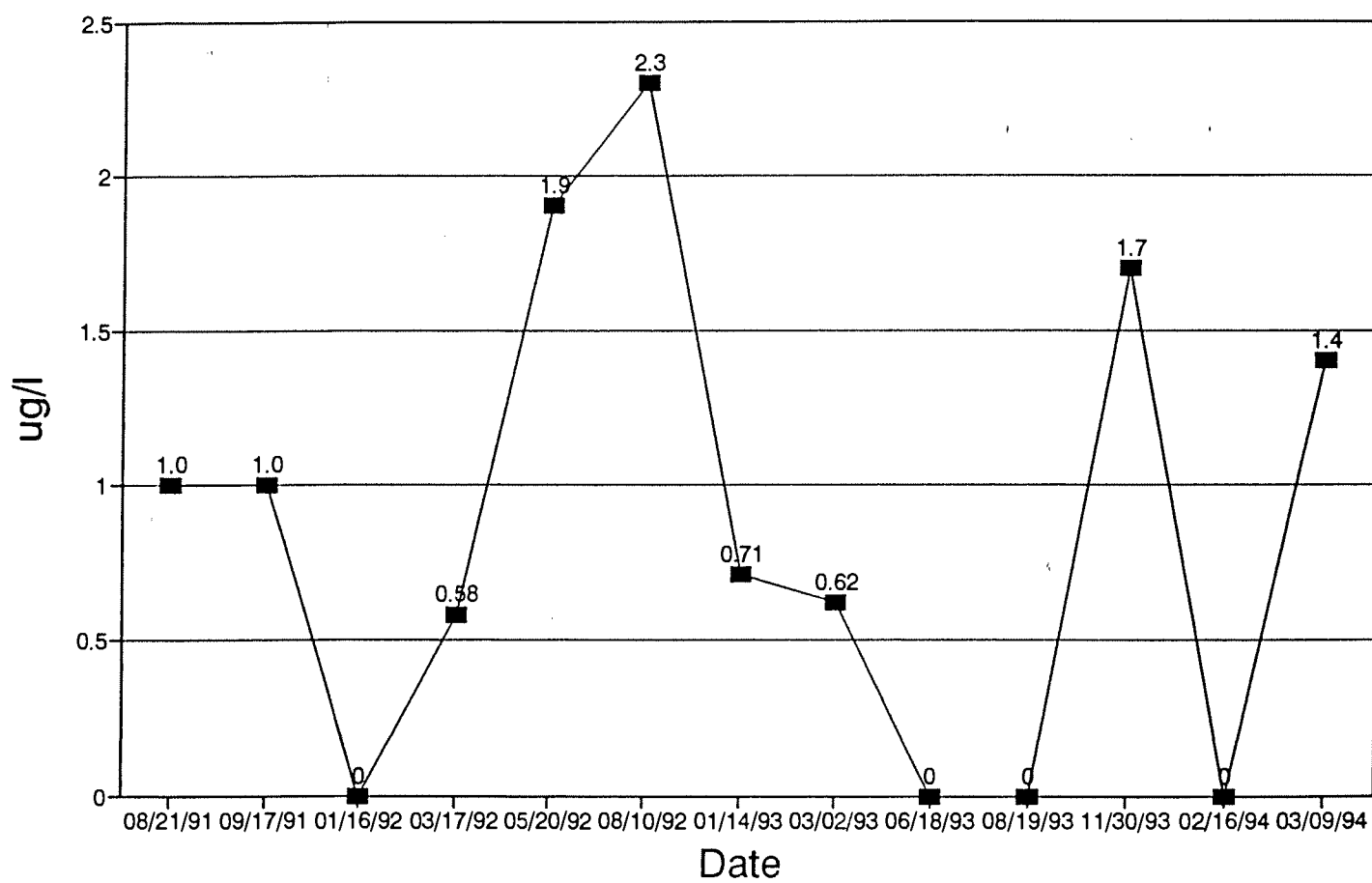


Figure 24
Historic Groundwater Elevation in GW-3

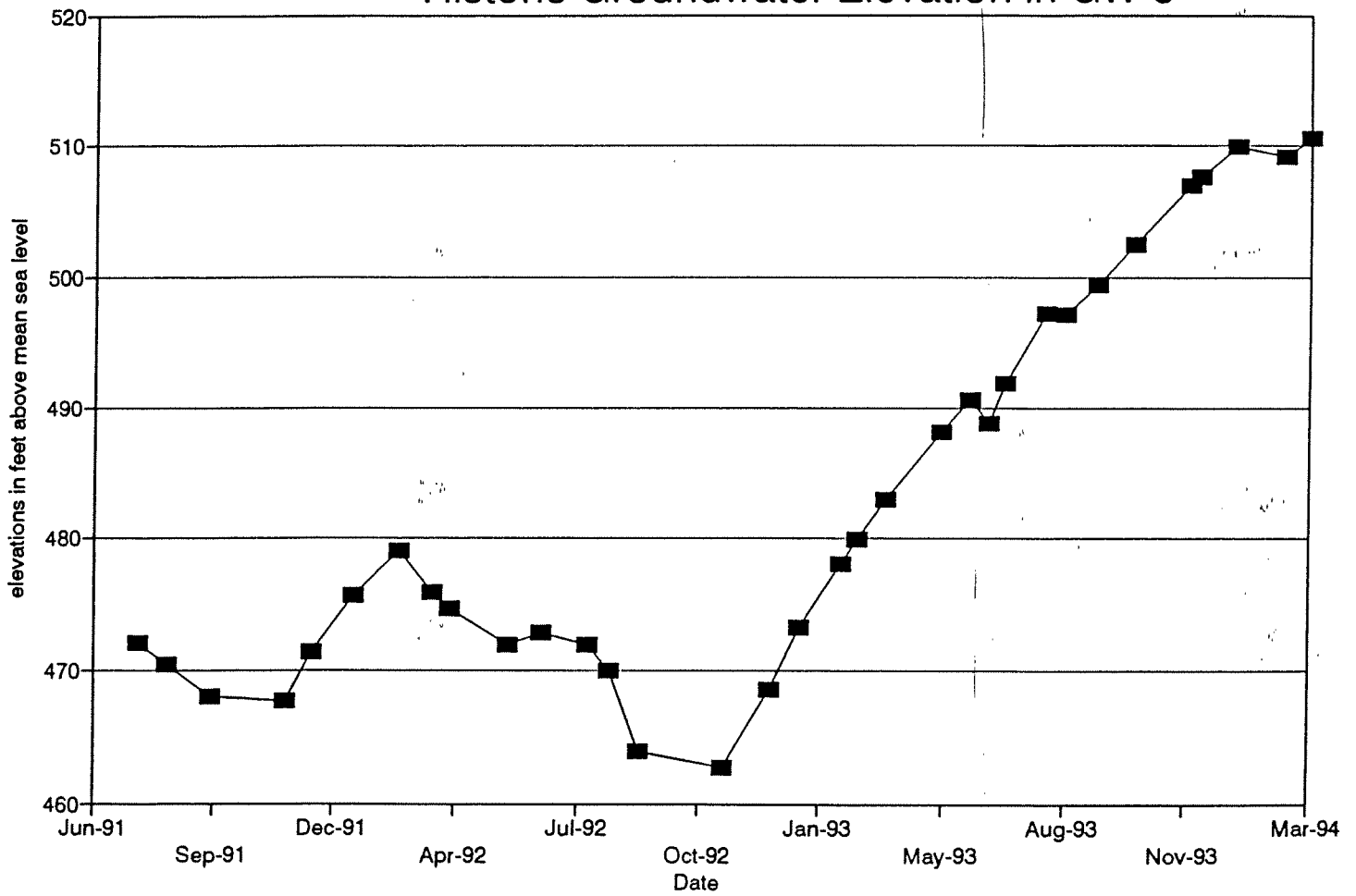


Figure 25
Nitrate Concentration in GW-3

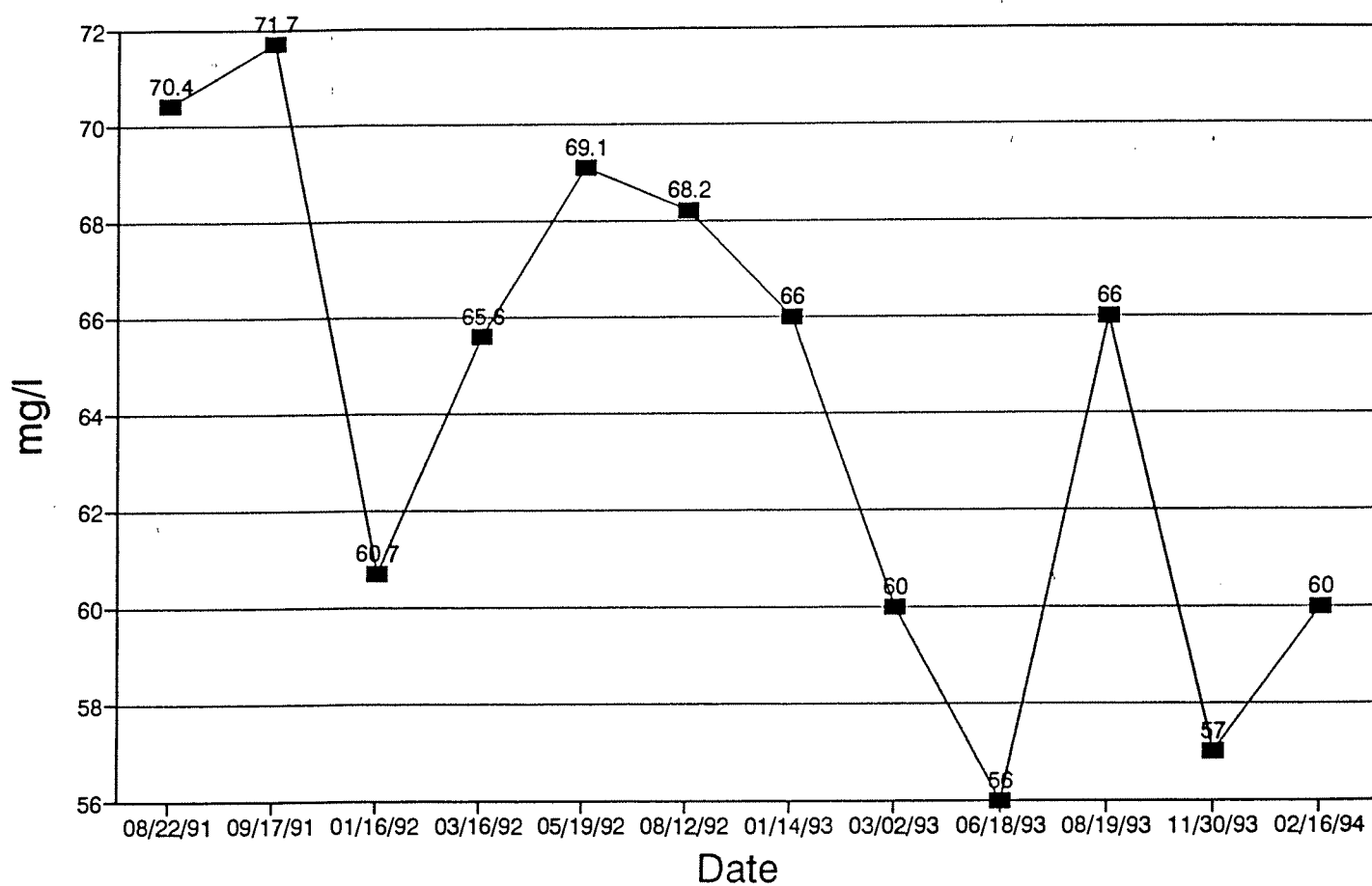


Figure 26
1,1,1-TCA Concentration in GW-3

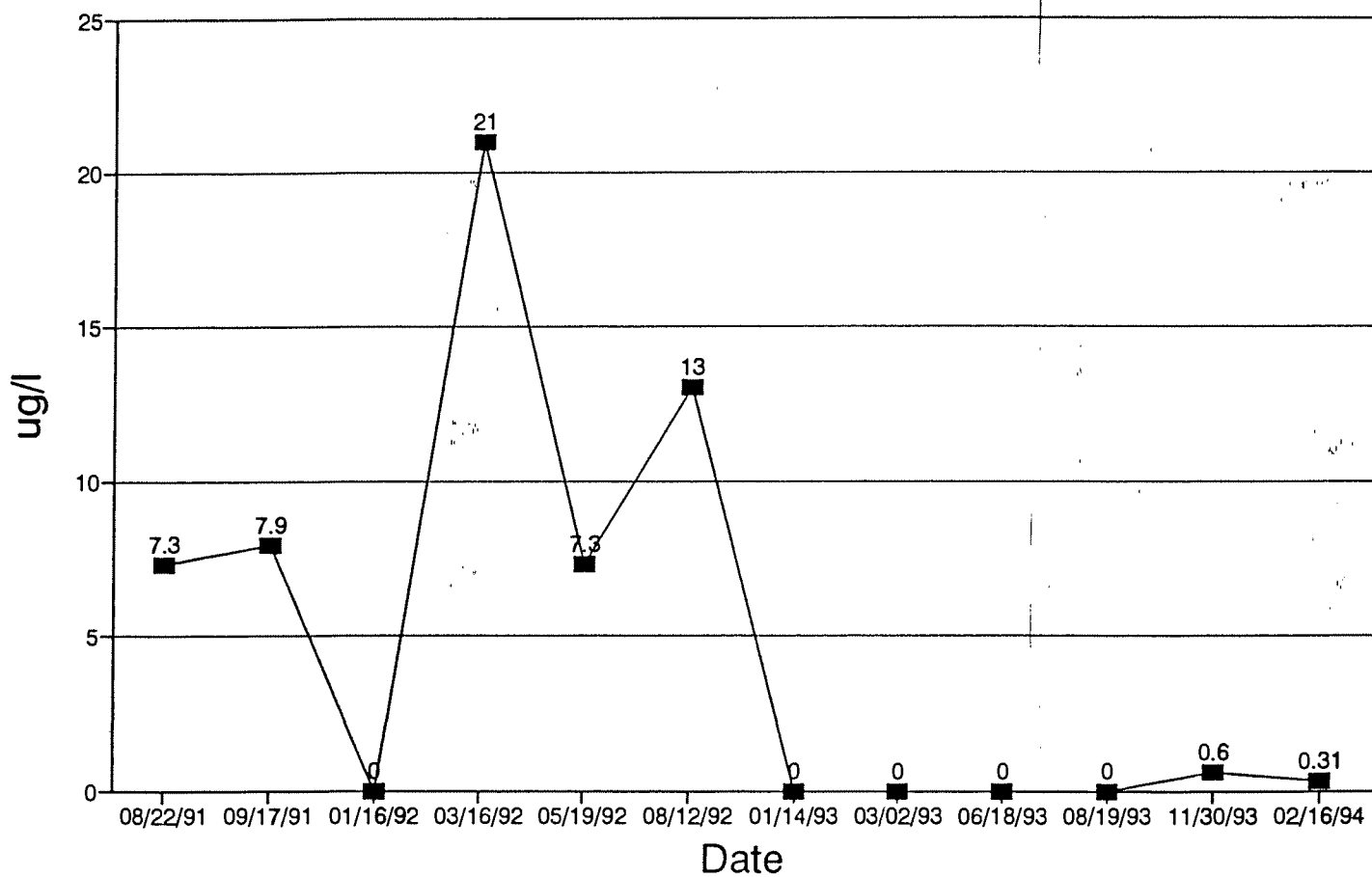


Figure 27
1,1-DCA Concentration in GW-3

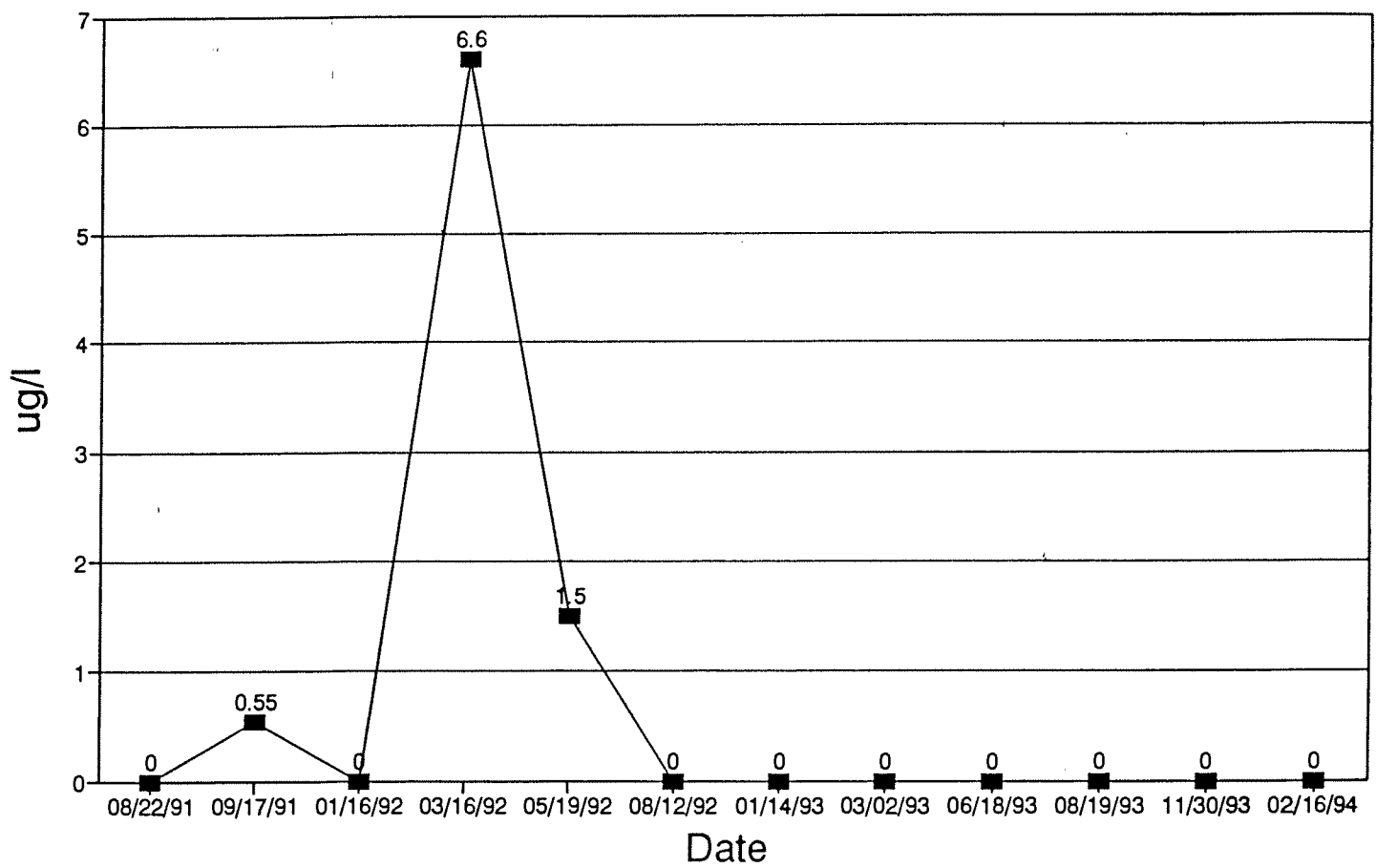


Figure 28
1,1-DCE Concentration in GW-3

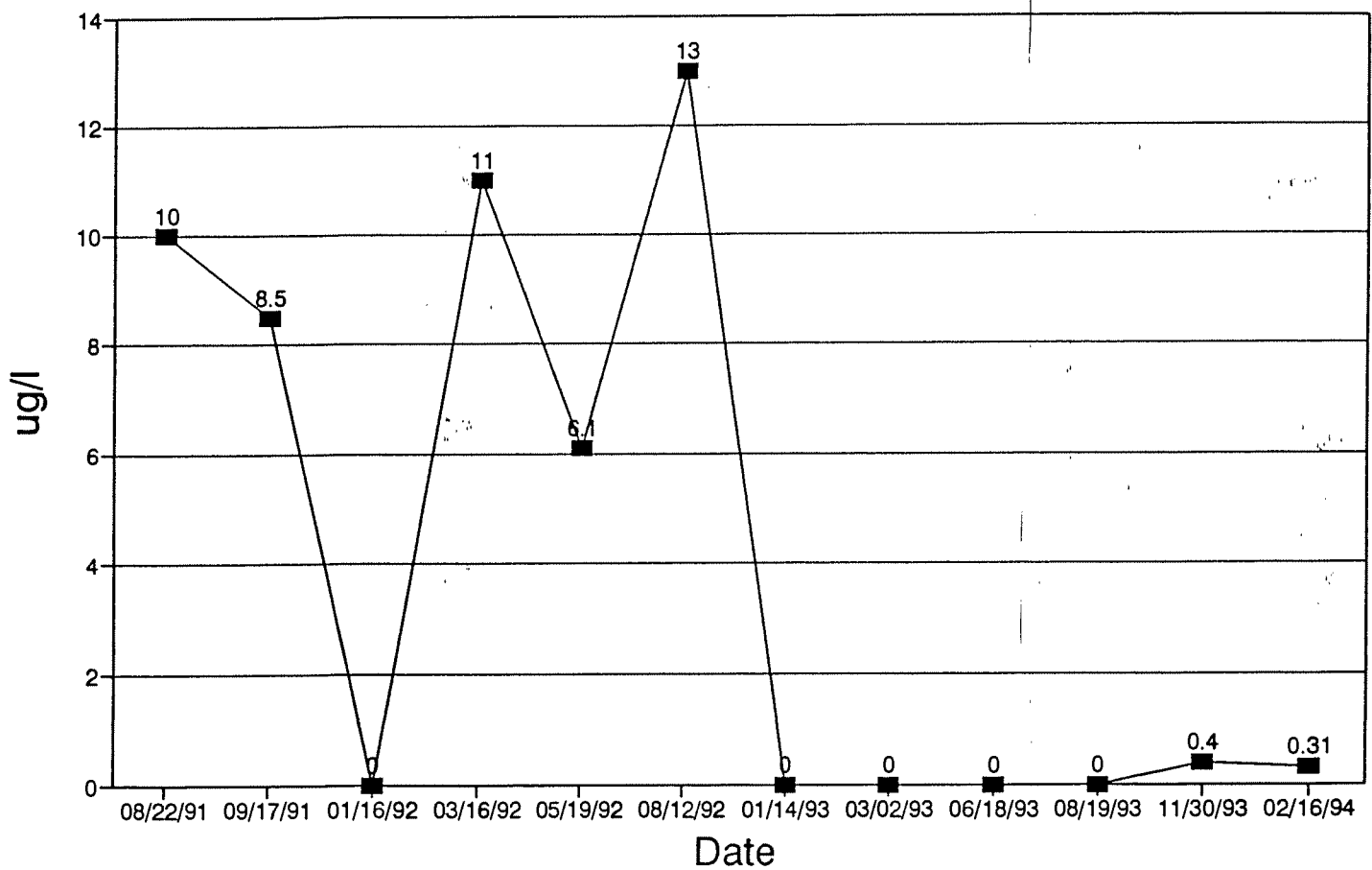


Figure 29
TCE Concentration in GW-3

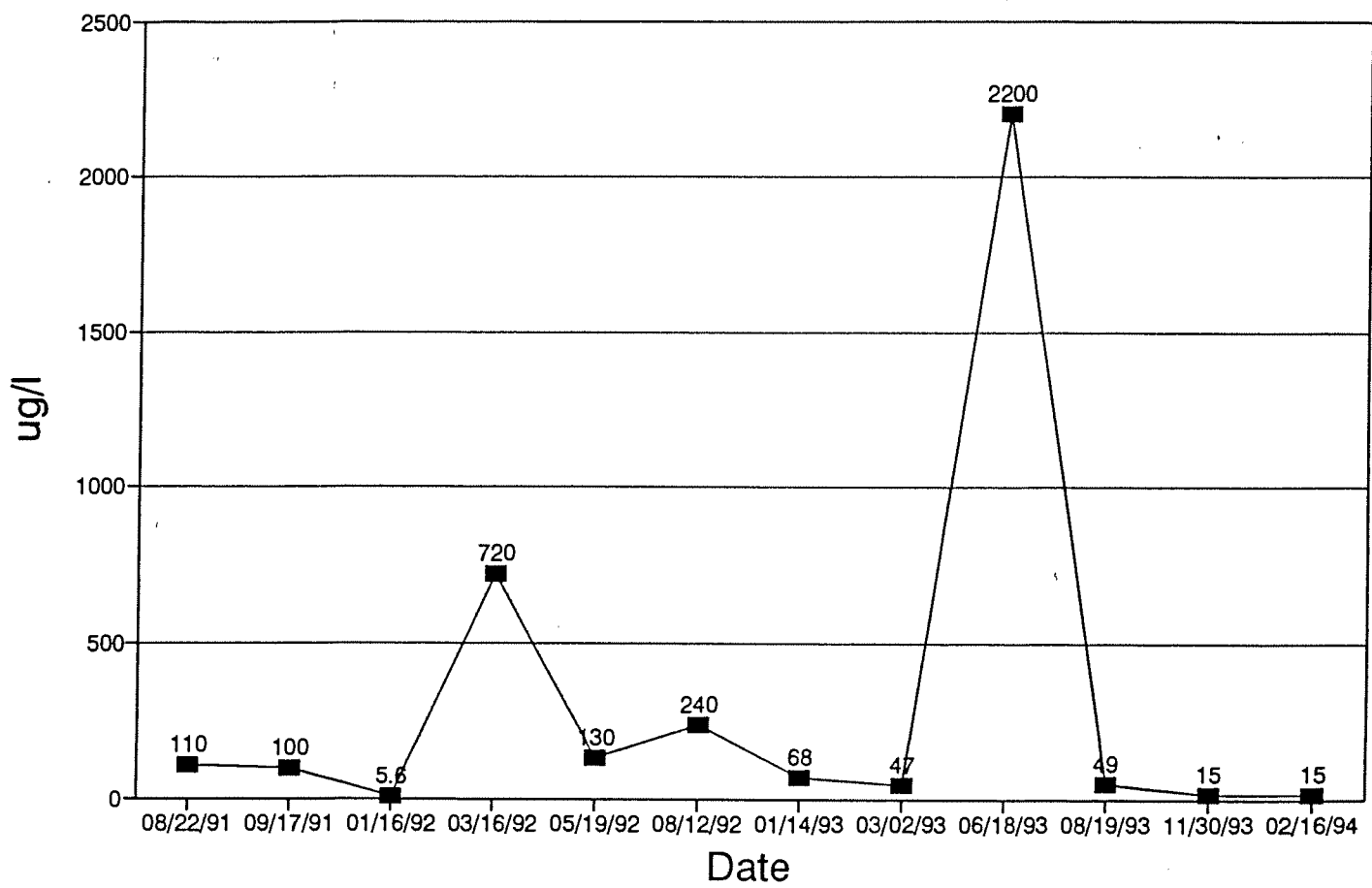


Figure 30
PCE Concentration in GW-3

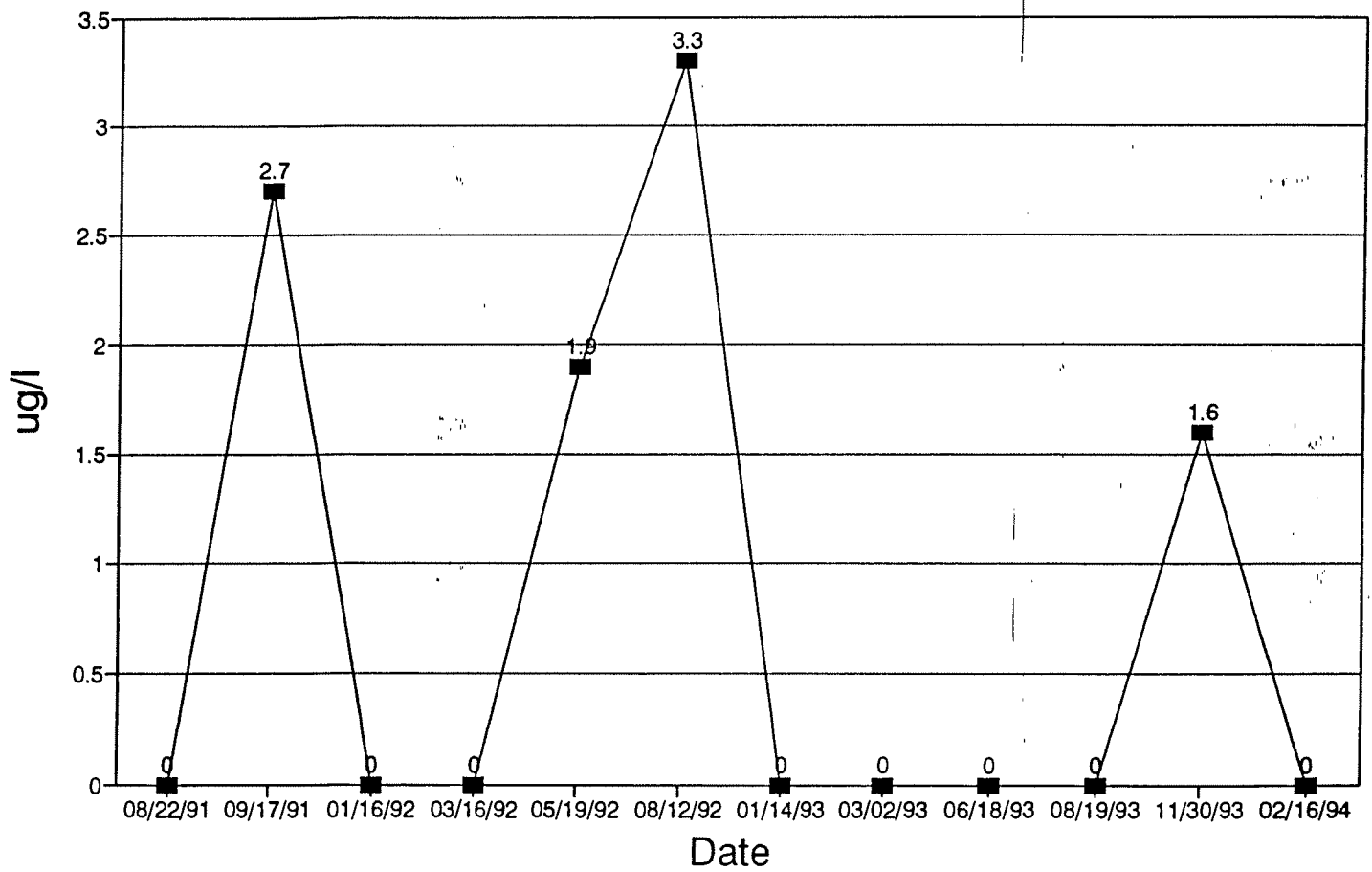


Figure 31
CIS-1,2-DCE Concentration in GW-3

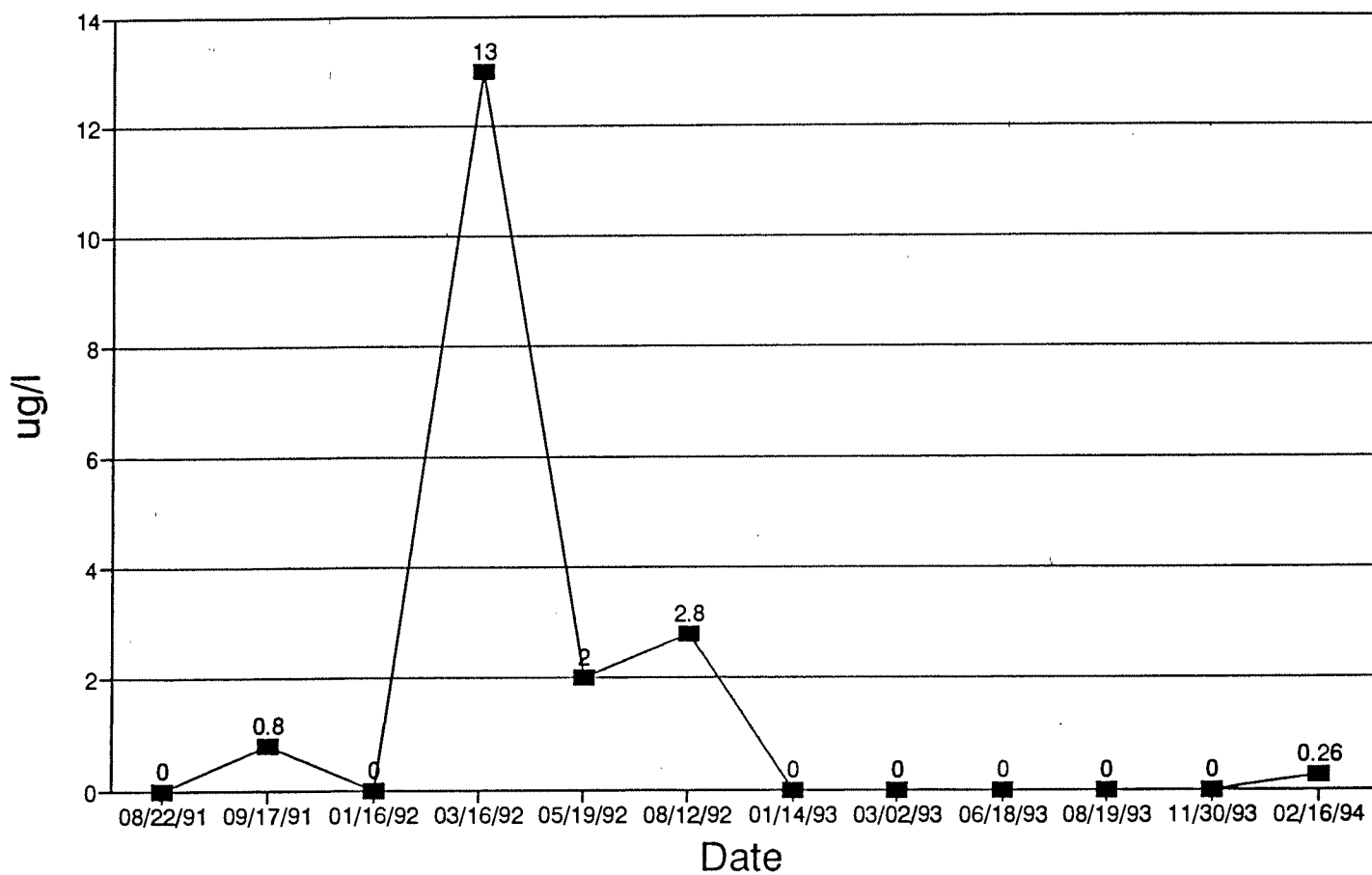


Figure 32
Historic Groundwater Elevation in GW-4

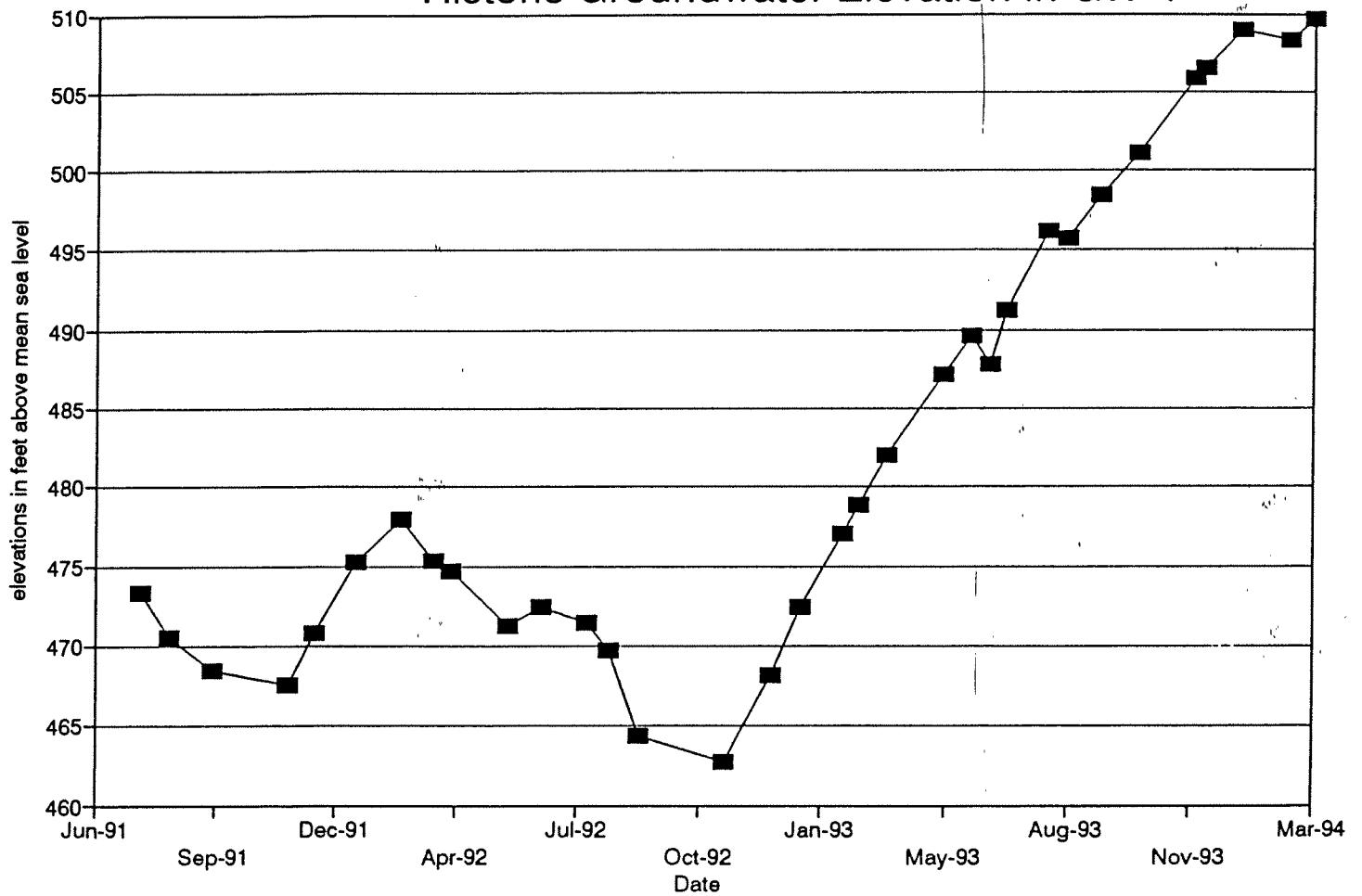


Figure 33
Nitrate Concentration in GW-4

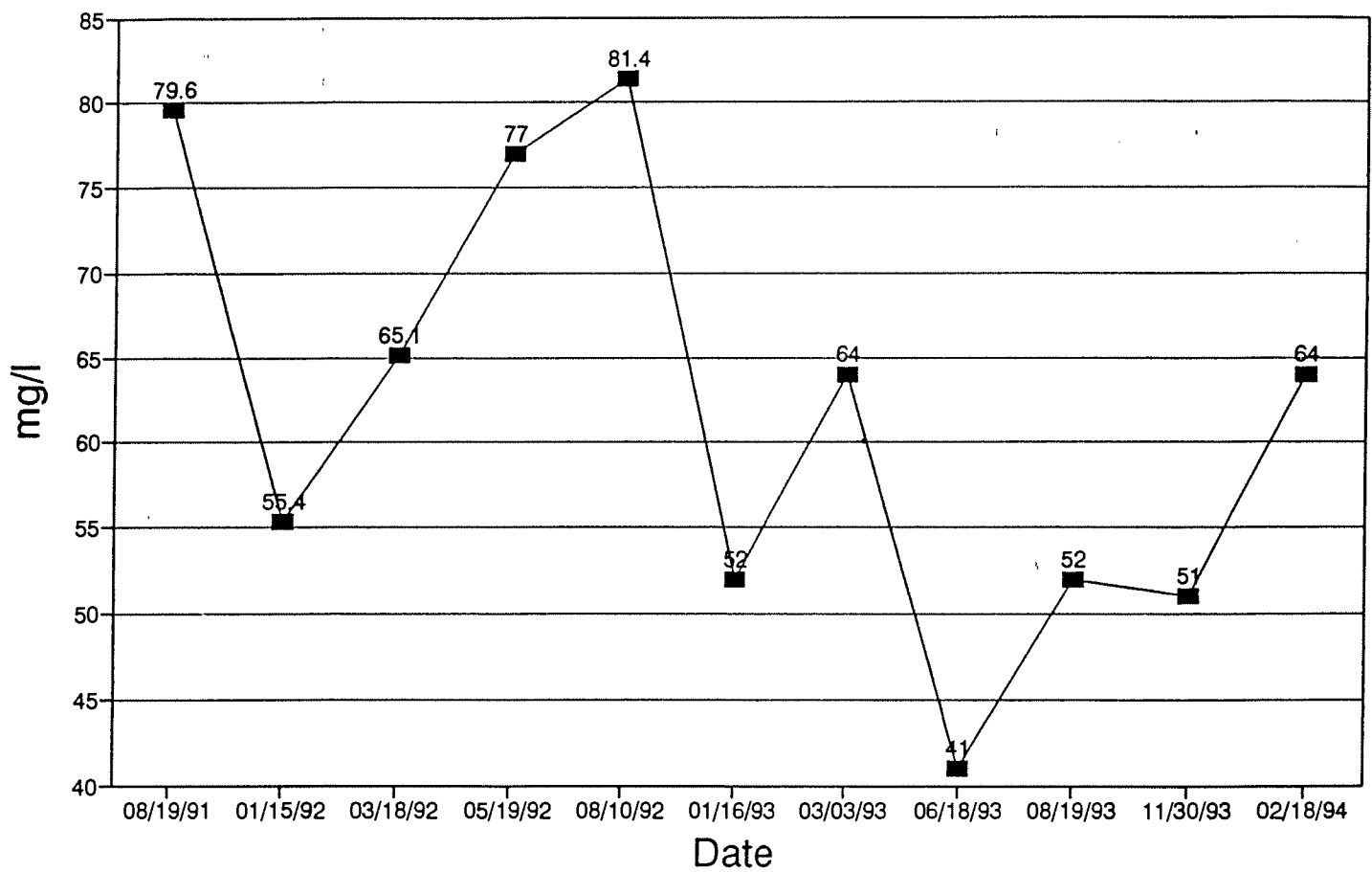


Figure 34
1,1-DCE Concentration in GW-4

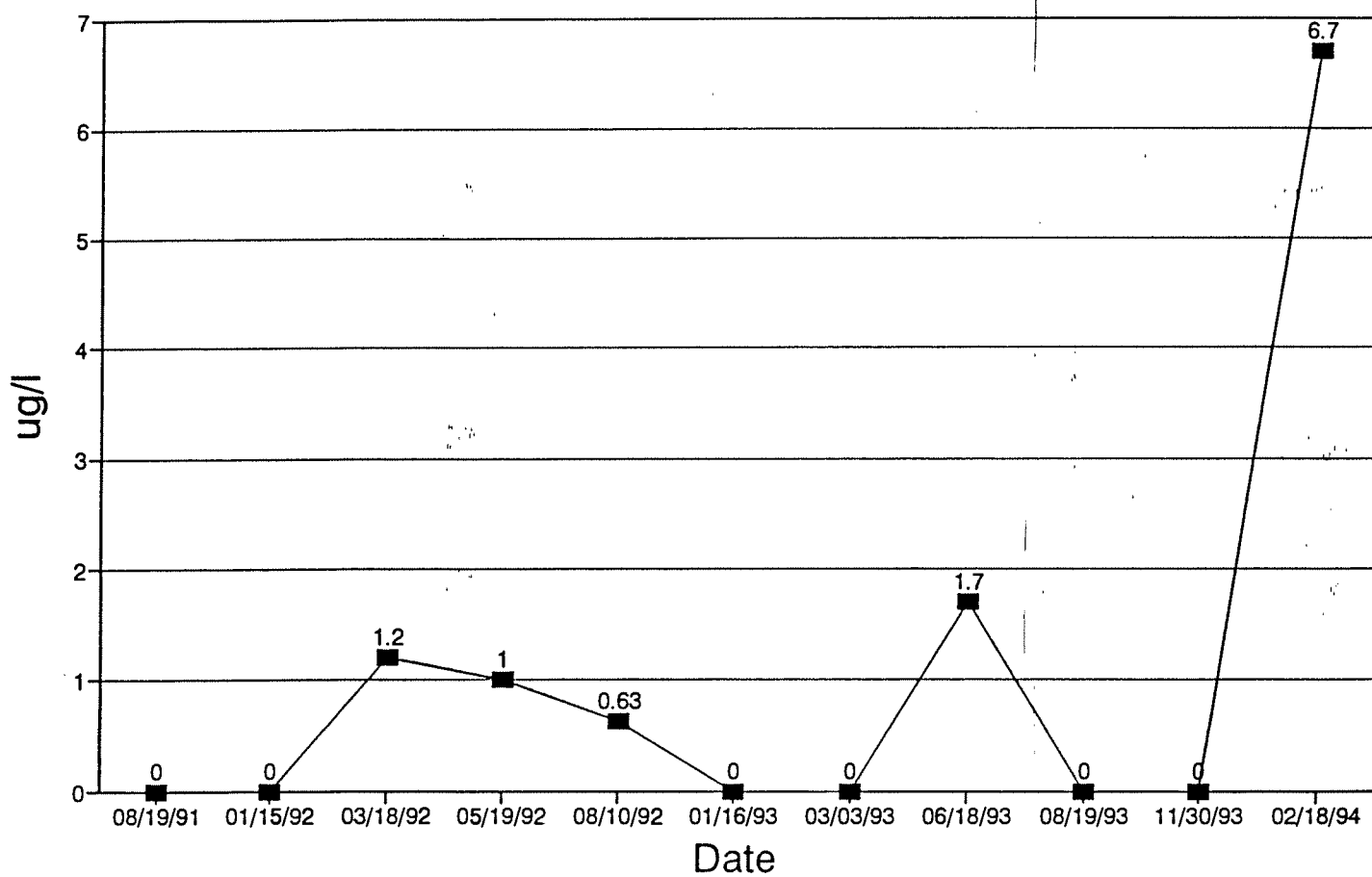


Figure 35
CCL4 Concentration in GW-4

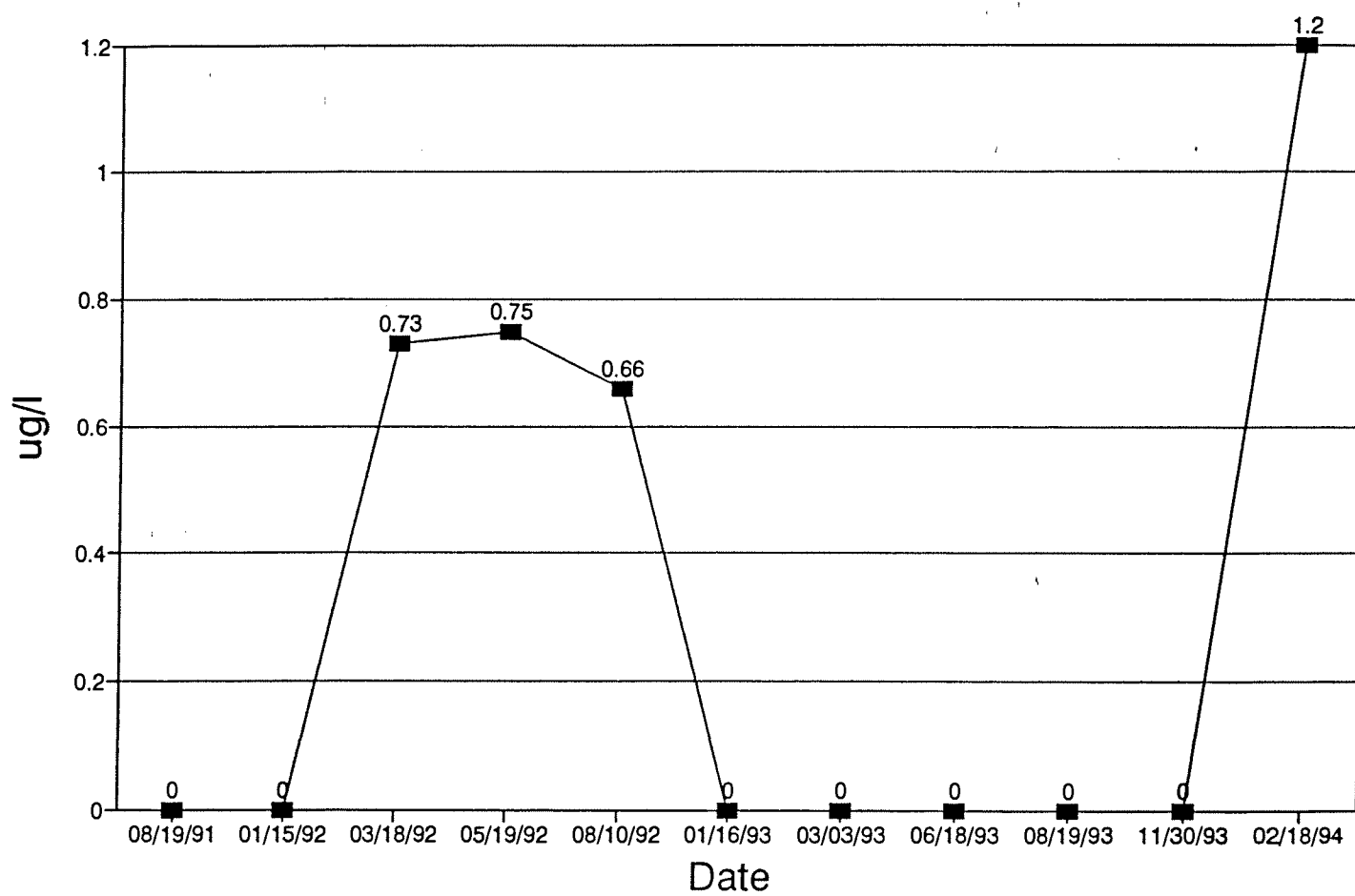


Figure 36
TCE Concentration in GW-4

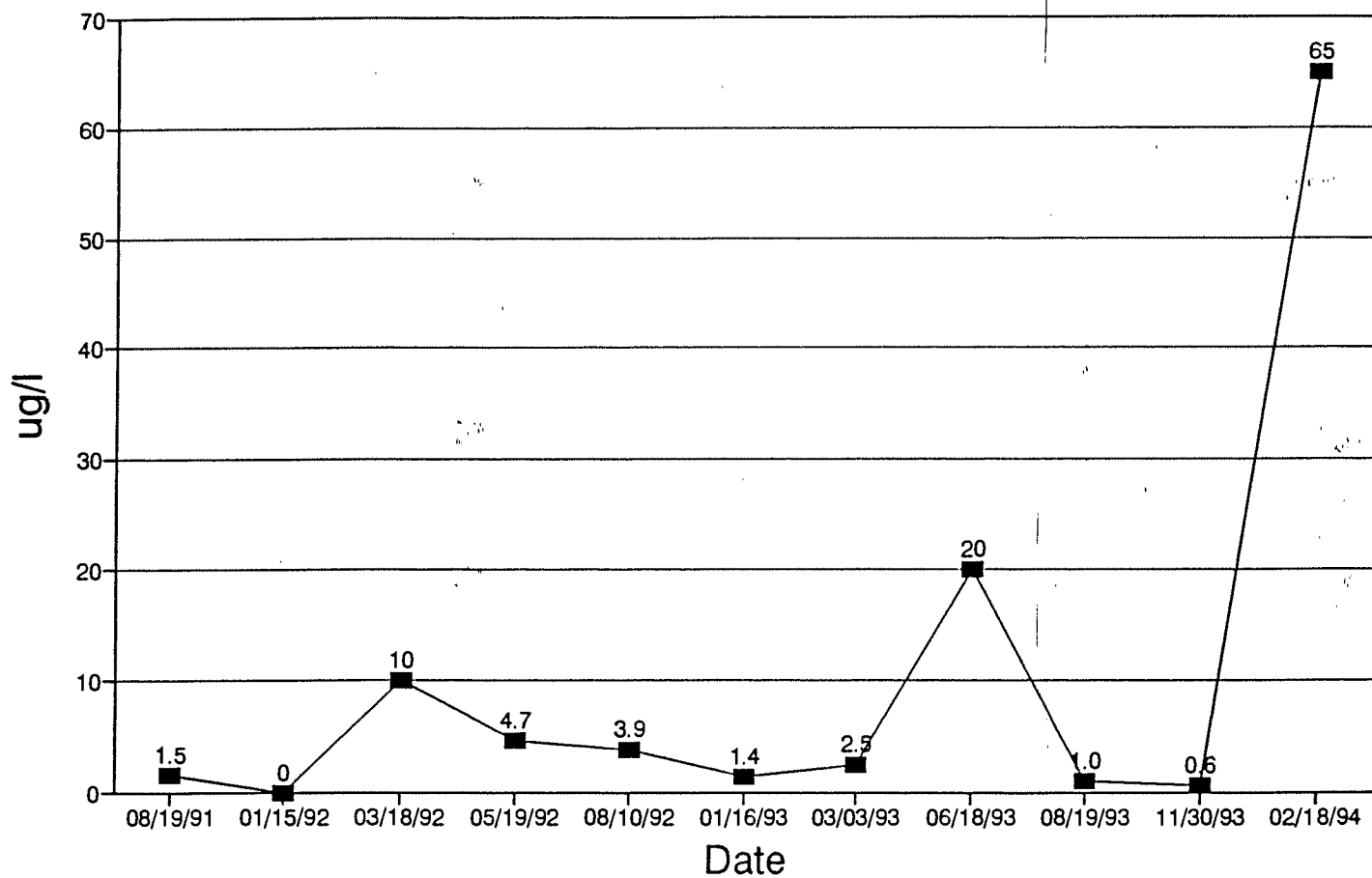


Figure 37
PCE Concentration in GW-4

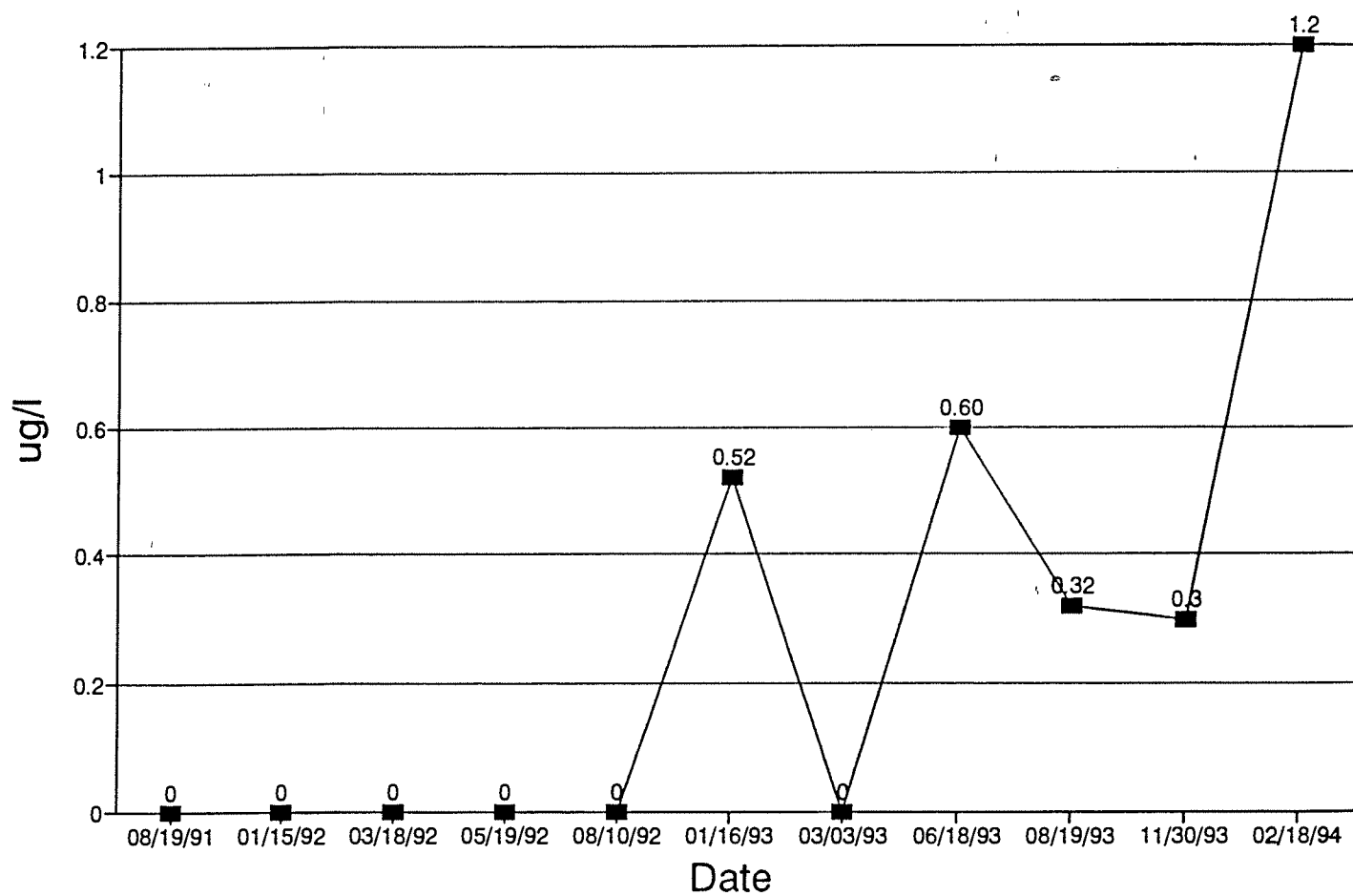


Figure 38
Historic Groundwater Elevation in GW-5

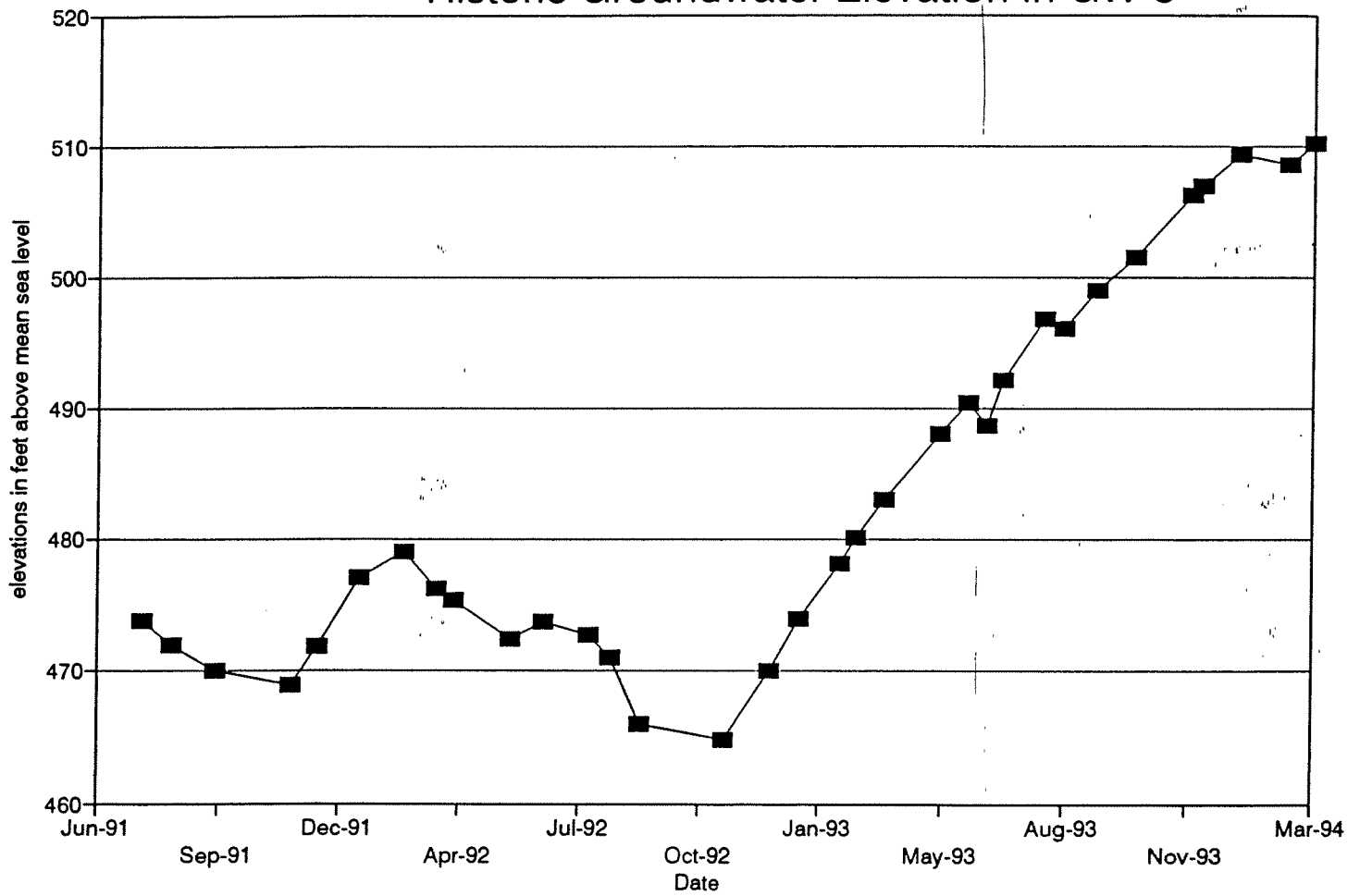


Figure 39
Nitrate Concentration in GW-5

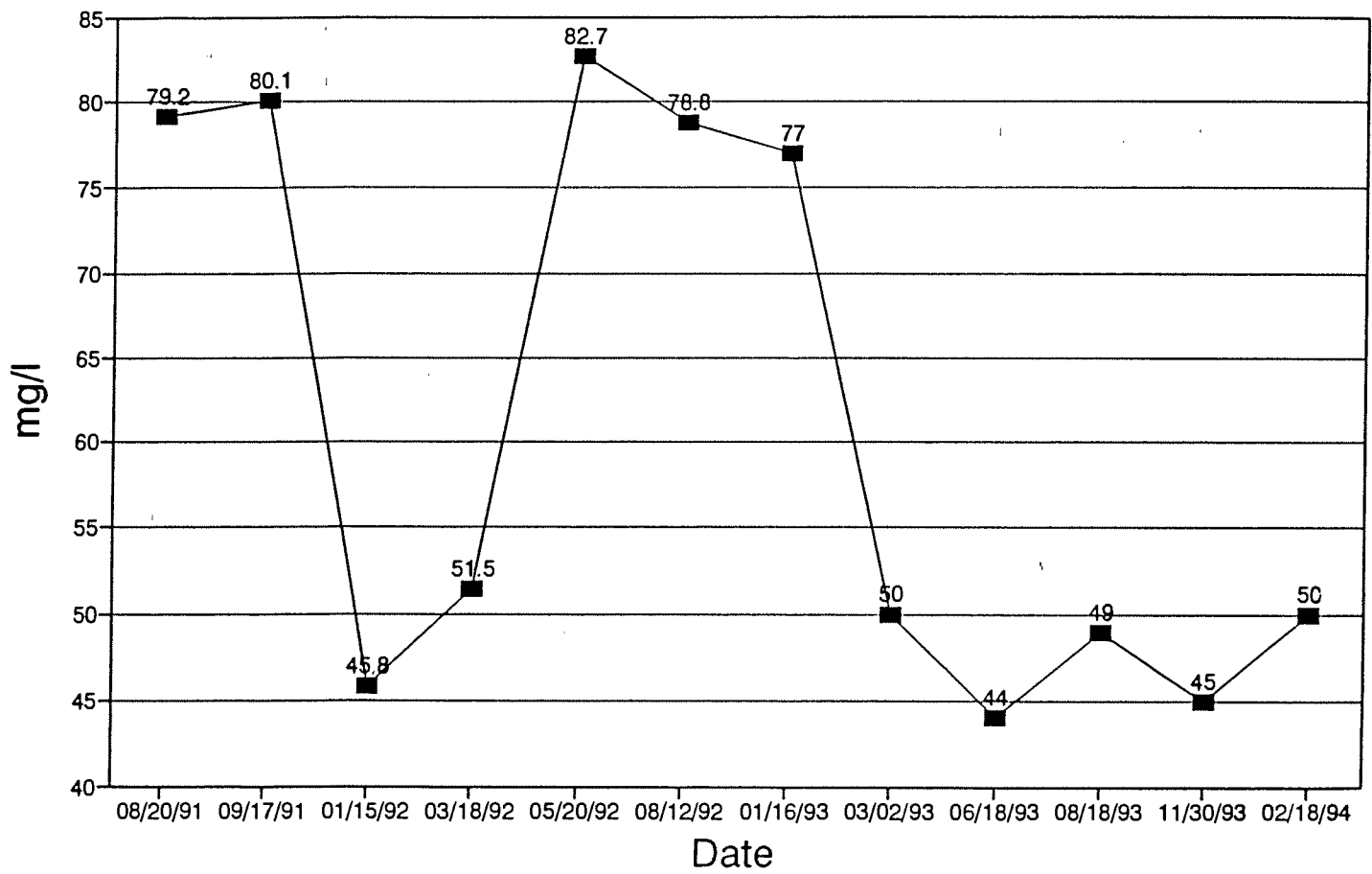


Figure 40
TCE Concentration in GW-5

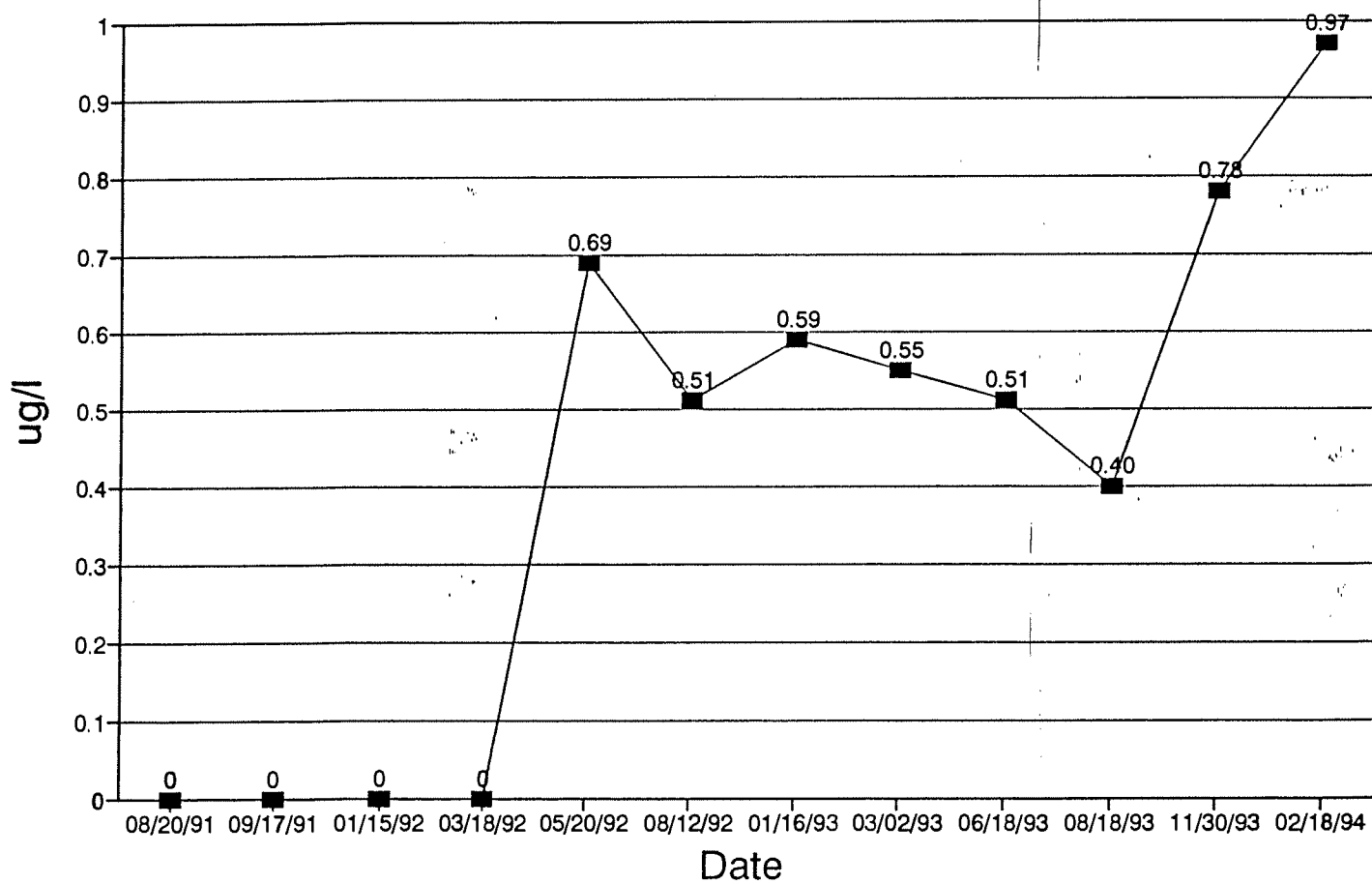


Figure 41
PCE Concentration in GW-5

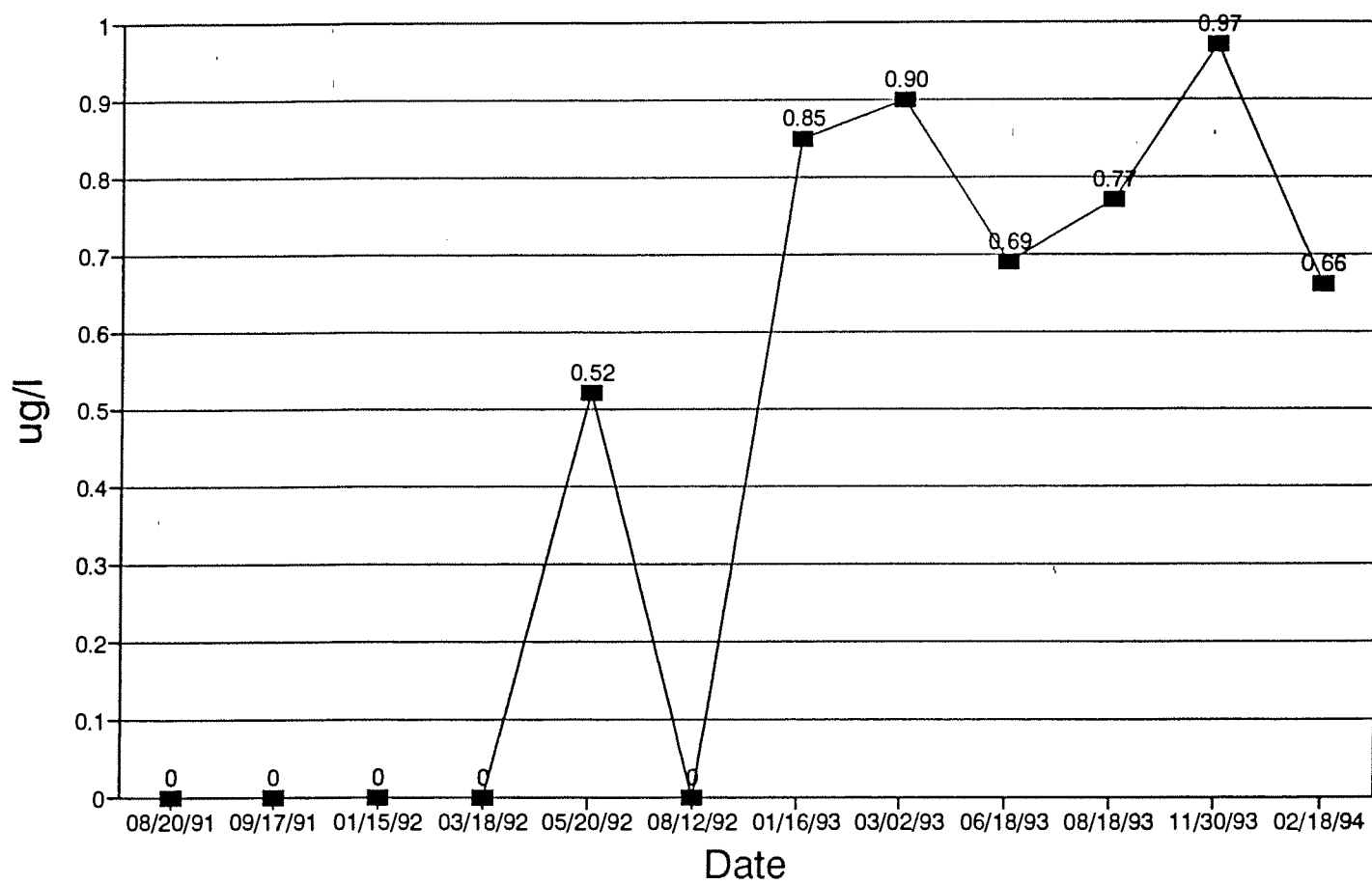


Figure 42
Historic Groundwater Elevation in GW-6

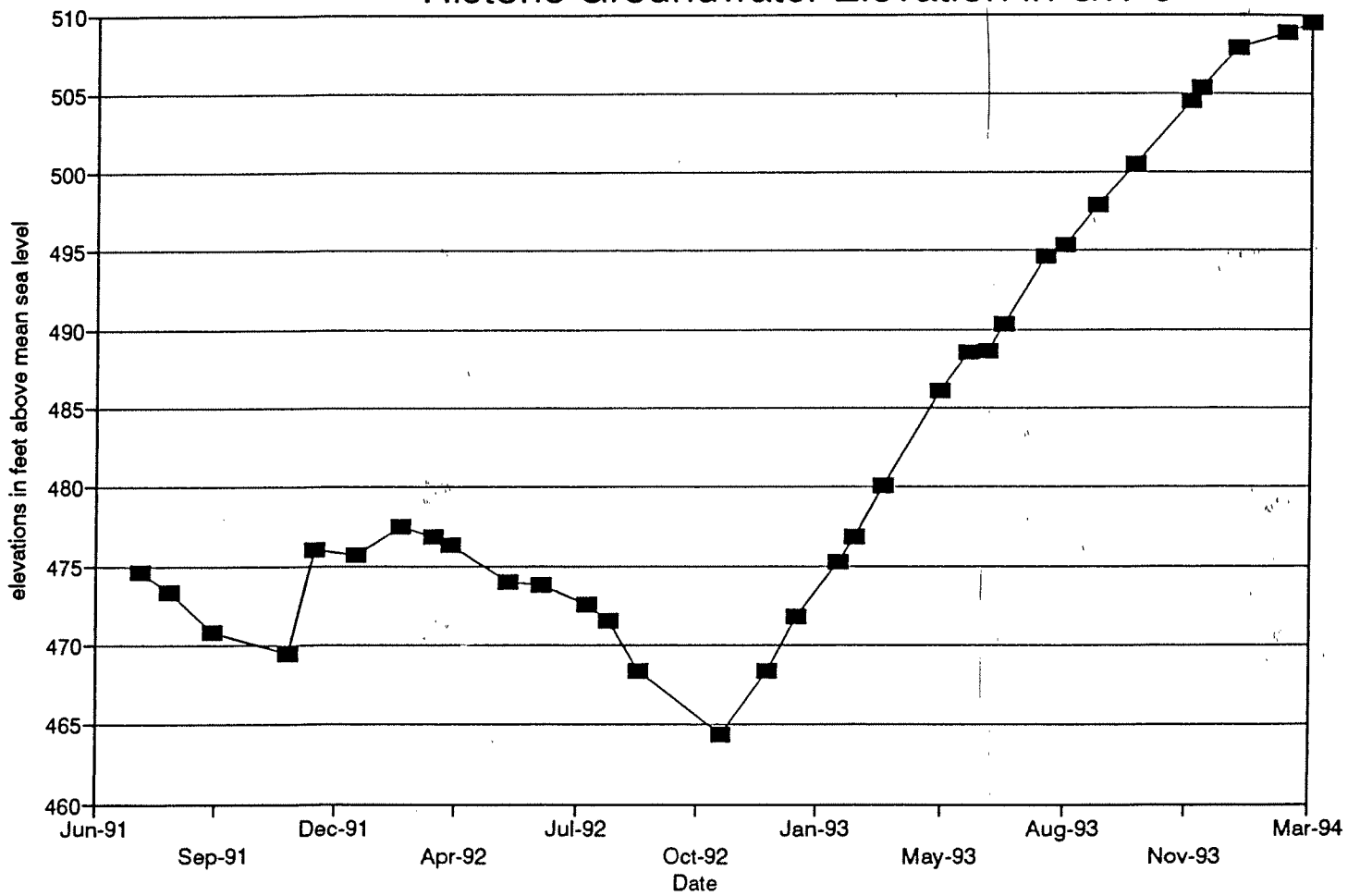


Figure 43
Nitrate Concentration in GW-6

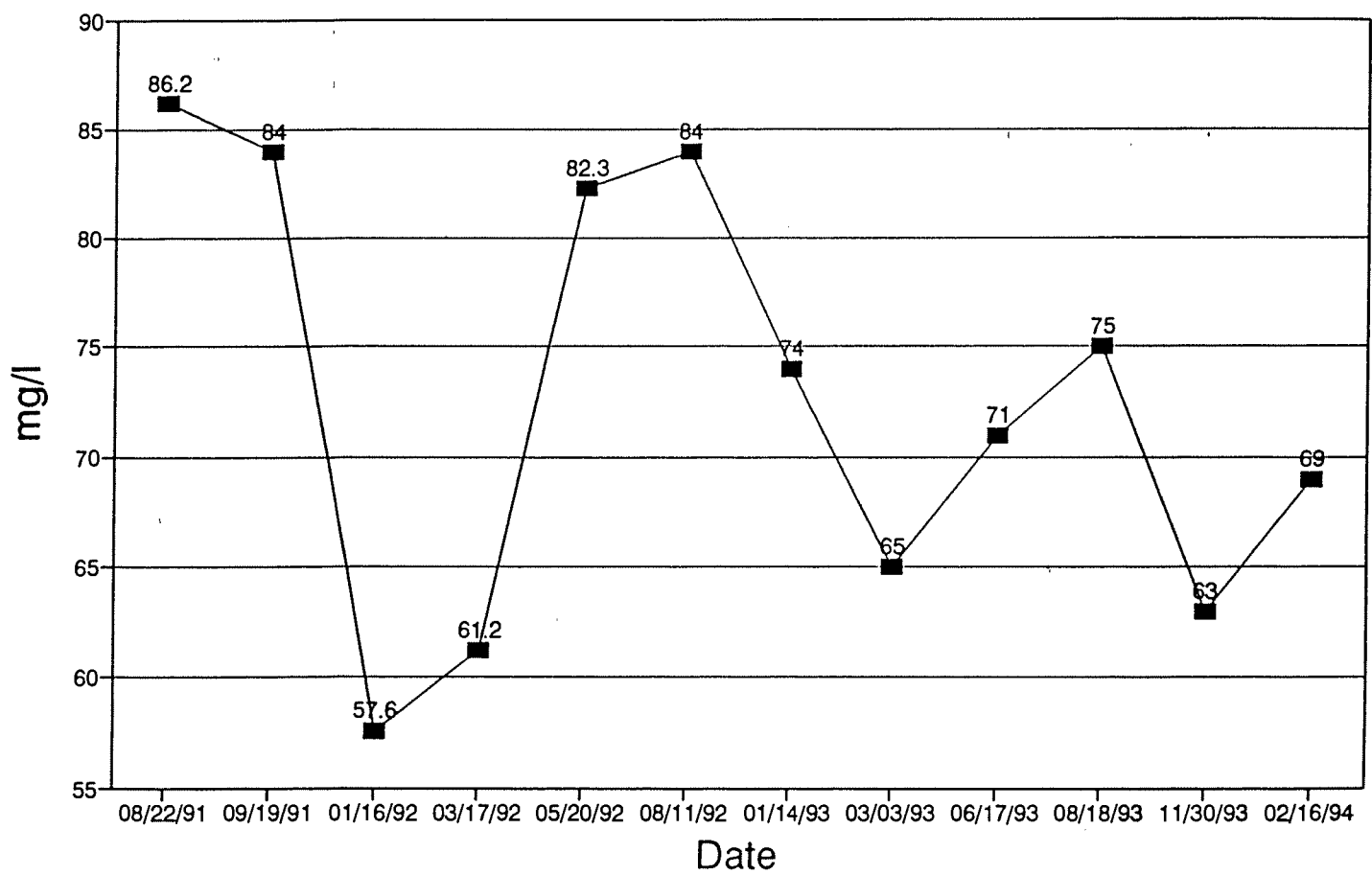


Figure 44
TCE Concentration in GW-6

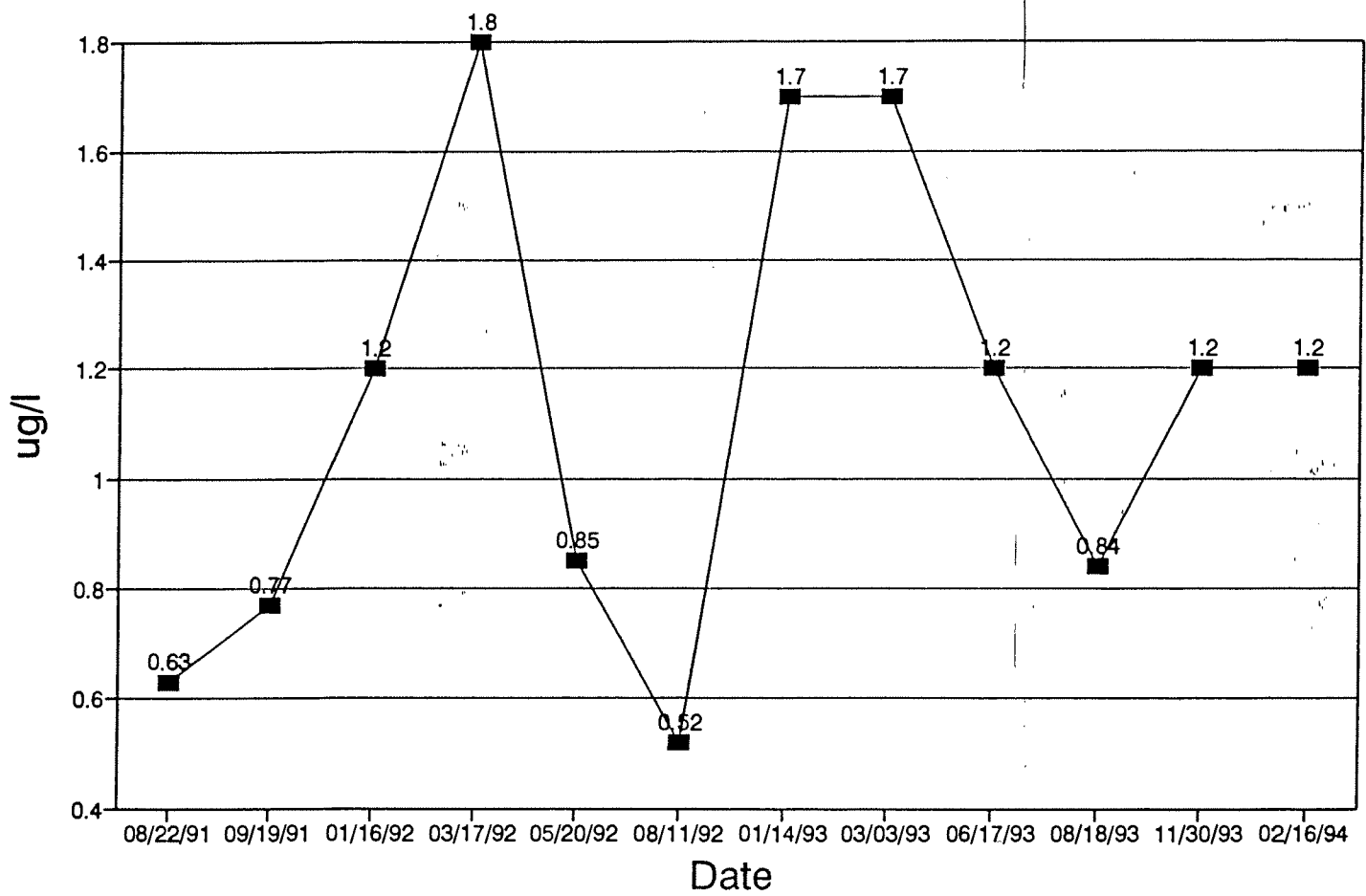


Figure 45
PCE Concentration in GW-6

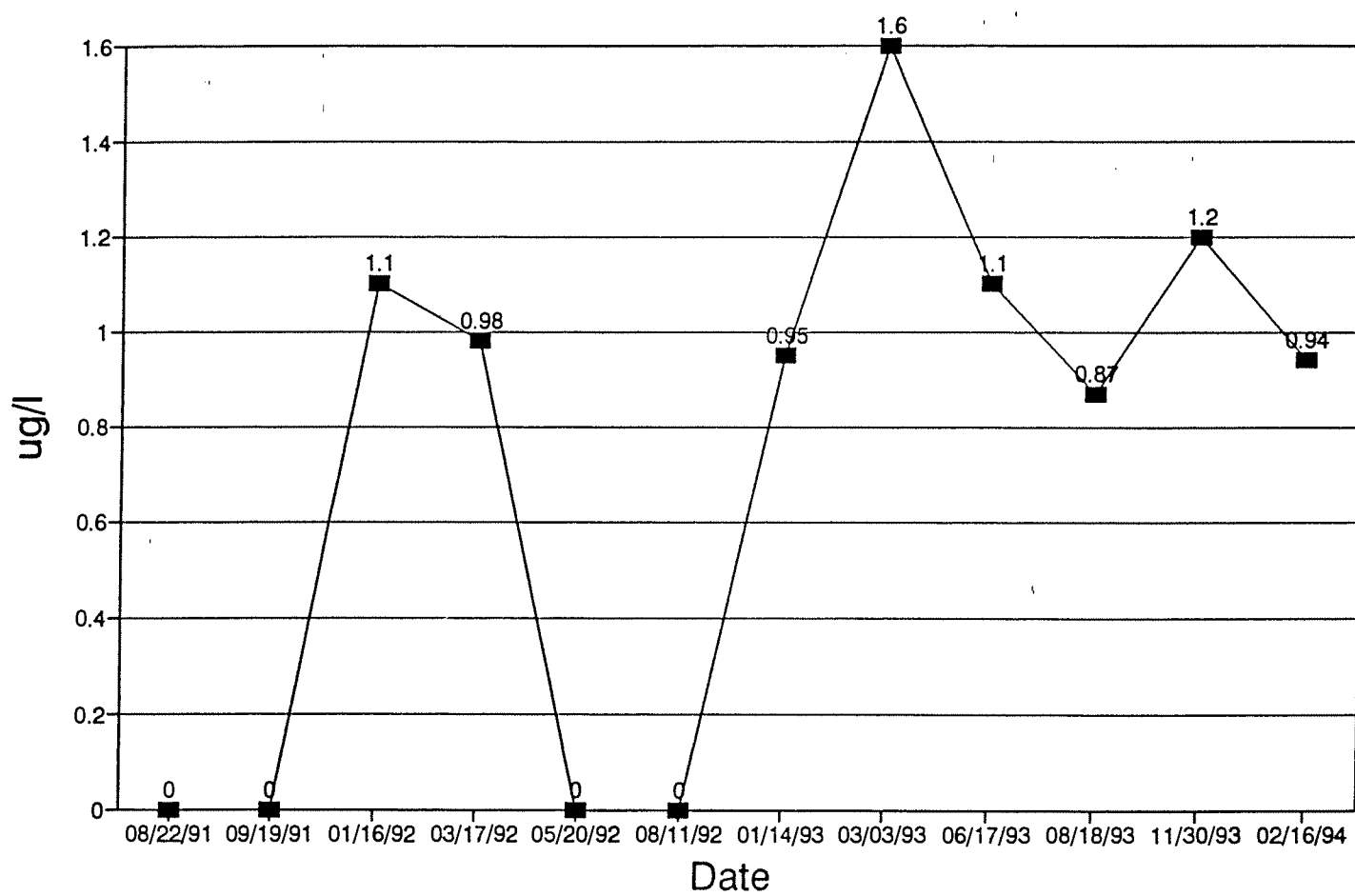


Figure 46
CIS-1,2-DCE Concentration in GW-6

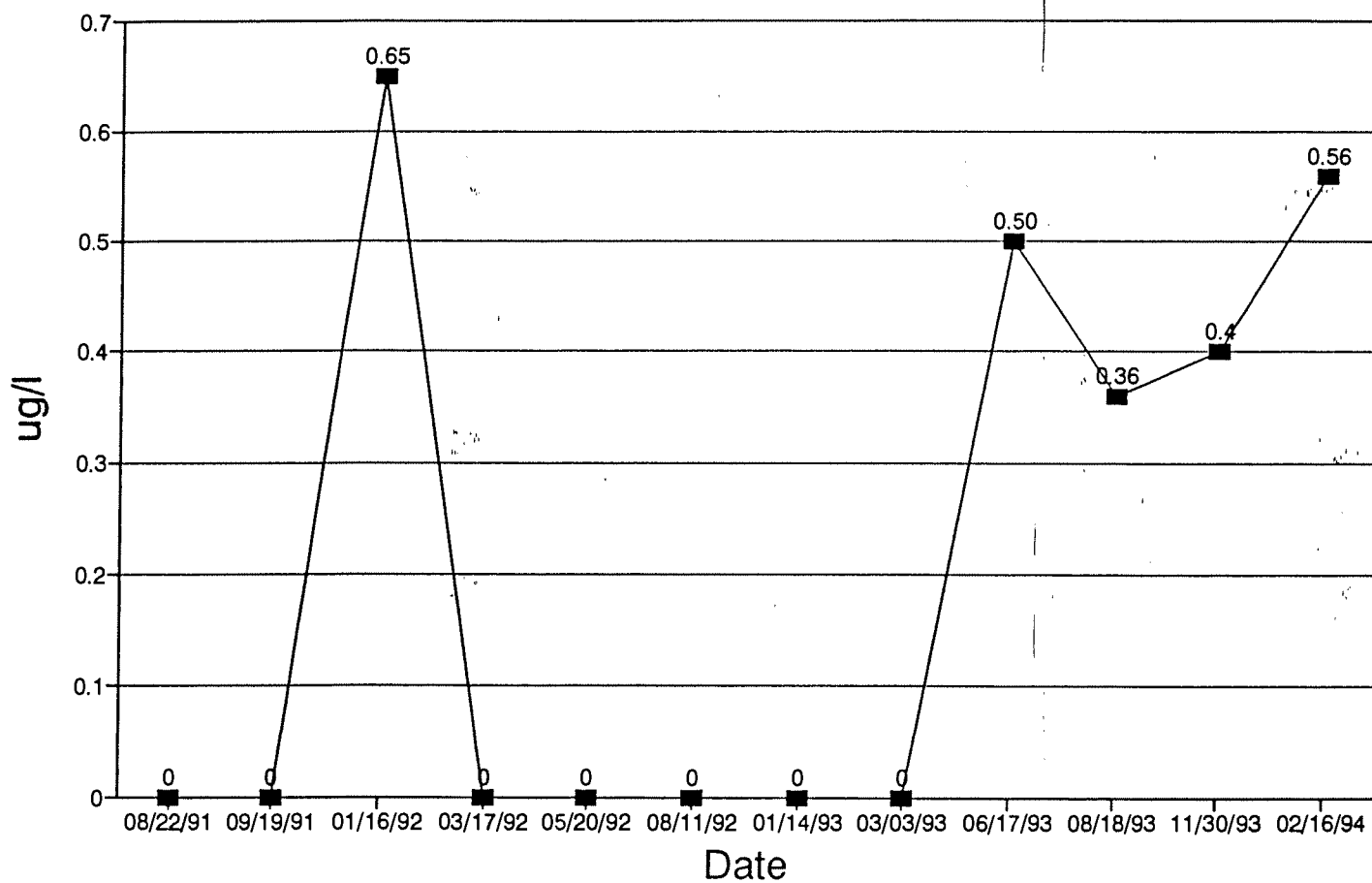


Figure 47
Historic Groundwater Elevation in GW-7

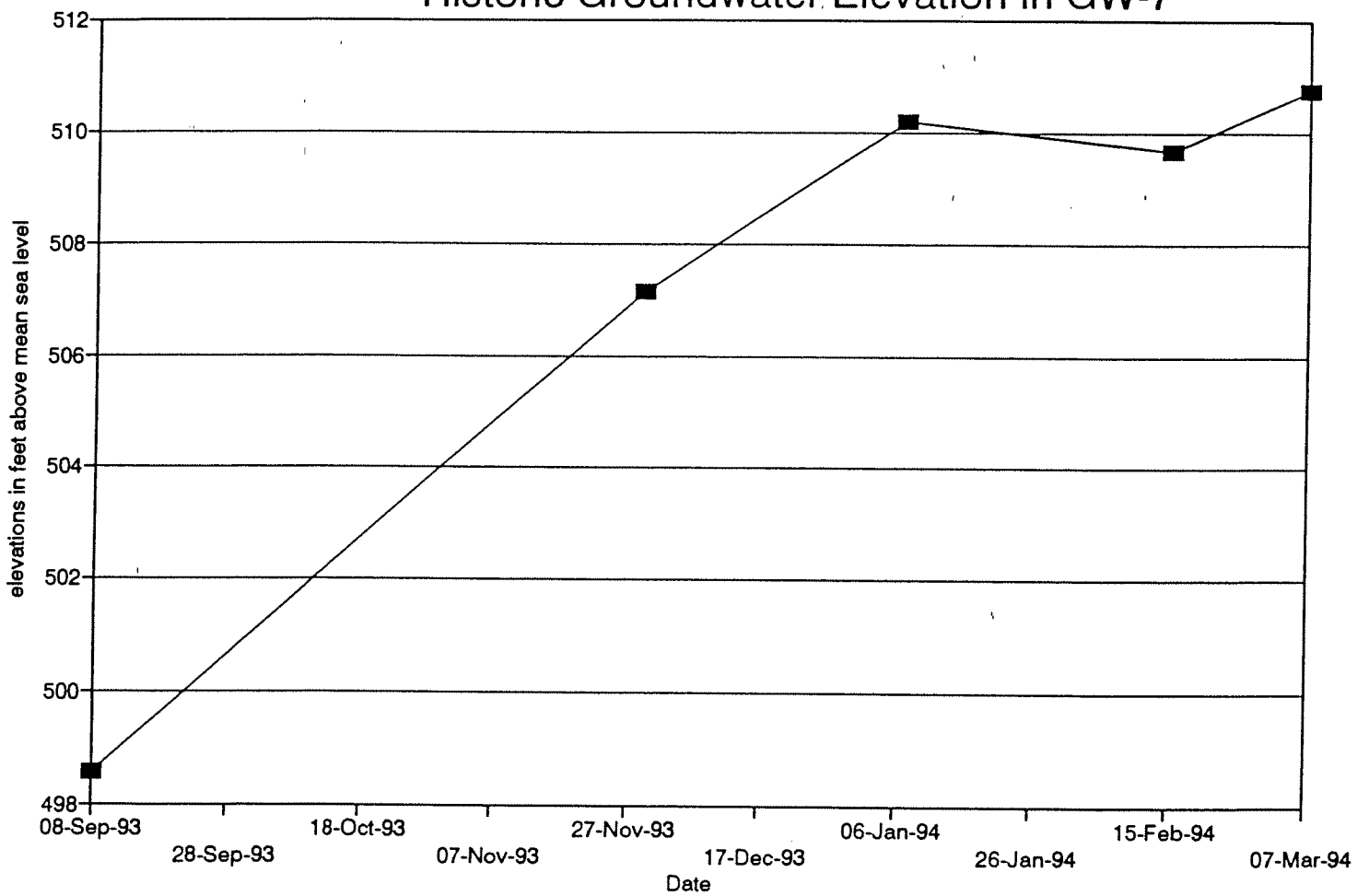


Figure 48
Nitrate Concentration in GW-7

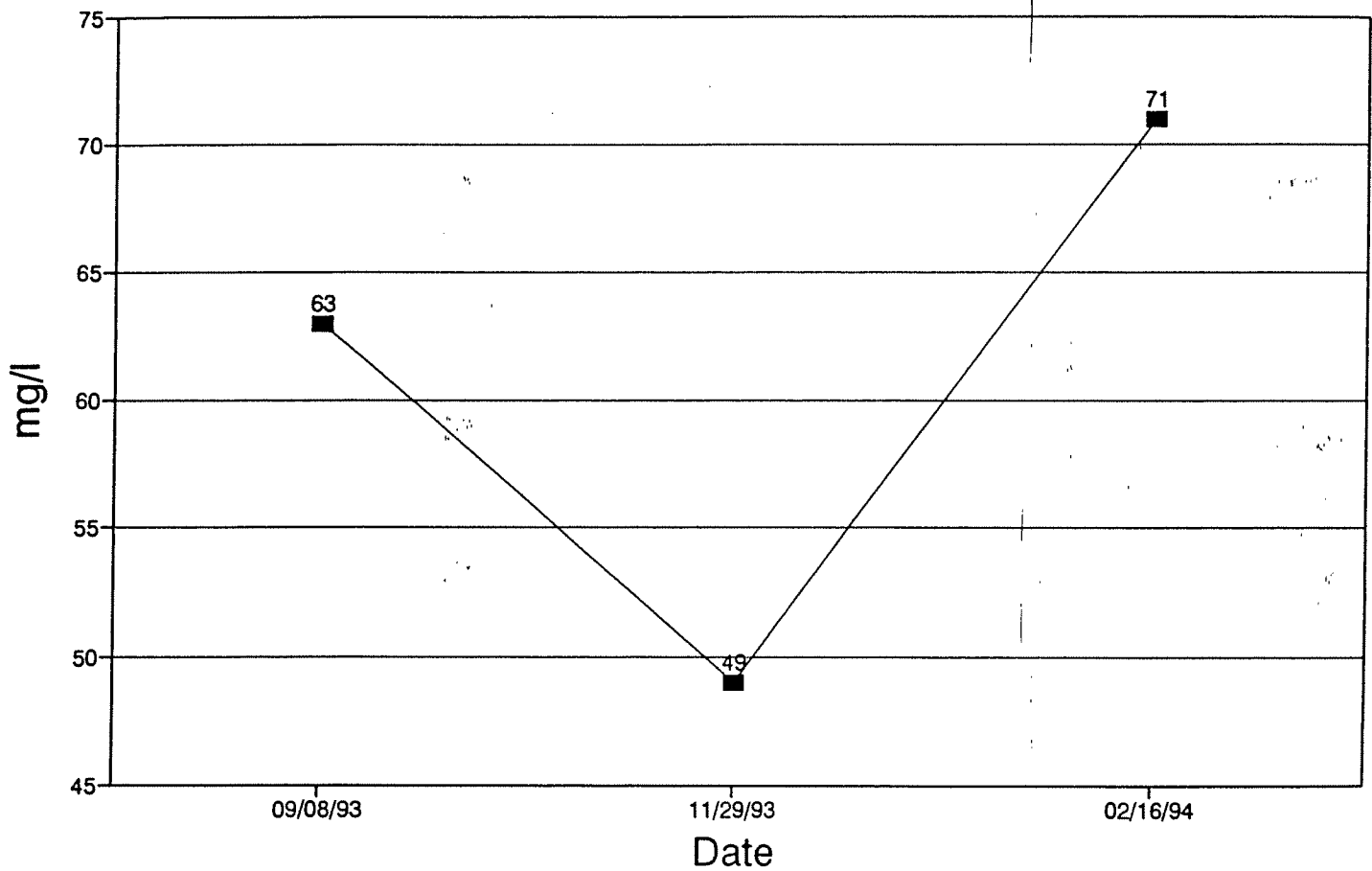


Figure 49
TCE Concentration in GW-7

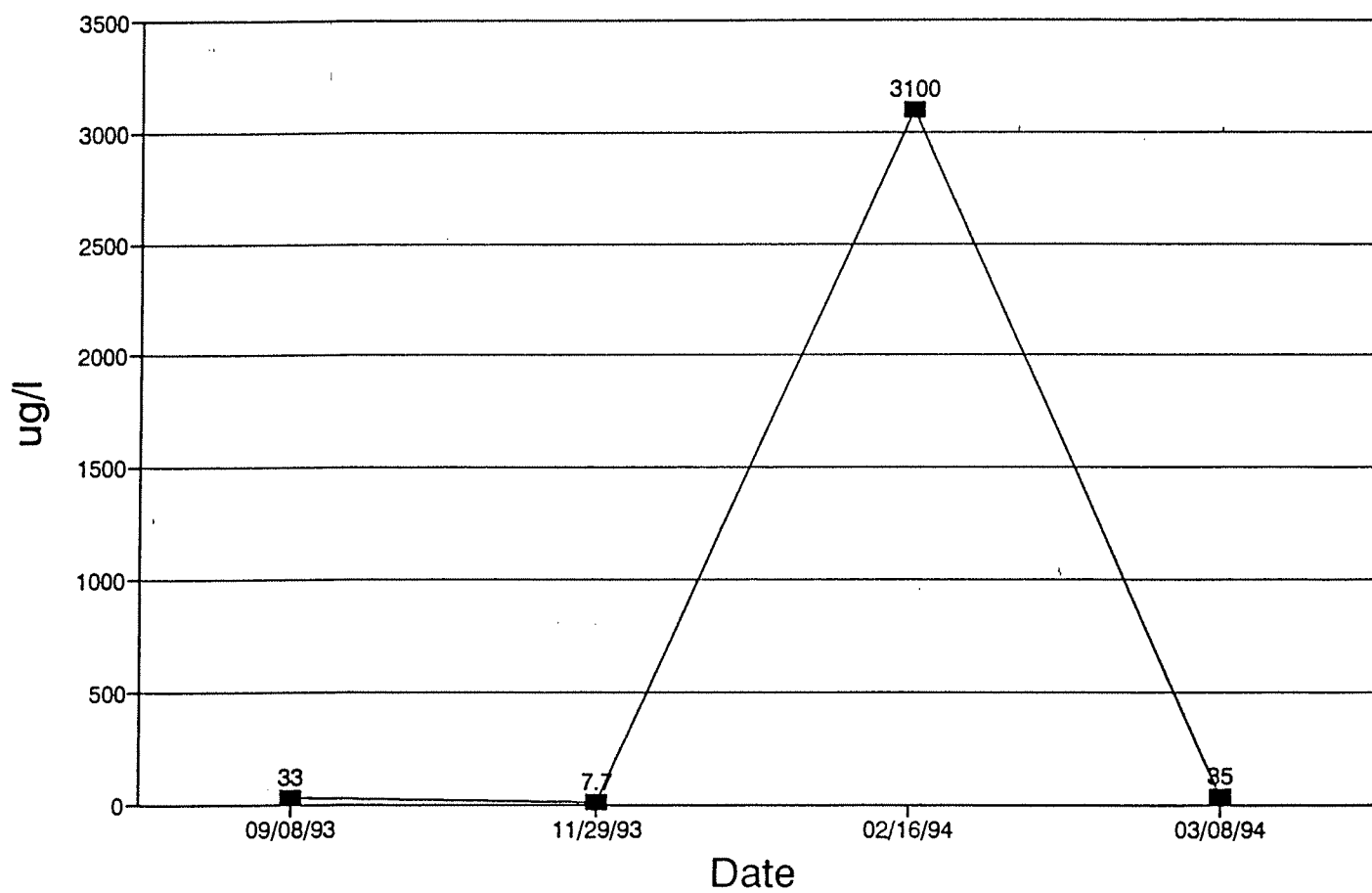


Figure 50
CIS-1,2-DCE Concentration in GW-7

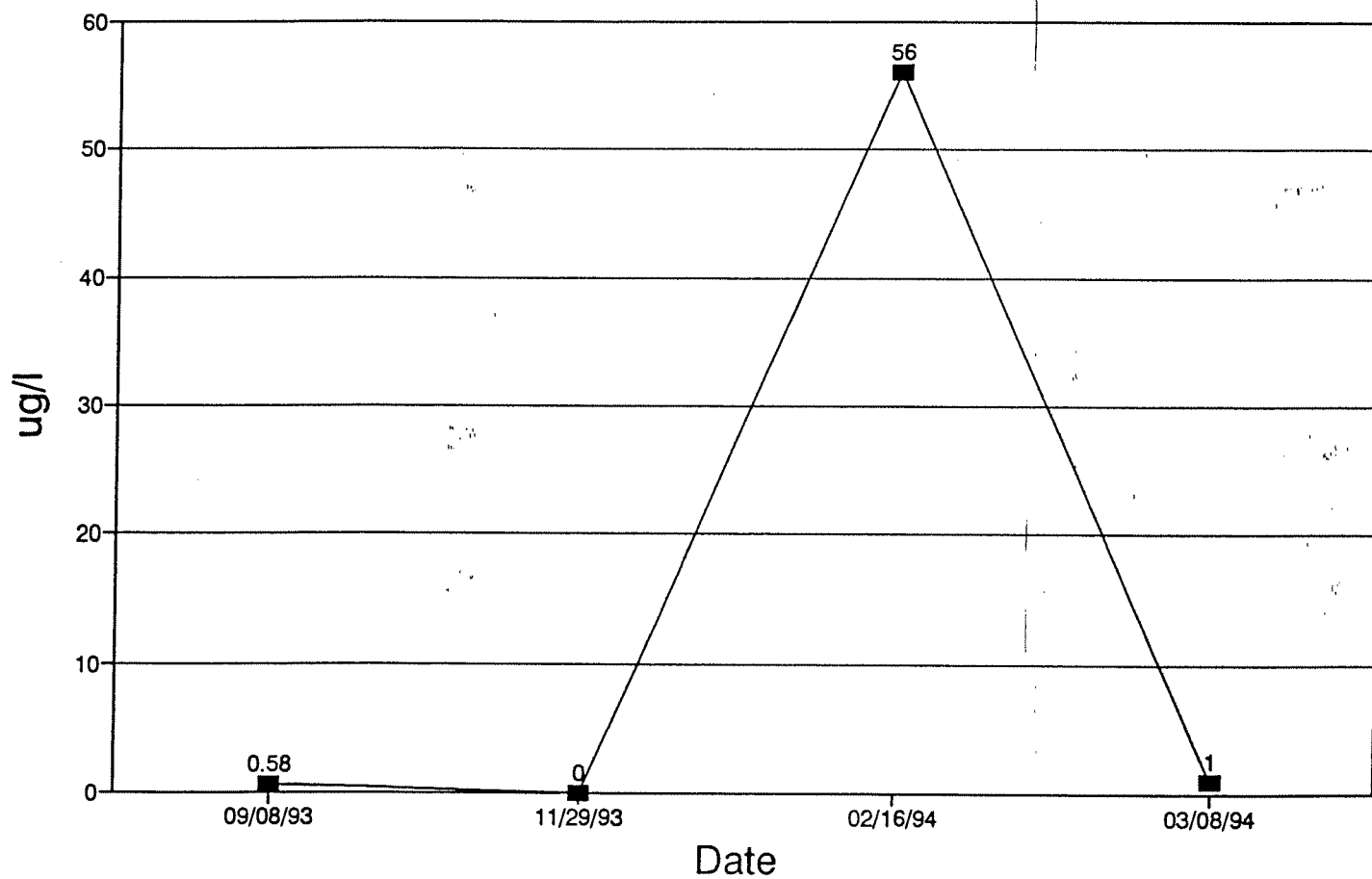


Figure 51
Historic Groundwater Elevation in GW-8

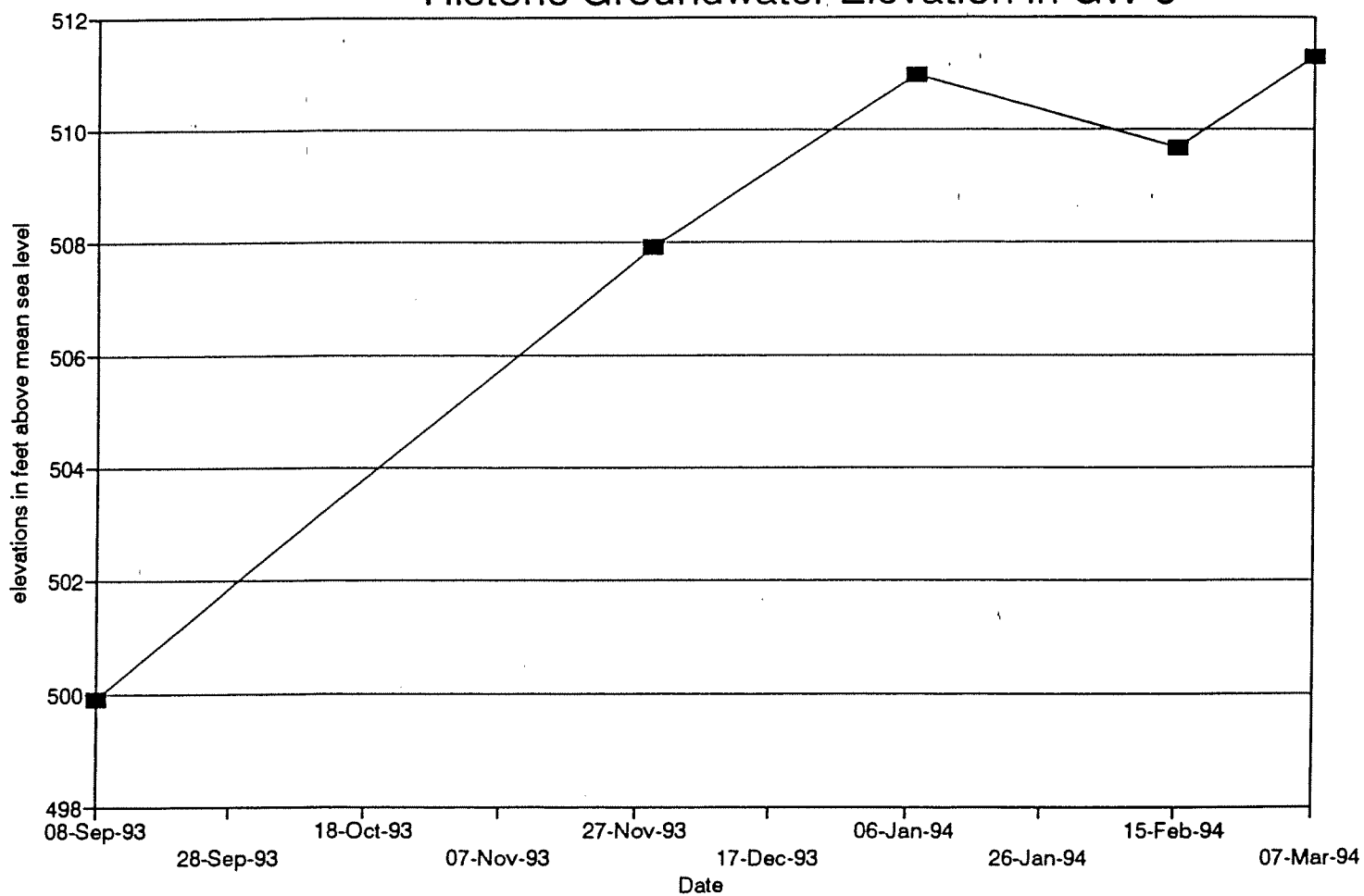


Figure 52
Nitrate Concentration in GW-8

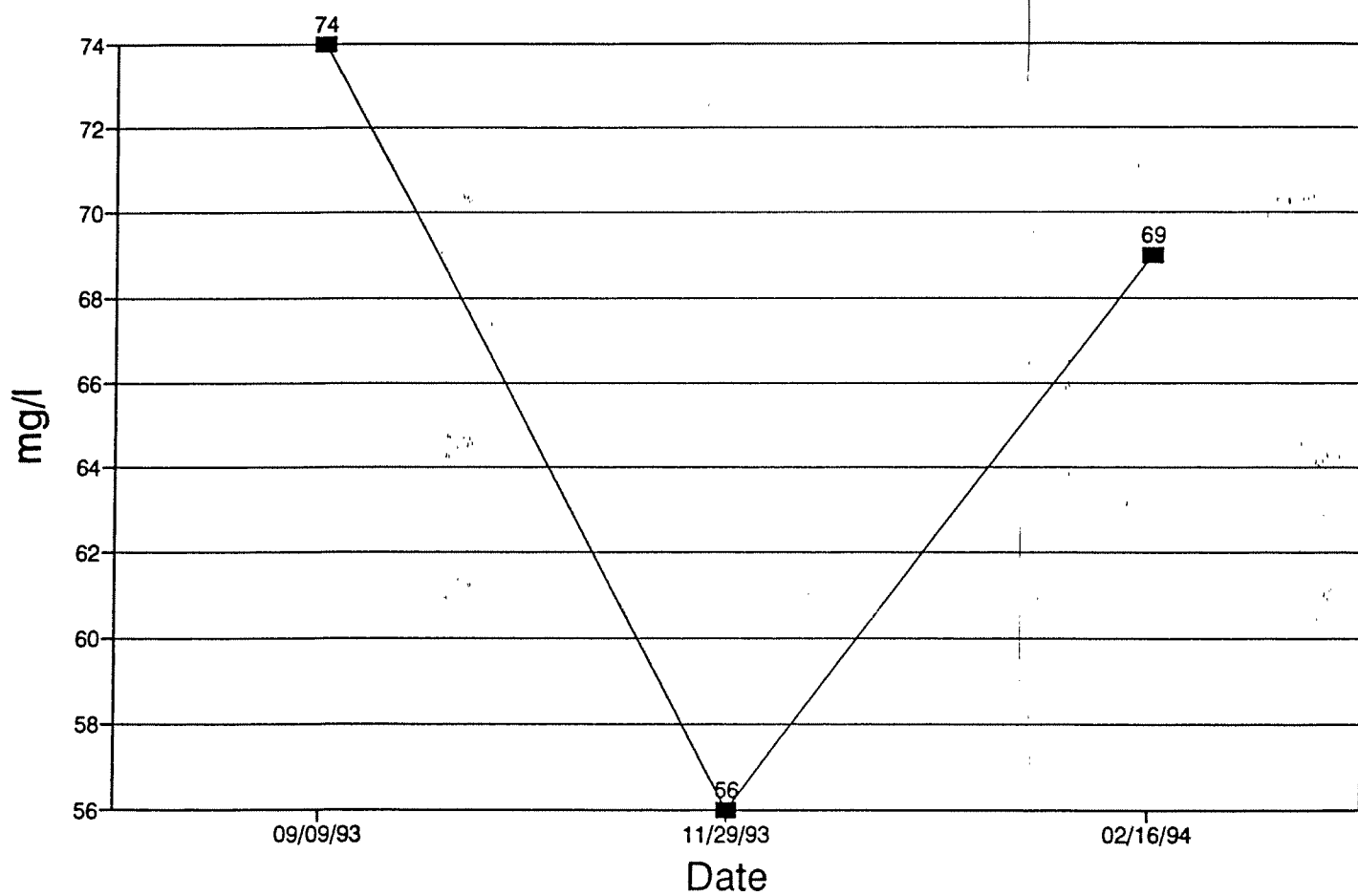


Figure 53
TCE Concentration in GW-8

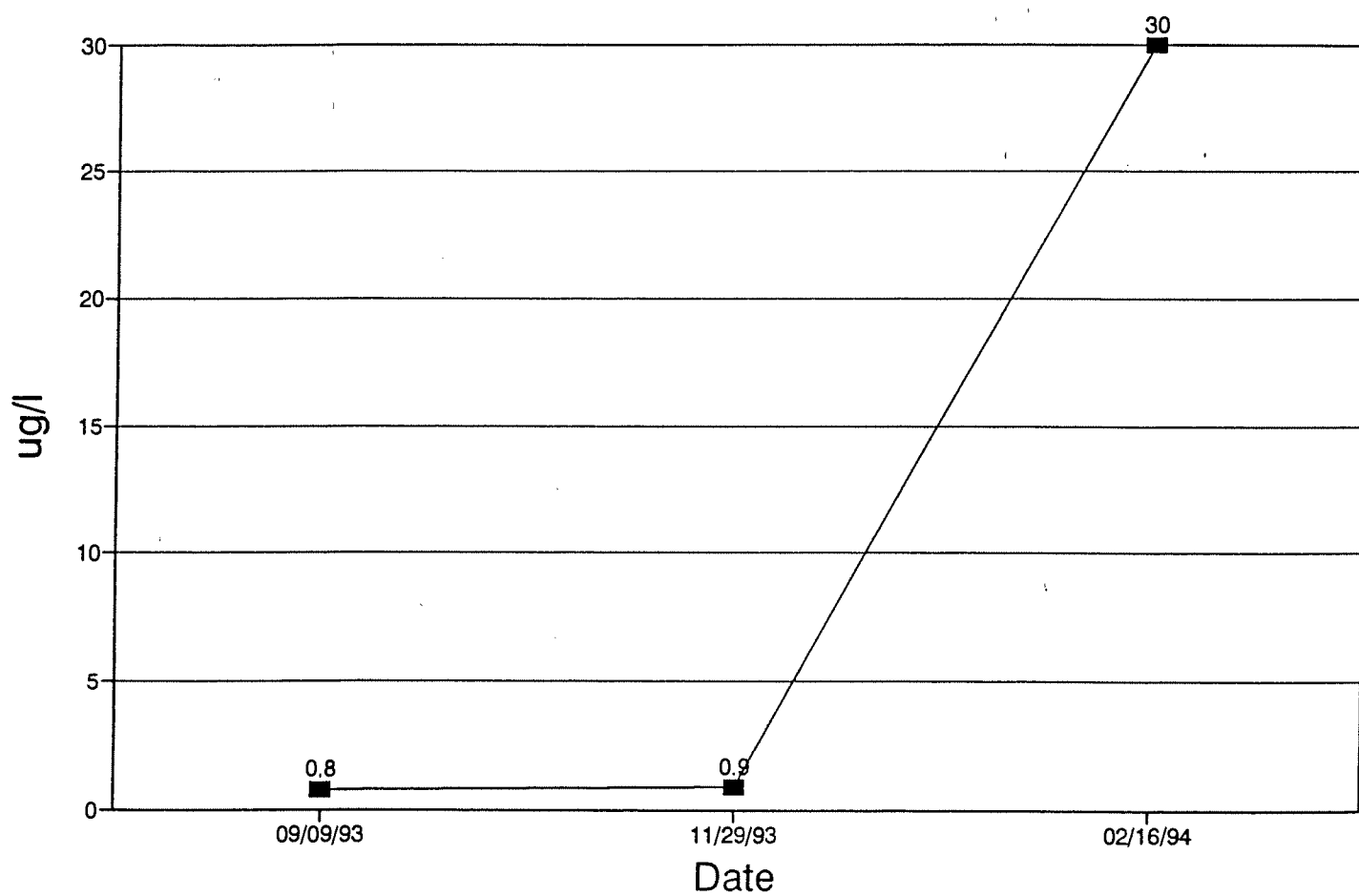


Figure 54
PCE Concentration in GW-8

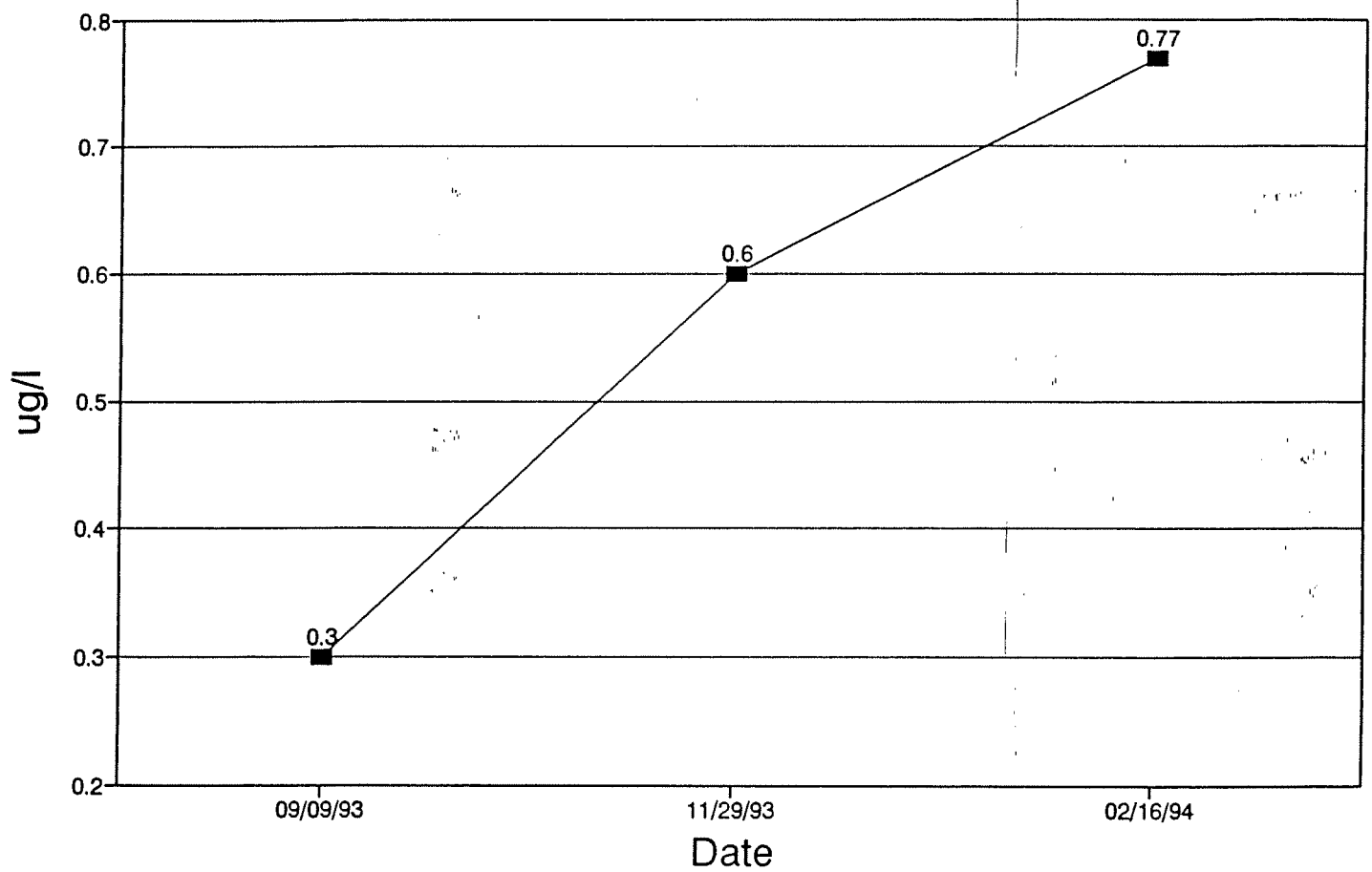


Figure 55
CIS-1,2-DCE Concentration in GW-8

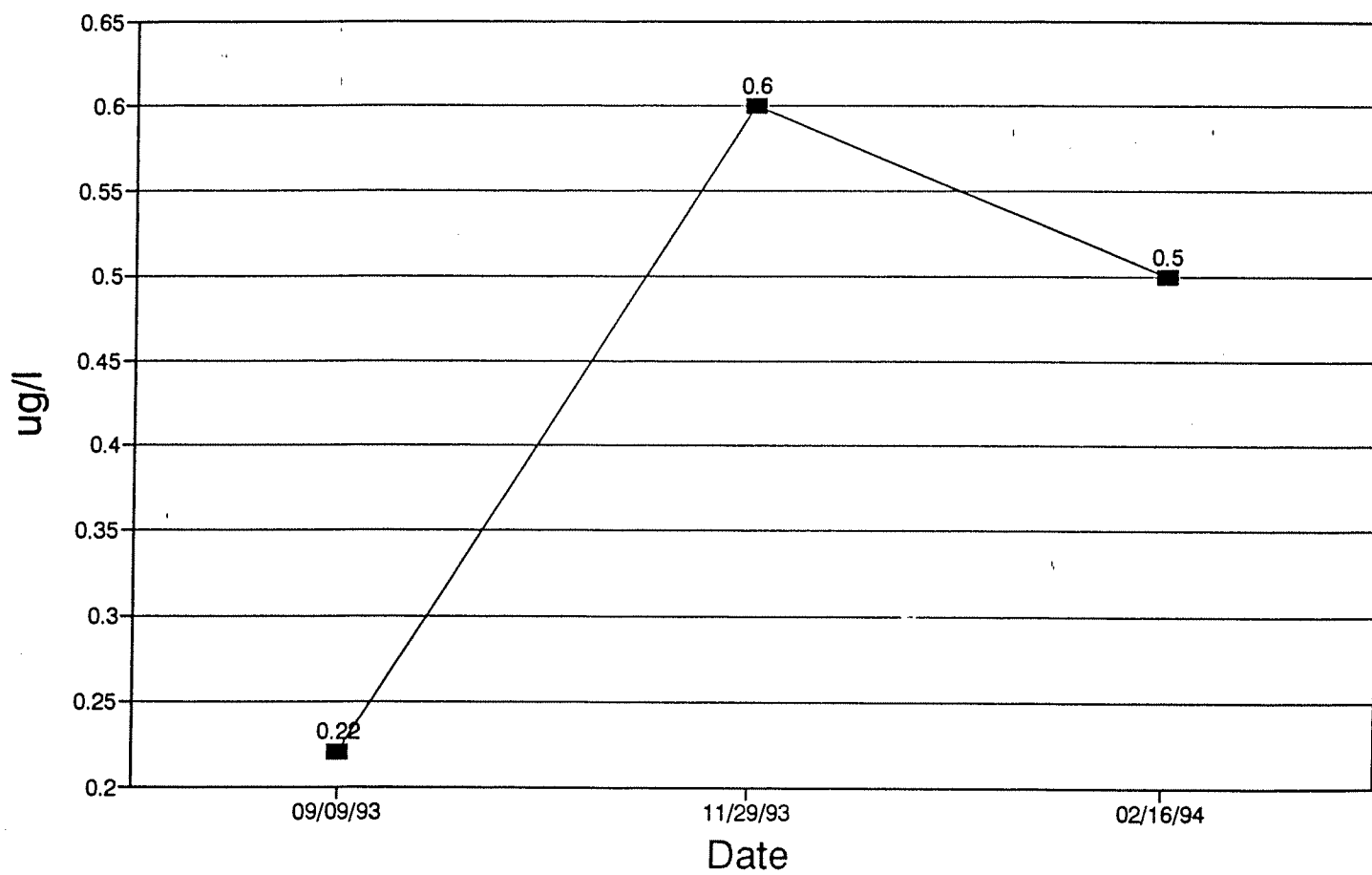


Figure 56
Historic Groundwater Elevation in GW-9

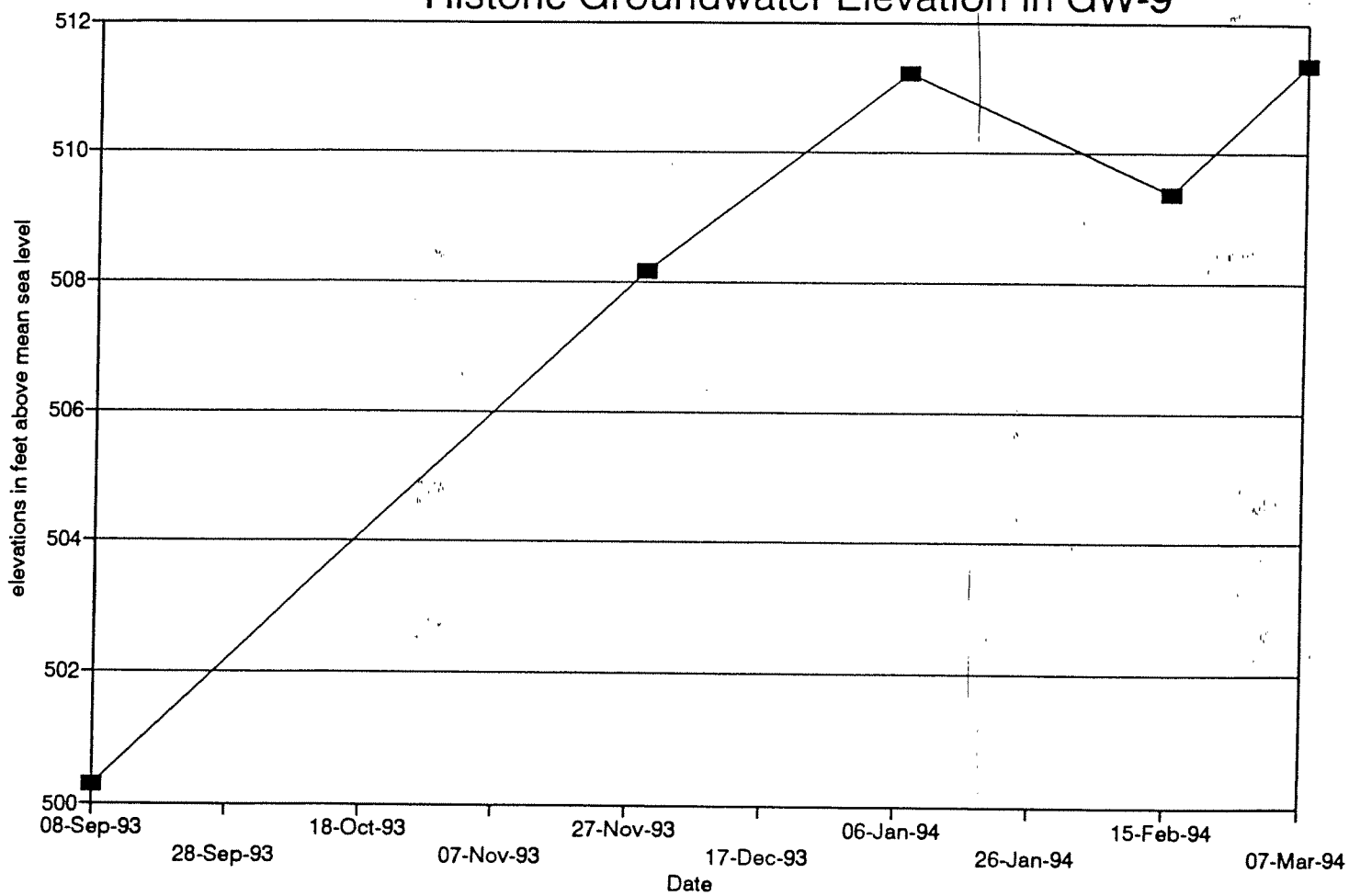


Figure 57
Nitrate Concentration in GW-9

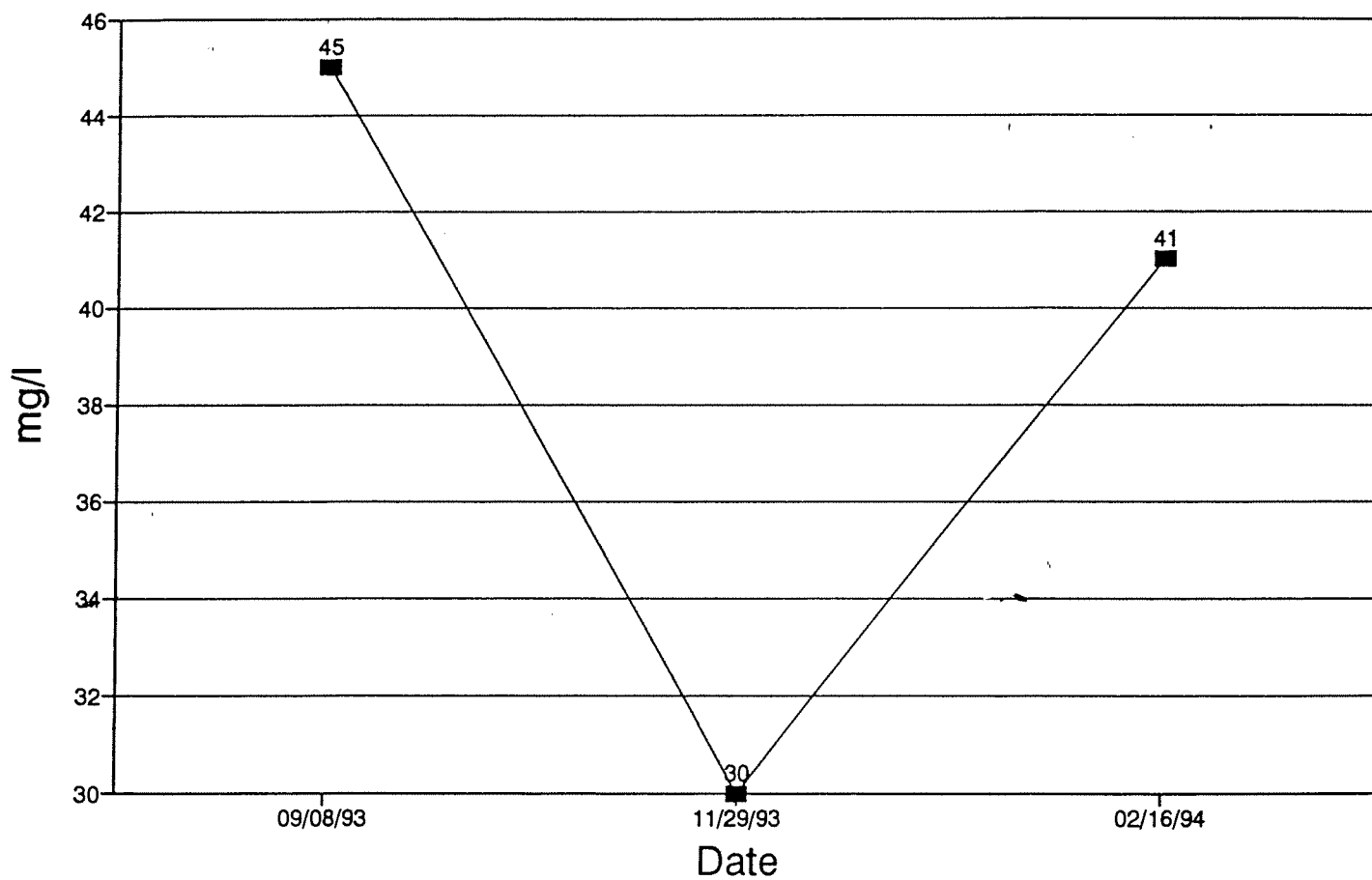


Figure 58
TCE Concentration in GW-9

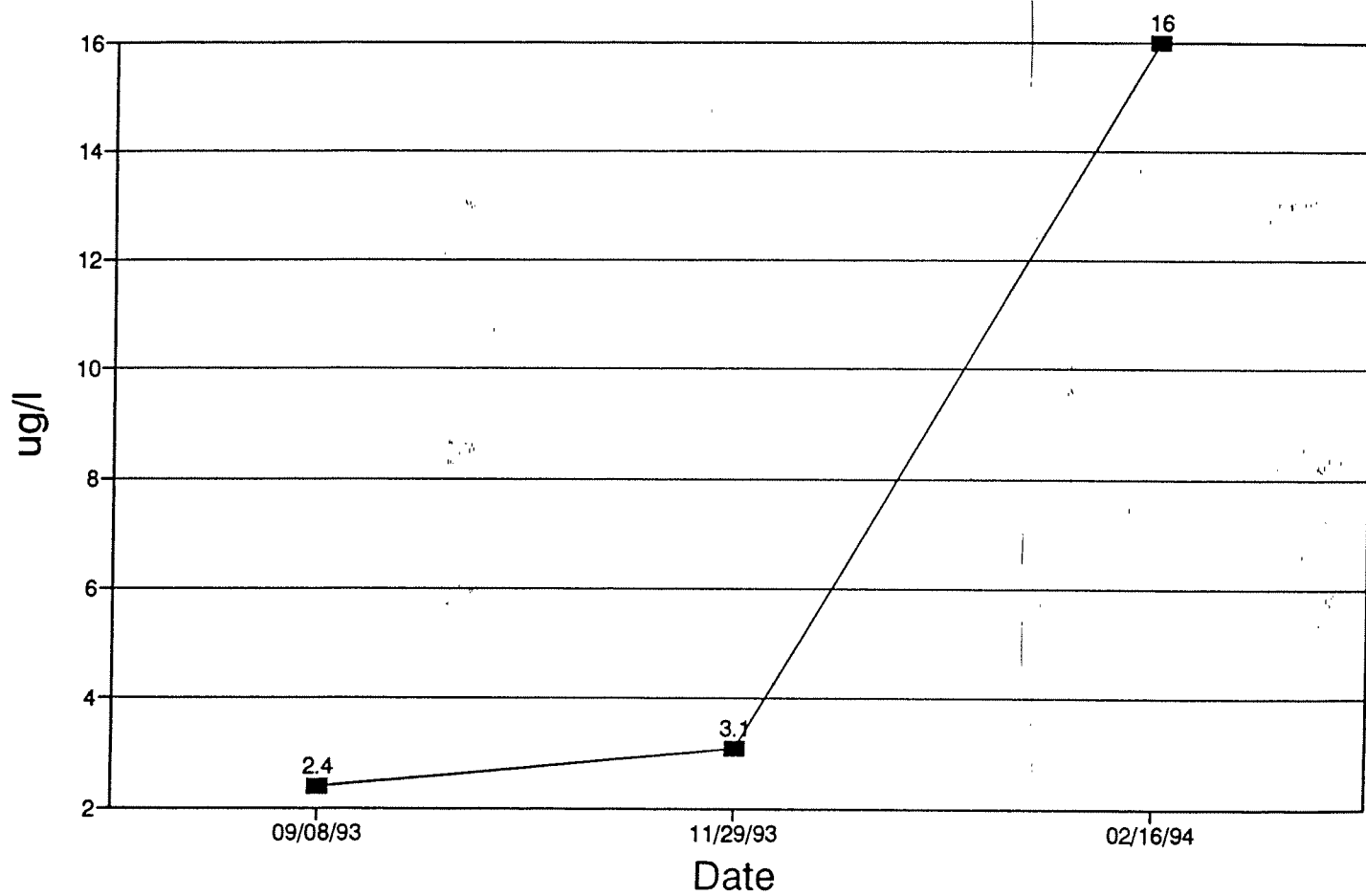


Figure 59
PCE Concentration in GW-9

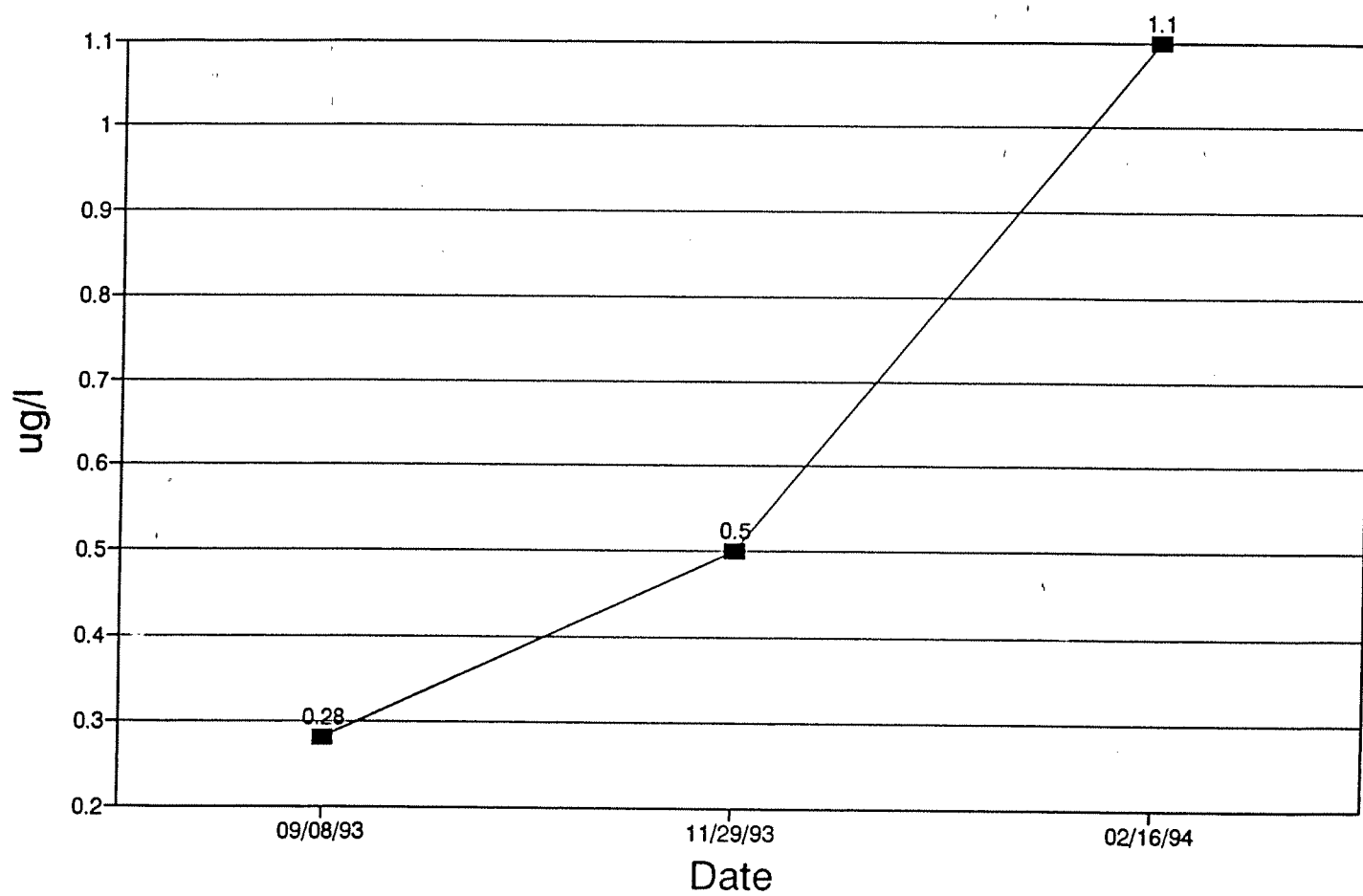


Figure 60
Historic Groundwater Elevation in GW-10

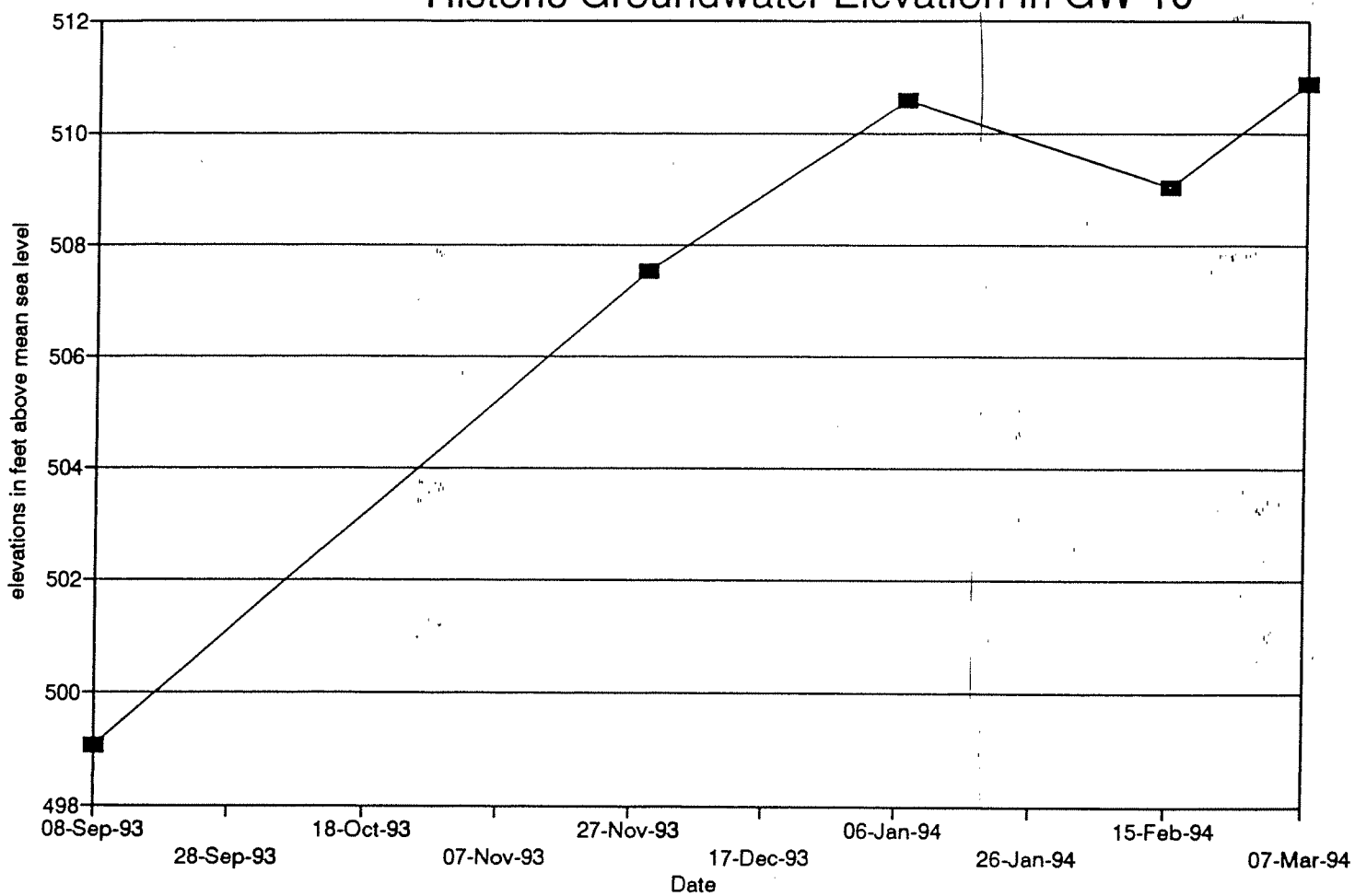


Figure 61
Nitrate Concentration in GW-10

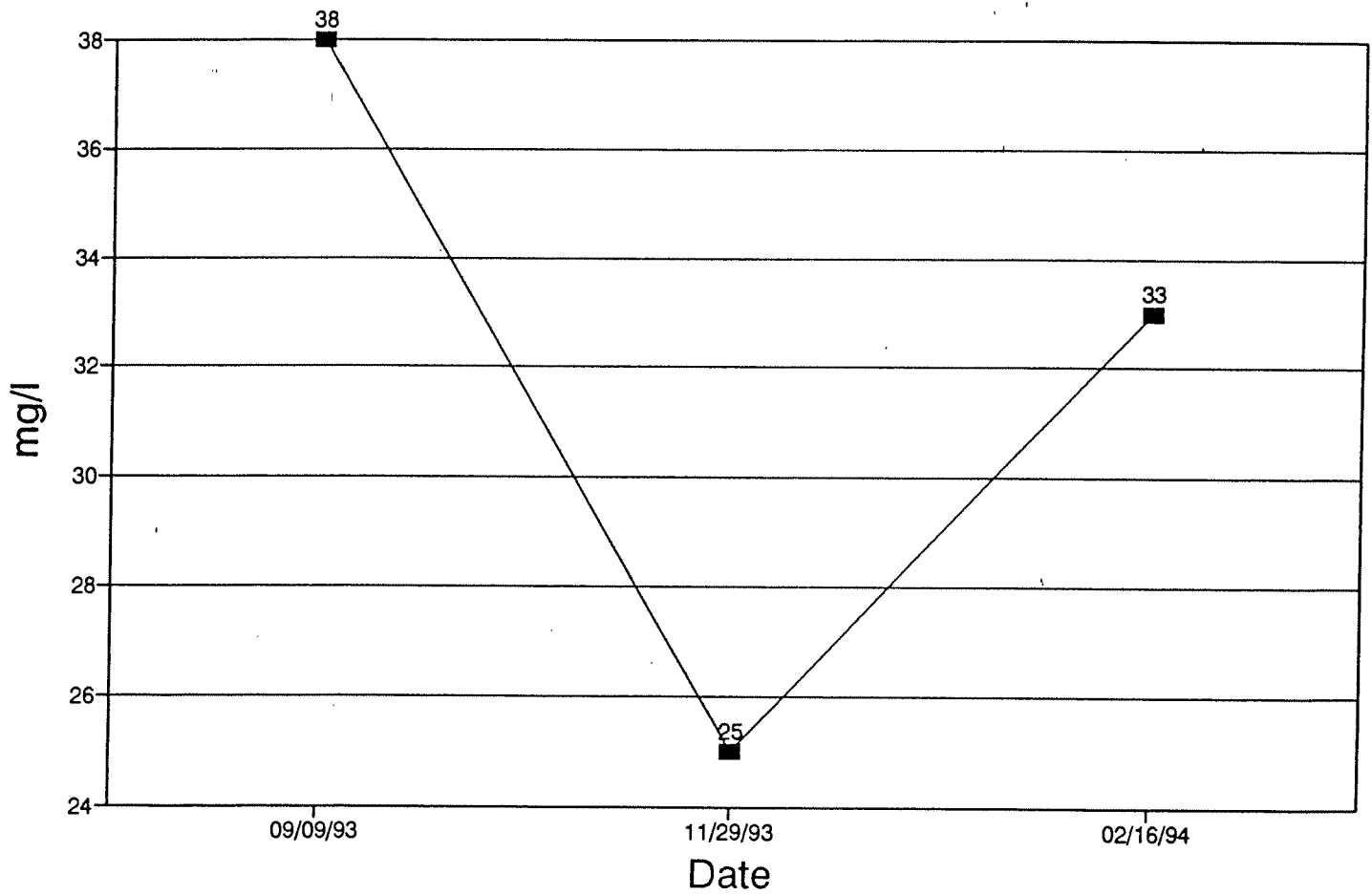


Figure 62
TCE Concentration in GW-10

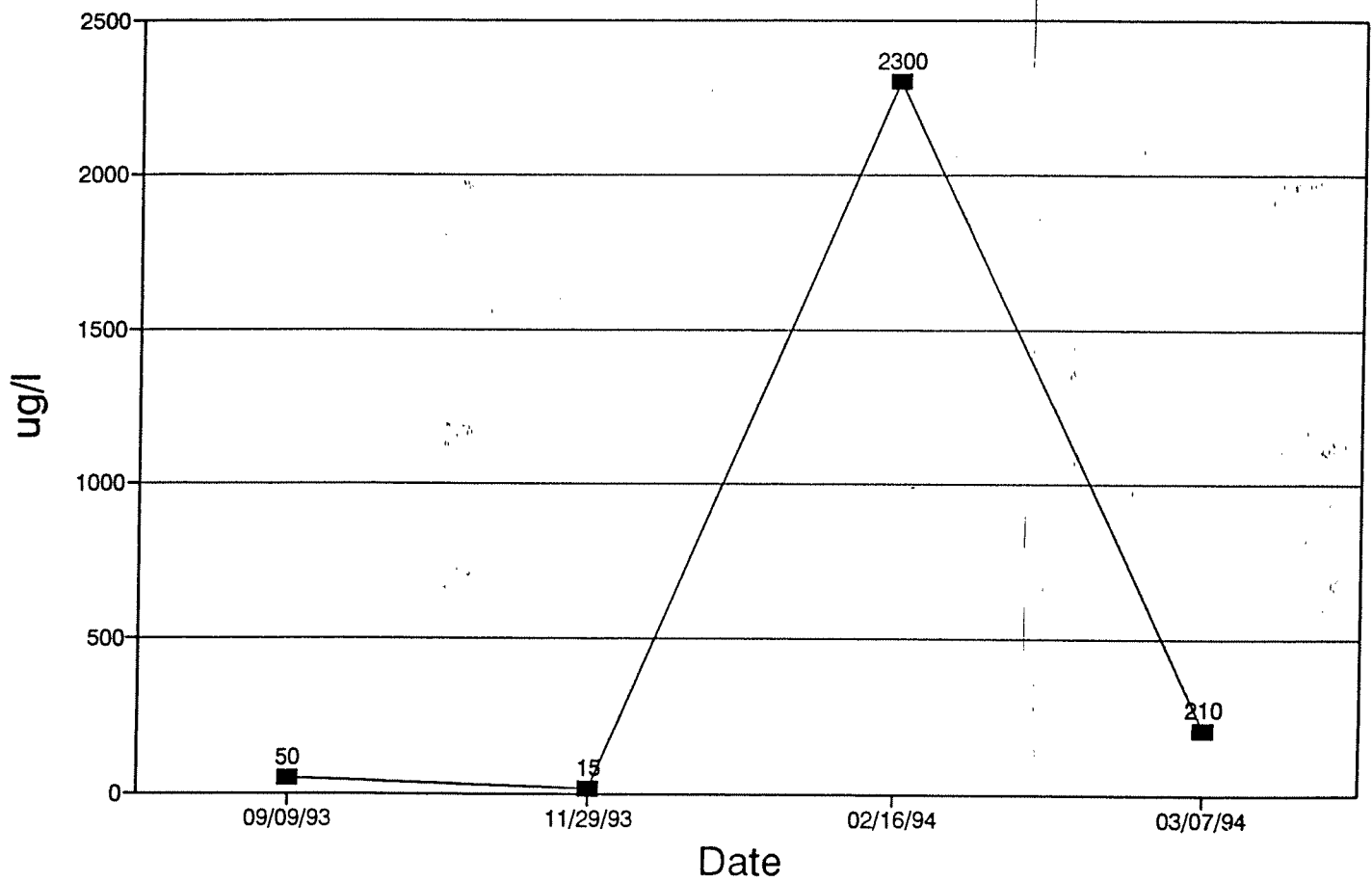
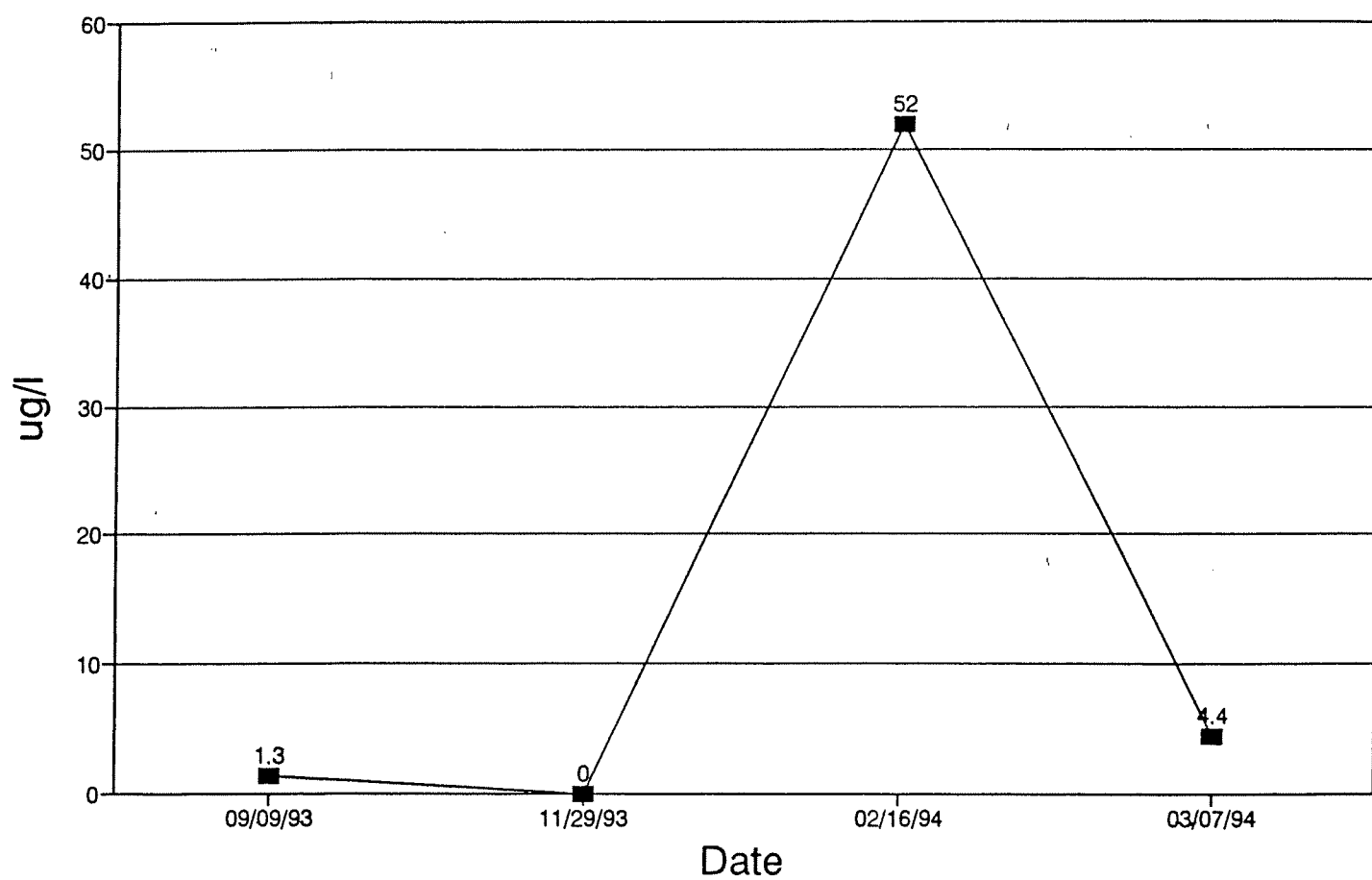
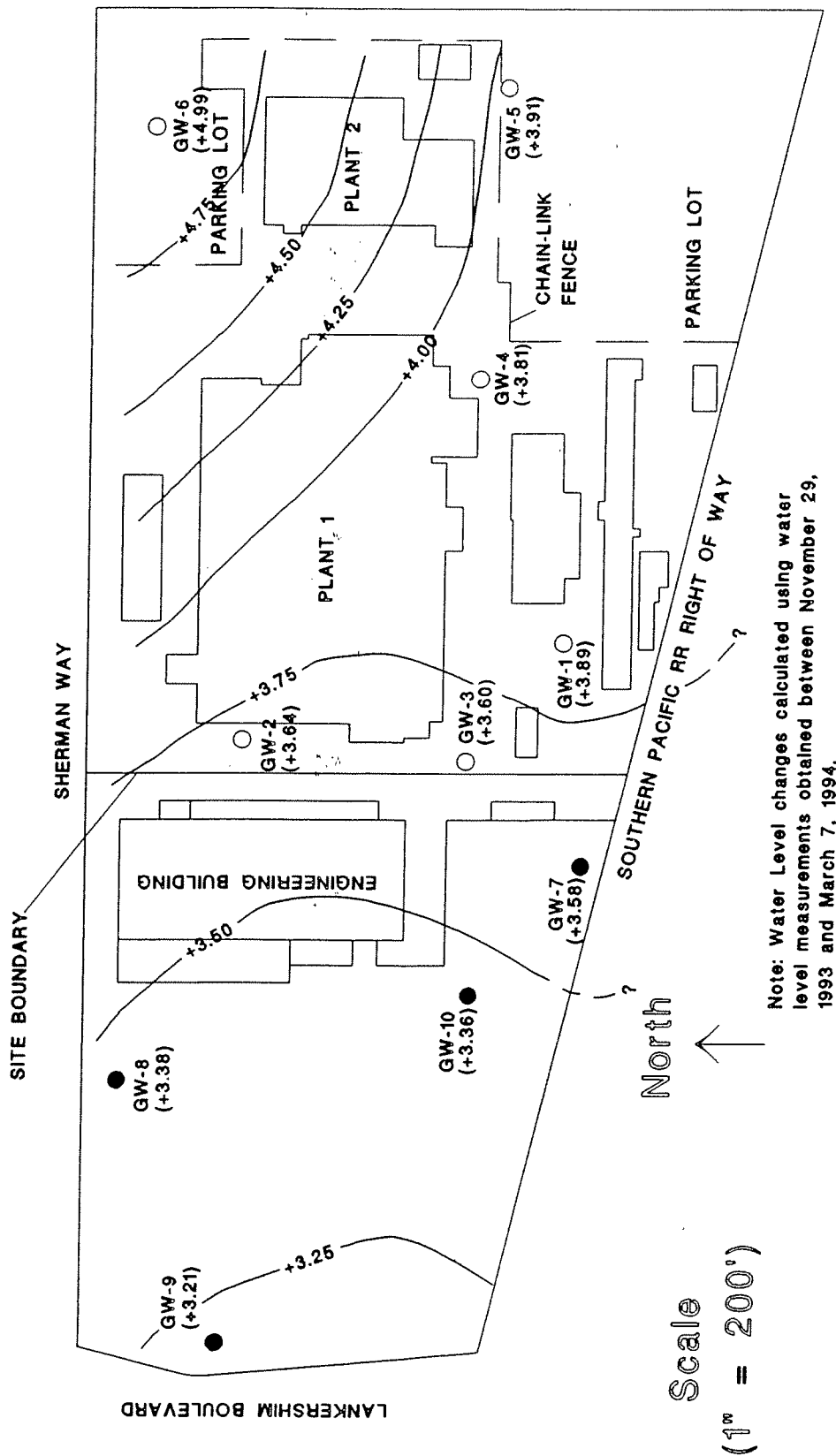


Figure 63
CIS-1,2-DCE Concentration in GW-10





Legend:

- Denotes approximate location of onsite monitoring well.
- Denotes approximate location of offsite monitoring well.
- Denotes change in groundwater elevation in feet.
- +3.25 Denotes change in groundwater elevation contour in feet. Queried where uncertain.

**ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility**

**WATER LEVEL CHANGE (RECOVERY)
(1ST QUARTER 1994)**

FIGURE 64

File Name: AS3-A57GECM

SEACOR

APPENDIX A
STANDARD OPERATING PROCEDURES

GROUNDWATER LEVEL MEASUREMENT PROTOCOL

Prior to purging and sampling of groundwater monitoring wells, a Environmental Instruments Company (EI) water level meter was used to measure the depth to the water surface inside each monitoring well. Water level measurements were collected from the wells in the shortest time-frame possible, in order to obtain an accurate representation of the groundwater potentiometric surface. Initially, the meter was lowered down the well until the water surface within the monitoring well was reached. The depth to the water surface was measured from a designated point on the well casing to the nearest 0.01 foot and recorded on a standard *SEACOR* form. This procedure was repeated a second time to confirm the accuracy of the first measurement. The water level meter probe and associated measuring tape were washed in a solution of warm tap water and trisodium phosphate (TSP) and rinsed with de-ionized water prior to, and between monitoring wells to reduce the possibility of cross-contamination.

GROUNDWATER PURGING AND SAMPLING PROTOCOL

The bladder pump intake was set at a depth of approximately 7 feet below static water level in each well. The inflatable packer, located directly beneath the pump intake, was used to isolate the upper 8 to 9 feet of water in the well during sampling. An average pumping rate of 1,800 milliliters per minute (ml/min) was used to purge approximately 3 to 5 well casing volumes of stagnant water from each well prior to sampling. Measurements of pH, temperature, and electric conductivity were taken during purging and recorded on a standard *SEACOR* form. Once these physical parameters stabilized, this was an indication that water in the monitoring well was representative of water from the formation, and a groundwater sample was collected. During sample collection, the pumping rate was lowered to approximately 100 ml/min.

APPENDIX B
LABORATORY RESULTS

004420

801 Western Avenue
Glendale, CA 91201
18/247-5737
Fax: 818/247-9797

LOG NO: G94-02-311

Received: 18 FEB 94

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-311-1	GW-10	17 FEB 94
02-311-2	GW-8	17 FEB 94
02-311-3	GW-7	17 FEB 94

PARAMETER	02-311-1	02-311-2	02-311-3
E524.2/VOC			
Date Analyzed	02/26/94	02/26/94	02/26/94
Dilution Factor, Times	100	1	250
1,1,1,2-Tetrachloroethane, ug/L	<20	<0.2	<50
1,1,1-Trichloroethane, ug/L	<20	<0.2	<50
1,1,2,2-Tetrachloroethane, ug/L	<20	<0.2	<50
1,1,2-Trichloroethane, ug/L	<20	<0.2	<50
1,1-Dichloroethane, ug/L	<20	<0.2	<50
1,1-Dichloroethene, ug/L	<20	<0.2	<50
1,1-Dichloropropene, ug/L	<20	<0.2	<50
1,2,3-Trichlorobenzene, ug/L	<20	<0.2	<50
1,2,3-Trichloropropane, ug/L	<20	<0.2	<50
1,2,4-Trichlorobenzene, ug/L	<20	<0.2	<50
1,2,4-Trimethylbenzene, ug/L	<20	<0.2	<50
1,2-Dibromo-3-chloropropane, ug/L	<50	<0.5	<200
1,2-Dibromoethane, ug/L	<20	<0.2	<50
1,2-Dichloroethane, ug/L	<20	<0.2	<50
1,2-Dichlorobenzene, ug/L	<20	<0.2	<50
1,2-Dichloropropane, ug/L	<20	<0.2	<50
1,3,5-Trimethylbenzene, ug/L	<20	<0.2	<50
1,3-Dichlorobenzene, ug/L	<20	<0.2	<50
1,3-Dichloropropane, ug/L	<20	<0.2	<50
1,4-Dichlorobenzene, ug/L	<20	<0.2	<50
2,2-Dichloropropane, ug/L	<20	<0.2	<50
2-Chlorotoluene, ug/L	<20	<0.2	<50
4-Chlorotoluene, ug/L	<20	<0.2	<50

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Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
02-311-1	GW-10	17 FEB 94		
02-311-2	GW-8	17 FEB 94		
02-311-3	GW-7	17 FEB 94		
PARAMETER	02-311-1	02-311-2	02-311-3	
Bromobenzene, ug/L	<20	<0.2	<50	
Bromochloromethane, ug/L	<20	<0.2	<50	
Bromodichloromethane, ug/L	<20	<0.2	<50	
Bromomethane, ug/L	<50	<0.5	<200	
Benzene, ug/L	<20	<0.2	<50	
Bromoform, ug/L	<20	<0.2	<50	
Chlorobenzene, ug/L	<20	<0.2	<50	
Carbon Tetrachloride, ug/L	<20	1.3	<50	
Chloroethane, ug/L	<20	<0.2	<50	
Chloroform, ug/L	27	0.40	110	
Chloromethane, ug/L	<20	<0.2	<50	
Dibromochloromethane, ug/L	<20	<0.2	<50	
Dibromomethane, ug/L	<20	<0.2	<50	
Ethylbenzene, ug/L	<20	<0.2	<50	
Freon 113, ug/L	<20	<0.2	<50	
Hexachlorobutadiene, ug/L	<20	<0.2	<50	
Isopropylbenzene, ug/L	<20	<0.2	<50	
Methylene chloride, ug/L	<20	<0.2	<50	
N-Butylbenzene, ug/L	<20	<0.2	<50	
N-Propylbenzene, ug/L	<20	<0.2	<50	
Naphthalene, ug/L	<100	<1	<300	
Styrene, ug/L	<20	<0.2	<50	
Trichloroethene, ug/L	1600	14	4200	
Trichlorofluoromethane, ug/L	<20	<0.2	<50	
Toluene, ug/L	<20	<0.2	<50	

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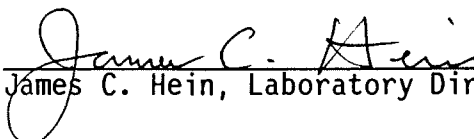
Purchase Order: A0057-001-01

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
02-311-1	GW-10	17 FEB 94		
02-311-2	GW-8	17 FEB 94		
02-311-3	GW-7	17 FEB 94		
PARAMETER	02-311-1	02-311-2	02-311-3	
-Tetrachloroethene, ug/L	<20	0.40	<50	
Vinyl chloride, ug/L	<20	<0.2	<50	
cis-1,2-Dichloroethene, ug/L	31	0.24	83	
cis-1,3-Dichloropropene, ug/L	<20	<0.2	<50	
m- and p-Xylene Isomers, ug/L	<20	<0.2	<50	
o-Xylene, ug/L	<20	<0.2	<50	
p-Isopropyl toluene, ug/L	<20	<0.2	<50	
sec-Butylbenzene, ug/L	<20	<0.2	<50	
trans-1,2-Dichloroethene, ug/L	<20	<0.2	<50	
trans-1,3-Dichloropropene, ug/L	<20	<0.2	<50	
tert-Butylbenzene, ug/L	<20	<0.2	<50	
Other E524.2/VOC	---	---	---	


James C. Hein, Laboratory Director

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ANALYTICAL REPORT

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES				DATE SAMPLED
02-312-1	GW-2				16 FEB 94
02-312-2	GW-7				16 FEB 94
02-312-3	GW-8				16 FEB 94
02-312-4	GW-10				16 FEB 94
02-312-5	GW-9				16 FEB 94
PARAMETER	02-312-1	02-312-2	02-312-3	02-312-4	02-312-5
Anions by IC (C1-300.0), mg/L	32	27	34	22	31
Anions by IC (S04-300.0), mg/L	56	66	55	64	58
Nitrate as NO3 (300.0), mg/L	60	71	69	33	41
Nitrite (by IC), mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Ammonia (350.1), mg/L	<0.1	0.12	<0.1	0.11	0.11
Turbidity (180.1), NTU	21	7.8	23	7.2	1.9
Dissolved Solids (160.1), mg/L	550	550	500	480	410
Alkalinity (310.1)					
Carbonate Alk (as CaCO3), mg/L	<1	<1	<1	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	290	260	240	260	180
Hydroxide Alk (as CaCO3), mg/L	<1	<1	<1	<1	<1
Total Alkalinity (as CaCO3), mg/L	290	260	240	260	180
Calcium (6010), mg/L	130	120	110	110	82
Magnesium (6010), mg/L	27	26	24	23	18
Potassium (6010), mg/L	4.4	4.2	4.5	4.4	3.8
Sodium (6010), mg/L	27	30	28	33	26
Digestion (3010), Date	02/23/94	02/23/94	02/23/94	02/23/94	02/23/94

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES				DATE SAMPLED
02-312-1	GW-2				16 FEB 94
02-312-2	GW-7				16 FEB 94
02-312-3	GW-8				16 FEB 94
02-312-4	GW-10				16 FEB 94
02-312-5	GW-9				16 FEB 94
PARAMETER	02-312-1	02-312-2	02-312-3	02-312-4	02-312-5
TPH (8015M)					
Date Analyzed	02/24/94	02/24/94	02/24/94	02/24/94	02/24/94
Date Extracted	02/23/94	02/23/94	02/23/94	02/23/94	02/23/94
Dilution Factor, Times	1	1	1	1	1
TPH (total), mg/L	<1	<1	<1	<1	<1
Other TPH (8015M)	---	---	---	---	---

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Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-312-1	GW-2	16 FEB 94
02-312-2	GW-7	16 FEB 94
02-312-3	GW-8	16 FEB 94
02-312-4	GW-10	16 FEB 94
02-312-5	GW-9	16 FEB 94

PARAMETER	02-312-1	02-312-2	02-312-3	02-312-4	02-312-5
E524.2/VOC					
Date Analyzed	02/25/94	02/25/94	02/25/94	02/25/94	02/25/94
Dilution Factor, Times	100	200	1	200	1
1,1,1,2-Tetrachloroethane, ug/L	<20	<40	<0.2	<40	<0.2
1,1,1-Trichloroethane, ug/L	<20	<40	0.25	<40	0.42
1,1,2,2-Tetrachloroethane, ug/L	<20	<40	<0.2	<40	<0.2
1,1,2-Trichloroethane, ug/L	<20	<40	<0.2	<40	<0.2
1,1-Dichloroethane, ug/L	<20	<40	<0.2	<40	<0.2
1,1-Dichloroethene, ug/L	<20	<40	<0.2	<40	0.40
1,1-Dichloropropene, ug/L	<20	<40	<0.2	<40	<0.2
1,2,3-Trichlorobenzene, ug/L	<20	<40	0.29	<40	<0.2
1,2,3-Trichloropropane, ug/L	<20	<40	<0.2	<40	<0.2
1,2,4-Trichlorobenzene, ug/L	<20	<40	0.23	<40	<0.2
1,2,4-Trimethylbenzene, ug/L	<20	<40	<0.2	<40	<0.2
1,2-Dibromo-3-chloropropane, ug/L	<50	<100	<0.5	<100	<0.5
1,2-Dibromoethane, ug/L	<20	<40	<0.2	<40	<0.2
1,2-Dichloroethane, ug/L	<20	<40	<0.2	<40	<0.2
1,2-Dichlorobenzene, ug/L	<20	<40	<0.2	<40	<0.2
1,2-Dichloropropane, ug/L	<20	<40	<0.2	<40	<0.2
1,3,5-Trimethylbenzene, ug/L	<20	<40	<0.2	<40	<0.2
1,3-Dichlorobenzene, ug/L	<20	<40	<0.2	<40	<0.2
1,3-Dichloropropane, ug/L	<20	<40	<0.2	<40	<0.2
1,4-Dichlorobenzene, ug/L	<20	<40	<0.2	<40	<0.2

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-312-1	GW-2	16 FEB 94
02-312-2	GW-7	16 FEB 94
02-312-3	GW-8	16 FEB 94
02-312-4	GW-10	16 FEB 94
02-312-5	GW-9	16 FEB 94

PARAMETER	02-312-1	02-312-2	02-312-3	02-312-4	02-312-5
2,2-Dichloropropane, ug/L	<20	<40	<0.2	<40	<0.2
2-Chlorotoluene, ug/L	<20	<40	<0.2	<40	<0.2
4-Chlorotoluene, ug/L	<20	<40	<0.2	<40	<0.2
Bromobenzene, ug/L	<20	<40	<0.2	<40	<0.2
Bromochloromethane, ug/L	<20	<40	<0.2	<40	<0.2
Bromodichloromethane, ug/L	<20	<40	<0.2	<40	<0.2
Bromomethane, ug/L	<50	<100	<0.5	<100	<0.5
Benzene, ug/L	<20	<40	<0.2	<40	<0.2
Bromoform, ug/L	<20	<40	<0.2	<40	<0.2
Chlorobenzene, ug/L	<20	<40	<0.2	<40	<0.2
Carbon Tetrachloride, ug/L	<20	<40	0.92	<40	<0.2
Chloroethane, ug/L	<20	<40	<0.2	<40	<0.2
Chloroform, ug/L	<20	80	0.52	46	0.34
Chloromethane, ug/L	<20	<40	<0.2	<40	<0.2
Dibromochloromethane, ug/L	<20	<40	<0.2	<40	<0.2
Dibromomethane, ug/L	<20	<40	<0.2	<40	<0.2
Ethylbenzene, ug/L	<20	<40	<0.2	<40	<0.2
Freon 113, ug/L	<20	<40	<0.2	<40	<0.2
Hexachlorobutadiene, ug/L	<20	<40	<0.2	<40	<0.2
Isopropylbenzene, ug/L	<20	<40	<0.2	<40	<0.2
Methylene chloride, ug/L	<20	<40	<0.2	<40	<0.2
N-Butylbenzene, ug/L	<20	<40	<0.2	<40	<0.2
N-Propylbenzene, ug/L	<20	<40	<0.2	<40	<0.2

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LOG NO: G94-02-312

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED				
02-312-1	GW-2	16 FEB 94				
02-312-2	GW-7	16 FEB 94				
02-312-3	GW-8	16 FEB 94				
02-312-4	GW-10	16 FEB 94				
02-312-5	GW-9	16 FEB 94				
PARAMETER	02-312-1	02-312-2	02-312-3	02-312-4	02-312-5	
Naphthalene, ug/L	<100	<200	<1	<200	<1	
Styrene, ug/L	<20	<40	<0.2	<40	<0.2	
Trichloroethene, ug/L	890	3100	30	2300	16	
Trichlorofluoromethane, ug/L	<20	<40	<0.2	<40	<0.2	
Toluene, ug/L	<20	<40	<0.2	<40	<0.2	
Tetrachloroethene, ug/L	<20	<40	0.77	<40	1.1	
Vinyl chloride, ug/L	<20	<40	<0.2	<40	<0.2	
cis-1,2-Dichloroethene, ug/L	<20	56	0.50	52	<0.2	
cis-1,3-Dichloropropene, ug/L	<20	<40	<0.2	<40	<0.2	
m- and p-Xylene Isomers, ug/L	<20	<40	<0.2	<40	<0.2	
o-Xylene, ug/L	<20	<40	<0.2	<40	<0.2	
p-Isopropyl toluene, ug/L	<20	<40	<0.2	<40	<0.2	
sec-Butylbenzene, ug/L	<20	<40	<0.2	<40	<0.2	
trans-1,2-Dichloroethene, ug/L	<20	<40	<0.2	<40	<0.2	
trans-1,3-Dichloropropene, ug/L	<20	<40	<0.2	<40	<0.2	
tert-Butylbenzene, ug/L	<20	<40	<0.2	<40	<0.2	
Other E524.2/VOC	---	---	---	---	---	

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-312-6	GW-3	16 FEB 94
PARAMETER	02-312-6	
Anions by IC (C1-300.0), mg/L	28	
Anions by IC (S04-300.0), mg/L	52	
Nitrate as NO3 (300.0), mg/L	60	
Nitrite (by IC), mg/L	<0.1	
Ammonia (350.1), mg/L	0.10	
Turbidity (180.1), NTU	27	
Dissolved Solids (160.1), mg/L	460	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	210	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	210	
Calcium (6010), mg/L	100	
Magnesium (6010), mg/L	21	
Potassium (6010), mg/L	4.2	
Sodium (6010), mg/L	25	
Digestion (3010), Date	02/23/94	
TPH (8015M)		
Date Analyzed	02/24/94	
Date Extracted	02/23/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-312-6	GW-3	16 FEB 94
PARAMETER	02-312-6	
E524.2/VOC		
Date Analyzed	02/26/94	
Dilution Factor, Times	20	
1,1,1,2-Tetrachloroethane, ug/L	<4	
1,1,1-Trichloroethane, ug/L	0.31	
1,1,2,2-Tetrachloroethane, ug/L	<4	
1,1,2-Trichloroethane, ug/L	<4	
1,1-Dichloroethane, ug/L	<4	
1,1-Dichloroethene, ug/L	0.31	
1,1-Dichloropropene, ug/L	<4	
1,2,3-Trichlorobenzene, ug/L	<4	
1,2,3-Trichloropropane, ug/L	<4	
1,2,4-Trichlorobenzene, ug/L	<4	
1,2,4-Trimethylbenzene, ug/L	<4	
1,2-Dibromo-3-chloropropane, ug/L	<10	
1,2-Dibromoethane, ug/L	<4	
1,2-Dichloroethane, ug/L	<4	
1,2-Dichlorobenzene, ug/L	<4	
1,2-Dichloropropane, ug/L	<4	
1,3,5-Trimethylbenzene, ug/L	<4	
1,3-Dichlorobenzene, ug/L	<4	
1,3-Dichloropropane, ug/L	<4	
1,4-Dichlorobenzene, ug/L	<4	
2,2-Dichloropropane, ug/L	<4	
2-Chlorotoluene, ug/L	<4	
4-Chlorotoluene, ug/L	<4	
Bromobenzene, ug/L	<4	

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-312-6	GW-3	16 FEB 94
PARAMETER	02-312-6	
Bromochloromethane, ug/L	<4	
Bromodichloromethane, ug/L	<4	
Bromomethane, ug/L	<10	
Benzene, ug/L	<4	
Bromoform, ug/L	<4	
Chlorobenzene, ug/L	<4	
Carbon Tetrachloride, ug/L	<4	
Chloroethane, ug/L	<4	
Chloroform, ug/L	<4	
Chloromethane, ug/L	<4	
Dibromochloromethane, ug/L	<4	
Dibromomethane, ug/L	<4	
Ethylbenzene, ug/L	<4	
Freon 113, ug/L	<4	
Hexachlorobutadiene, ug/L	<4	
Isopropylbenzene, ug/L	<4	
Methylene chloride, ug/L	<4	
N-Butylbenzene, ug/L	<4	
N-Propylbenzene, ug/L	<4	
Naphthalene, ug/L	<20	
Styrene, ug/L	<4	
Trichloroethene, ug/L	15	
Trichlorofluoromethane, ug/L	<4	
Toluene, ug/L	<4	
Tetrachloroethene, ug/L	<4	
Vinyl chloride, ug/L	<4	
cis-1,2-Dichloroethene, ug/L	0.26	

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-312-6	GW-3	16 FEB 94
PARAMETER	02-312-6	
cis-1,3-Dichloropropene, ug/L	<4	
m- and p-Xylene Isomers, ug/L	<4	
o-Xylene, ug/L	<4	
p-Isopropyl toluene, ug/L	<4	
sec-Butylbenzene, ug/L	<4	
trans-1,2-Dichloroethene, ug/L	<4	
trans-1,3-Dichloropropene, ug/L	<4	
tert-Butylbenzene, ug/L	<4	
Other E524.2/VOC	---	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
02-312-7	Equipment Blank	17 FEB 94
PARAMETER	02-312-7	
Anions by IC (C1-300.0), mg/L	<0.05	
Anions by IC (S04-300.0), mg/L	<0.1	
Nitrate as NO3 (300.0), mg/L	<0.1	
Nitrite (by IC), mg/L	<0.1	
Ammonia (350.1), mg/L	<0.1	
Turbidity (180.1), NTU	<0.1	
Dissolved Solids (160.1), mg/L	35	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	<10	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	<10	
Calcium (6010), mg/L	<0.5	
Magnesium (6010), mg/L	<0.1	
Potassium (6010), mg/L	<0.5	
Sodium (6010), mg/L	1.3	
Digestion (3010), Date	02/23/94	
TPH (8015M)		
Date Analyzed	02/24/94	
Date Extracted	02/23/94	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
02-312-7	Equipment Blank	17 FEB 94
PARAMETER	02-312-7	
E524.2/VOC		
Date Analyzed	02/25/94	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.2	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	0.26	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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REPORT OF ANALYTICAL RESULTS

Page 12

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
02-312-7	Equipment Blank	17 FEB 94
PARAMETER	02-312-7	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.2	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	<0.2	
Chloromethane, ug/L	<0.2	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	<0.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	0.30	
Tetrachloroethene, ug/L	0.95	
Vinyl chloride, ug/L	<0.2	
cis-1,2-Dichloroethene, ug/L	<0.2	

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REPORT OF ANALYTICAL RESULTS

Page 13

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
02-312-7	Equipment Blank	17 FEB 94
PARAMETER	02-312-7	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
02-312-8	Trip Blank	17 FEB 94
PARAMETER	02-312-8	
E524.2/VOC		
Date Analyzed	02/25/94	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.2	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
02-312-8	Trip Blank	17 FEB 94
PARAMETER	02-312-8	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.2	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	<0.2	
Chloromethane, ug/L	<0.2	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<1	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	0.49	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	<0.2	
Vinyl chloride, ug/L	<0.2	
cis-1,2-Dichloroethene, ug/L	<0.2	

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
02-312-8	Trip Blank	17 FEB 94
PARAMETER	02-312-8	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	


James C. Hein, Laboratory Director

BCA

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-345-1	GW-1	18 FEB 94
02-345-2	GW-4	18 FEB 94
02-345-3	GW-5	18 FEB 94
02-345-4	GW-6	18 FEB 94

PARAMETER	02-345-1	02-345-2	02-345-3	02-345-4
Anions by IC (Cl-300.0), mg/L	27	31	26	36
Anions by IC (SO4-300.0), mg/L	56	55	56	57
Nitrate as NO3 (300.0), mg/L	49	64	50	69
Nitrite (by IC), mg/L	<0.1	<0.1	<0.1	<0.1
Ammonia (350.1), mg/L	<0.1	0.11	0.21	0.10
Turbidity (180.1), NTU	3.1	39	28	56
Dissolved Solids (160.1), mg/L	420	440	390	460
Alkalinity (310.1)				
Carbonate Alk (as CaCO3), mg/L	<1	<1	<1	<1
Bicarbonate Alk (as CaCO3), mg/L	210	220	210	240
Hydroxide Alk (as CaCO3), mg/L	<1	<1	<1	<1
Total Alkalinity (as CaCO3), mg/L	210	220	210	240
Calcium (6010), mg/L	95	110	96	110
Magnesium (6010), mg/L	20	23	20	25
Potassium (6010), mg/L	5.2	3.9	3.4	3.9
Sodium (6010), mg/L	26	25	23	26
Digestion (3010), Date	02/23/94	02/23/94	02/23/94	02/23/94

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
02-345-1	GW-1				18 FEB 94
02-345-2	GW-4				18 FEB 94
02-345-3	GW-5				18 FEB 94
02-345-4	GW-6				18 FEB 94
PARAMETER	02-345-1	02-345-2	02-345-3	02-345-4	
TPH (8015M)					
Date Analyzed	03/01/94	02/26/94	02/26/94	02/26/94	
Date Extracted	02/24/94	02/24/94	02/24/94	02/24/94	
Dilution Factor, Times	1	1	1	1	
TPH (total), mg/L	<1	<1	<1	<1	
Other TPH (8015M)	---	---	---	---	

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LOG NO: G94-02-345

Received: 18 FEB 94

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
02-345-1	GW-1	18 FEB 94
02-345-2	GW-4	18 FEB 94
02-345-3	GW-5	18 FEB 94
02-345-4	GW-6	18 FEB 94

PARAMETER	02-345-1	02-345-2	02-345-3	02-345-4
E524.2/VOC				
Date Analyzed	02/26/94	02/26/94	02/26/94	02/27/94
Dilution Factor, Times	5	5	1	1
1,1,1,2-Tetrachloroethane, ug/L	<1	<1	<0.2	<0.2
1,1,1-Trichloroethane, ug/L	1.4	5.0	<0.2	<0.2
1,1,2,2-Tetrachloroethane, ug/L	<1	<1	<0.2	<0.2
1,1,2-Trichloroethane, ug/L	<1	<1	<0.2	<0.2
1,1-Dichloroethane, ug/L	<1	<1	<0.2	<0.2
1,1-Dichloroethene, ug/L	1.0	6.7	<0.2	<0.2
1,1-Dichloropropene, ug/L	<1	<1	<0.2	<0.2
1,2,3-Trichlorobenzene, ug/L	<1	<1	<0.2	<0.2
1,2,3-Trichloropropane, ug/L	<1	<1	<0.2	<0.2
1,2,4-Trichlorobenzene, ug/L	<1	<1	<0.2	<0.2
1,2,4-Trimethylbenzene, ug/L	<1	<1	<0.2	<0.2
1,2-Dibromo-3-chloropropane, ug/L	<3	<3	<0.5	<0.5
1,2-Dibromoethane, ug/L	<1	<1	<0.2	<0.2
1,2-Dichloroethane, ug/L	<1	<1	<0.2	<0.2
1,2-Dichlorobenzene, ug/L	<1	<1	<0.2	<0.2
1,2-Dichloropropane, ug/L	<1	<1	<0.2	<0.2
1,3,5-Trimethylbenzene, ug/L	<1	<1	<0.2	<0.2
1,3-Dichlorobenzene, ug/L	<1	<1	<0.2	<0.2
1,3-Dichloropropane, ug/L	<1	<1	<0.2	<0.2
1,4-Dichlorobenzene, ug/L	<1	<1	<0.2	<0.2
2,2-Dichloropropane, ug/L	<1	<1	<0.2	<0.2

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
02-345-1	GW-1	18 FEB 94			
02-345-2	GW-4	18 FEB 94			
02-345-3	GW-5	18 FEB 94			
02-345-4	GW-6	18 FEB 94			
PARAMETER	02-345-1	02-345-2	02-345-3	02-345-4	
2-Chlorotoluene, ug/L	<1	<1	<0.2	<0.2	
4-Chlorotoluene, ug/L	<1	<1	<0.2	<0.2	
Bromobenzene, ug/L	<1	<1	<0.2	<0.2	
Bromochloromethane, ug/L	<1	<1	<0.2	<0.2	
Bromodichloromethane, ug/L	<1	<1	<0.2	<0.2	
Bromomethane, ug/L	<3	<3	<0.5	<0.5	
Benzene, ug/L	<1	<1	<0.2	<0.2	
Bromoform, ug/L	<1	<1	<0.2	<0.2	
Chlorobenzene, ug/L	<1	<1	<0.2	<0.2	
Carbon Tetrachloride, ug/L	<1	1.2	<0.2	<0.2	
Chloroethane, ug/L	<1	<1	<0.2	<0.2	
Chloroform, ug/L	1.5	1.1	0.34	0.31	
Chloromethane, ug/L	<1	<1	<0.2	<0.2	
Dibromochloromethane, ug/L	<1	<1	<0.2	<0.2	
Dibromomethane, ug/L	<1	<1	<0.2	<0.2	
Ethylbenzene, ug/L	<1	<1	<0.2	<0.2	
Freon 113, ug/L	<1	<1	<0.2	<0.2	
Hexachlorobutadiene, ug/L	<1	<1	<0.2	<0.2	
Isopropylbenzene, ug/L	<1	<1	<0.2	<0.2	
Methylene chloride, ug/L	<1	<1	<0.2	<0.2	
N-Butylbenzene, ug/L	<1	<1	<0.2	<0.2	
N-Propylbenzene, ug/L	<1	<1	<0.2	<0.2	
Naphthalene, ug/L	<5	<5	<1	<1	
Styrene, ug/L	<1	<1	<0.2	<0.2	

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Page 5

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED			
02-345-1	GW-1	18 FEB 94			
02-345-2	GW-4	18 FEB 94			
02-345-3	GW-5	18 FEB 94			
02-345-4	GW-6	18 FEB 94			
PARAMETER	02-345-1	02-345-2	02-345-3	02-345-4	
Trichloroethene, ug/L	62	65	0.97	1.2	
Trichlorofluoromethane, ug/L	<1	<1	<0.2	<0.2	
Toluene, ug/L	<1	<1	<0.2	<0.2	
Tetrachloroethene, ug/L	1.7	1.2	0.66	0.94	
Vinyl chloride, ug/L	<1	<1	<0.2	<0.2	
cis-1,2-Dichloroethene, ug/L	3.0	<1	0.30	0.56	
cis-1,3-Dichloropropene, ug/L	<1	<1	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<1	<1	<0.2	<0.2	
o-Xylene, ug/L	<1	<1	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<1	<1	<0.2	<0.2	
sec-Butylbenzene, ug/L	<1	<1	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<1	<1	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<1	<1	<0.2	<0.2	
tert-Butylbenzene, ug/L	<1	<1	<0.2	<0.2	
Other E524.2/VOC	---	---	---	---	

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
02-345-5	Trip Blank	18 FEB 94
PARAMETER	02-345-5	
Sample Held, Not Analyzed	HOLD	


James C. Hein, Laboratory Director

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-089-1	GW-10 @ 17'-20' BGWS	07 MAR 94
03-089-2	GW-10 @ 37'-40' BGWS	07 MAR 94
03-089-3	GW-7 @ 17'-20' BGWS	08 MAR 94
03-089-4	GW-7 @ 37'-40' BGWS	08 MAR 94
03-089-5	GW-2 @ 17'-20' BGWS	09 MAR 94

PARAMETER	03-089-1	03-089-2	03-089-3	03-089-4	03-089-5
E524.2/VOC					
Date Analyzed	03/10/94	03/10/94	03/10/94	03/10/94	03/17/94
Dilution Factor, Times	10	10	2	5	2
1,1,1,2-Tetrachloroethane, ug/L	<2	<2	<0.4	<1	<0.4
1,1,1-Trichloroethane, ug/L	<2	<2	<0.4	<1	<0.4
1,1,2,2-Tetrachloroethane, ug/L	<2	<2	<0.4	<1	<0.4
1,1,2-Trichloroethane, ug/L	<2	<2	<0.4	<1	<0.4
1,1-Dichloroethane, ug/L	<2	<2	<0.4	<1	<0.4
1,1-Dichloroethene, ug/L	<2	<2	<0.4	<1	<0.4
1,1-Dichloropropene, ug/L	<2	<2	<0.4	<1	<0.4
1,2,3-Trichlorobenzene, ug/L	<2	3.0	<0.4	<1	<0.4
1,2,3-Trichloropropane, ug/L	<2	<2	<0.4	<1	<0.4
1,2,4-Trichlorobenzene, ug/L	<2	2.3	<0.4	<1	<0.4
1,2,4-Trimethylbenzene, ug/L	<2	<2	<0.4	<1	<0.4
1,2-Dibromo-3-chloropropane, ug/L	<5	<5	<1	<3	<1
1,2-Dibromoethane, ug/L	<2	<2	<0.4	<1	<0.4
1,2-Dichloroethane, ug/L	<2	<2	<0.4	<1	<0.4
1,2-Dichlorobenzene, ug/L	<2	<2	<0.4	<1	<0.4
1,2-Dichloropropane, ug/L	<2	<2	<0.4	<1	<0.4
1,3,5-Trimethylbenzene, ug/L	<2	<2	<0.4	<1	<0.4
1,3-Dichlorobenzene, ug/L	<2	<2	<0.4	<1	<0.4
1,3-Dichloropropane, ug/L	<2	<2	<0.4	<1	<0.4
1,4-Dichlorobenzene, ug/L	<2	<2	<0.4	<1	<0.4
2,2-Dichloropropane, ug/L	<2	<2	<0.4	<1	<0.4

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REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES					DATE SAMPLED
03-089-1	GW-10 @ 17'-20' BGWS					07 MAR 94
03-089-2	GW-10 @ 37'-40' BGWS					07 MAR 94
03-089-3	GW-7 @ 17'-20' BGWS					08 MAR 94
03-089-4	GW-7 @ 37'-40' BGWS					08 MAR 94
03-089-5	GW-2 @ 17'-20' BGWS					09 MAR 94
PARAMETER	03-089-1	03-089-2	03-089-3	03-089-4	03-089-5	
2-Chlorotoluene, ug/L	<2	<2	<0.4	<1	<0.4	
4-Chlorotoluene, ug/L	<2	<2	<0.4	<1	<0.4	
Bromobenzene, ug/L	<2	<2	<0.4	<1	<0.4	
Bromochloromethane, ug/L	<2	<2	<0.4	<1	<0.4	
Bromodichloromethane, ug/L	<2	<2	<0.4	<1	<0.4	
Bromomethane, ug/L	<5	<5	<1	<3	<1	
Benzene, ug/L	<2	<2	<0.4	<1	<0.4	
Bromoform, ug/L	<2	<2	<0.4	<1	<0.4	
Chlorobenzene, ug/L	<2	<2	<0.4	<1	<0.4	
Carbon Tetrachloride, ug/L	<2	<2	<0.4	<1	<0.4	
Chloroethane, ug/L	<2	<2	<0.4	<1	<0.4	
Chloroform, ug/L	3.8	4.5	1.0	2.7	0.42	
Chloromethane, ug/L	<2	<2	<0.4	<1	<0.4	
Dibromochloromethane, ug/L	<2	<2	<0.4	<1	<0.4	
Dibromomethane, ug/L	<2	<2	<0.4	<1	<0.4	
Ethylbenzene, ug/L	<2	<2	<0.4	<1	<0.4	
Freon 113, ug/L	<2	<2	<0.4	<1	<0.4	
Hexachlorobutadiene, ug/L	<2	<2	<0.4	<1	<0.4	
Isopropylbenzene, ug/L	<2	<2	<0.4	<1	<0.4	
Methylene chloride, ug/L	<2	<2	<0.4	<1	<0.4	
N-Butylbenzene, ug/L	<2	<2	<0.4	<1	<0.4	
N-Propylbenzene, ug/L	<2	<2	<0.4	<1	<0.4	
Naphthalene, ug/L	<10	<10	<2	<5	<2	

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES					DATE SAMPLED
03-089-1	GW-10 @ 17'-20' BGWS					07 MAR 94
03-089-2	GW-10 @ 37'-40' BGWS					07 MAR 94
03-089-3	GW-7 @ 17'-20' BGWS					08 MAR 94
03-089-4	GW-7 @ 37'-40' BGWS					08 MAR 94
03-089-5	GW-2 @ 17'-20' BGWS					09 MAR 94
PARAMETER	03-089-1	03-089-2	03-089-3	03-089-4	03-089-5	
Styrene, ug/L	<2	<2	<0.4	<1	<0.4	
Trichloroethene, ug/L	200	210	34	86	29	
Trichlorofluoromethane, ug/L	<2	<2	<0.4	<1	<0.4	
Toluene, ug/L	<2	<2	<0.4	<1	<0.4	
Tetrachloroethene, ug/L	2.0	2.4	0.70	1.7	0.60	
Vinyl chloride, ug/L	<2	<2	<0.4	<1	<0.4	
cis-1,2-Dichloroethene, ug/L	4.5	4.7	0.96	2.4	0.54	
cis-1,3-Dichloropropene, ug/L	<2	<2	<0.4	<1	<0.4	
m- and p-Xylene Isomers, ug/L	<2	<2	<0.4	<1	<0.4	
o-Xylene, ug/L	<2	<2	<0.4	<1	<0.4	
p-Isopropyl toluene, ug/L	<2	<2	<0.4	<1	<0.4	
sec-Butylbenzene, ug/L	<2	<2	<0.4	<1	<0.4	
trans-1,2-Dichloroethene, ug/L	<2	<2	<0.4	<1	<0.4	
trans-1,3-Dichloropropene, ug/L	<2	<2	<0.4	<1	<0.4	
tert-Butylbenzene, ug/L	<2	<2	<0.4	<1	<0.4	
Other E524.2/VOC	---	---	---	---	---	

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REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-089-6	GW-2 @ 37'-40' BGWS	09 MAR 94
PARAMETER	03-089-6	
E524.2/VOC		
Date Analyzed	03/11/94	
Dilution Factor, Times	5	
1,1,1,2-Tetrachloroethane, ug/L	<1	
1,1,1-Trichloroethane, ug/L	<1	
1,1,2,2-Tetrachloroethane, ug/L	<1	
1,1,2-Trichloroethane, ug/L	<1	
1,1-Dichloroethane, ug/L	<1	
1,1-Dichloroethene, ug/L	<1	
1,1-Dichloropropene, ug/L	<1	
1,2,3-Trichlorobenzene, ug/L	<1	
1,2,3-Trichloropropane, ug/L	<1	
1,2,4-Trichlorobenzene, ug/L	<1	
1,2,4-Trimethylbenzene, ug/L	<1	
1,2-Dibromo-3-chloropropane, ug/L	<3	
1,2-Dibromoethane, ug/L	<1	
1,2-Dichloroethane, ug/L	<1	
1,2-Dichlorobenzene, ug/L	<1	
1,2-Dichloropropane, ug/L	<1	
1,3,5-Trimethylbenzene, ug/L	<1	
1,3-Dichlorobenzene, ug/L	<1	
1,3-Dichloropropane, ug/L	<1	
1,4-Dichlorobenzene, ug/L	<1	
2,2-Dichloropropane, ug/L	<1	
2-Chlorotoluene, ug/L	<1	
4-Chlorotoluene, ug/L	<1	
Bromobenzene, ug/L	<1	

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-089-6	GW-2 @ 37'-40' BGWS	09 MAR 94
PARAMETER	03-089-6	
Bromochloromethane, ug/L	<1	
Bromodichloromethane, ug/L	<1	
Bromomethane, ug/L	<3	
Benzene, ug/L	<1	
Bromoform, ug/L	<1	
Chlorobenzene, ug/L	<1	
Carbon Tetrachloride, ug/L	<1	
Chloroethane, ug/L	<1	
Chloroform, ug/L	<1	
Chloromethane, ug/L	<1	
Dibromochloromethane, ug/L	<1	
Dibromomethane, ug/L	<1	
Ethylbenzene, ug/L	<1	
Freon 113, ug/L	<1	
Hexachlorobutadiene, ug/L	<1	
Isopropylbenzene, ug/L	<1	
Methylene chloride, ug/L	<1	
N-Butylbenzene, ug/L	<1	
N-Propylbenzene, ug/L	<1	
Naphthalene, ug/L	<5	
Styrene, ug/L	<1	
Trichloroethene, ug/L	50	
Trichlorofluoromethane, ug/L	<1	
Toluene, ug/L	<1	
Tetrachloroethene, ug/L	1.1	
Vinyl chloride, ug/L	<1	
cis-1,2-Dichloroethene, ug/L	<1	

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LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-089-6	GW-2 @ 37'-40' BGWS	09 MAR 94
PARAMETER	03-089-6	
cis-1,3-Dichloropropene, ug/L	<1	
m- and p-Xylene Isomers, ug/L	<1	
o-Xylene, ug/L	<1	
p-Isopropyl toluene, ug/L	<1	
sec-Butylbenzene, ug/L	<1	
trans-1,2-Dichloroethene, ug/L	<1	
trans-1,3-Dichloropropene, ug/L	<1	
tert-Butylbenzene, ug/L	<1	
Other E524.2/VOC	---	

James C. Hein
James C. Hein, Laboratory Director

801 Western Avenue
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LOG NO: G94-03-090

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REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
03-090-1	GW-10	07 MAR 94		
03-090-2	GW-7	08 MAR 94		
03-090-3	GW-2	09 MAR 94		
PARAMETER	03-090-1	03-090-2	03-090-3	
E524.2/VOC				
Date Analyzed	03/11/94	03/11/94	03/11/94	
Dilution Factor, Times	10	2	5	
1,1,1,2-Tetrachloroethane, ug/L	<2	<0.4	<1	
1,1,1-Trichloroethane, ug/L	<2	<0.4	<1	
1,1,2,2-Tetrachloroethane, ug/L	<2	0.46	<1	
1,1,2-Trichloroethane, ug/L	<2	<0.4	<1	
1,1-Dichloroethane, ug/L	<2	<0.4	<1	
1,1-Dichloroethene, ug/L	<2	<0.4	<1	
1,1-Dichloropropene, ug/L	<2	<0.4	<1	
1,2,3-Trichlorobenzene, ug/L	<2	<0.4	<1	
1,2,3-Trichloropropane, ug/L	<2	<0.4	<1	
1,2,4-Trichlorobenzene, ug/L	<2	0.50	<1	
1,2,4-Trimethylbenzene, ug/L	<2	<0.4	<1	
1,2-Dibromo-3-chloropropane, ug/L	<5	<1	<3	
1,2-Dibromoethane, ug/L	<2	<0.4	<1	
1,2-Dichloroethane, ug/L	<2	<0.4	<1	
1,2-Dichlorobenzene, ug/L	<2	<0.4	<1	
1,2-Dichloropropane, ug/L	<2	<0.4	<1	
1,3,5-Trimethylbenzene, ug/L	<2	<0.4	<1	
1,3-Dichlorobenzene, ug/L	<2	<0.4	<1	
1,3-Dichloropropane, ug/L	<2	<0.4	<1	
1,4-Dichlorobenzene, ug/L	<2	<0.4	<1	
2,2-Dichloropropane, ug/L	<2	<0.4	<1	
2-Chlorotoluene, ug/L	<2	<0.4	<1	
4-Chlorotoluene, ug/L	<2	<0.4	<1	

BC Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-03-090

Received: 09 MAR 94

Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
03-090-1	GW-10	07 MAR 94		
03-090-2	GW-7	08 MAR 94		
03-090-3	GW-2	09 MAR 94		
PARAMETER	03-090-1	03-090-2	03-090-3	
Bromobenzene, ug/L	<2	<0.4	<1	
Bromochloromethane, ug/L	<2	<0.4	<1	
Bromodichloromethane, ug/L	<2	<0.4	<1	
Bromomethane, ug/L	<5	<1	<3	
Benzene, ug/L	<2	<0.4	<1	
Bromoform, ug/L	<2	<0.4	<1	
Chlorobenzene, ug/L	<2	<0.4	<1	
Carbon Tetrachloride, ug/L	<2	<0.4	<1	
Chloroethane, ug/L	<2	<0.4	<1	
Chloroform, ug/L	4.0	0.96	<1	
Chloromethane, ug/L	<2	<0.4	<1	
Dibromochloromethane, ug/L	<2	<0.4	<1	
Dibromomethane, ug/L	<2	<0.4	<1	
Ethylbenzene, ug/L	<2	<0.4	<1	
Freon 113, ug/L	<2	<2	<1	
Hexachlorobutadiene, ug/L	<2	<0.4	<1	
Isopropylbenzene, ug/L	<2	<0.4	<1	
Methylene chloride, ug/L	<2	<0.4	<1	
N-Butylbenzene, ug/L	<2	<0.4	<1	
N-Propylbenzene, ug/L	<2	<0.4	<1	
Naphthalene, ug/L	<10	<2	<5	
Styrene, ug/L	<2	<0.4	<1	
Trichloroethene, ug/L	210	35	60	
Trichlorofluoromethane, ug/L	<2	<0.4	<1	
Toluene, ug/L	<2	<0.4	<1	

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G94-03-090

Received: 09 MAR 94

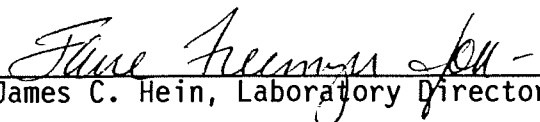
Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Purchase Order: 92266

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED		
03-090-1	GW-10	07 MAR 94		
03-090-2	GW-7	08 MAR 94		
03-090-3	GW-2	09 MAR 94		
PARAMETER	03-090-1	03-090-2	03-090-3	
Tetrachloroethene, ug/L	<2	0.72	1.4	
Vinyl chloride, ug/L	<2	<0.4	<1	
cis-1,2-Dichloroethene, ug/L	4.4	1.0	<1	
cis-1,3-Dichloropropene, ug/L	<2	<0.4	<1	
m- and p-Xylene Isomers, ug/L	<2	<0.4	<1	
o-Xylene, ug/L	<2	<0.4	<1	
p-Isopropyl toluene, ug/L	<2	<0.4	<1	
sec-Butylbenzene, ug/L	<2	<0.4	<1	
trans-1,2-Dichloroethene, ug/L	<2	<0.4	<1	
trans-1,3-Dichloropropene, ug/L	<2	<0.4	<1	
tert-Butylbenzene, ug/L	<2	<0.4	<1	
Other E524.2/VOC	---	---	---	


James C. Hein, Laboratory Director

APPENDIX C
CHAIN OF CUSTODY DOCUMENTS

USA LOG NUMBER

C ANALYTICAL

1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

801 Western Avenue, Glendale, CA 91201 (818) 247-5737

1200 Pacifico Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soll OT—Other PE—Petroleum

C ANALYTICAL

1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

801 Western Avenue, Glendale, CA 91201 (818) 247-5737

1200 Pacifico Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soll OT—Other PE—Petroleum

CHAIN OF CUSTODY RECORD

BCA Log Number 087-45312

Client name **SEACOR**
 Address **3485 SACRAMENTO ST. SUITE A**
 City, State, Zip **SAN LUIS OBISPO CA 93401**
 Project or PO# **A0057-001-01**
 Phone # **(805) 546-0455**
 Report attention **GREG VOGELPOHC**

Lab sample number	Date sampled	Time sampled	Type* See key below	Sampled by		Number of containers	Remarks
				Sample description			
2-16-94	10:15 A.M.		GW	GW-2		10	NORMAL
2-16-94	11:00 P.M.		GW	GW-7		10	T.A.T.
2-16-94	4:00 P.M.		GW	GW-8		10	PLEASE FAX RESULTS
2-16-94	6:45 P.M.		GW	GW-10		10	
2-16-94	9:00 P.M.		GW	GW-9		10	
2-17-94	6:30 P.M.		GW	GW-3		10	
2-17-94	7:00 P.M.		-	EQUIPMENT BLANK		10	
2-17-94	-		-	TRIP BLANK		2	

Signature	Print Name	Company	Date	Time
Inquired by <i>Bruce B. Cutting</i>	BRUCE B. CUTTING	SEACOR	2-17-94	7:50 P.M.
Reviewed by <i>Lorna Johnson</i>	LORNA JOHNSON	B.C. Analytical	2-17-94	7:50 P.M.
Inquired by				
Served by				
Inquired by				
Served by Laboratory				

ANALYTICAL
 255 Powell Street, Emeryville, CA 94608 (415) 428-2300
 01 Western Avenue, Glendale, CA 91201 (818) 247-5737
 Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
 Hazardous samples will be returned to client or disposed of at client's expense.
 Disposal arrangements: _____
 *KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
 GW—Groundwater SO—Soil OT—Other PE—Petroleum

3

94-02-312

Client name				Project or PO#					
Address				Phone #					
City, State, Zip				Report attention					
3485 SACRAMENTO ST. SUITE A				A0057-001-01					
SAN LUIS OBISPO CA 93401				(805)546-0455					
Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by	Sample description	Number of containers	Analyses required		
2-16-94	10:15 A.M.		GW		GW-2	10	NH3-N ANIONS METALS/RADIO-ACTIVITY ALK-TDS, TURB EPA 524.2 TPH BY 8015		
2-16-94	11:00 P.M.		GW		GW-7	10	Hazardous sample Special handling required		
2-16-94	4:00 P.M.		GW		GW-8	10	Remarks		
2-16-94	6:45 P.M.		GW		GW-10	10	NORMAL		
2-16-94	9:00 P.M.		GW		GW-9	10	T.A.T.		
2-17-94	6:30 P.M.		GW		GW-3	10	Please FAX RESULTS		
2-17-94	7:00 P.M.		-		EQUIPMENT BLANK	10			
2-17-94	-		-		TRIP BLANK	2			
Signature				Print Name		Company		Date	Time
Relinquished by <i>James D. Cutting</i>				BRUCE B. CUTTING		SEACOR		2-17-94	7:50 P.M.
Received by <i>John Johnson</i>				JOHN JOHNSON		B.C. Analytical		2-17-94	7:50 P.M.
Relinquished by									
Received by									
Relinquished by									
Received by Laboratory									

3

Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements:

[illegible]

1200 E. "Avenue" [redacted] 805 [redacted] 78-011
helm, [redacted]

BCA Log Number 294-03-089

B CANALYTICAL
☐ 1255 Fowell Street, Emeryville, CA 94608 (510) 428-2300
☐ 801 Westlawn Avenue, Emeryville, CA 91201 (818) 247-5737
 2001 July W. 2005 78-01-11
 Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
 Hazardous samples will be returned to client or disposed of at client's expense.
 Disposal arrangements: _____
 KEY: AO—Aqueous NA—Nonaqueous SL—Sludge
 GW—Groundwater SO—Soil OT—Other PE—Petroleum

CHAIN OF CUSTODY RECORD

BCA Log Number

694-03-090

Client name				Project or PO#							
SEACOR				A0057-001-01							
Address				Phone #							
3485 SACRAMENTO ST. SUITE A				(805) 546-0455							
City, State, Zip				Report attention							
SAN LEUIS OBISPO, CA 93401				GREG VOGEL 10HL							
Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by	Sample description	Number of containers	Analyses required		Hazardous sample Special handling required		Remarks
	3/7/94	13:15 PM	GW		GW-10	4	EPA 824.2				
	3/8/94	9:45 AM	GW		GW-7	4					NORMAL TAT.
	3/9/94	8:45 AM	GW		GW-2	4					PLEASE FAX RESULTS.
Relinquished by Bruce B. Cutting											
Received by Juan Carlos St. S. A. R. S. W. I. T. H.											
Relinquished by											
Received by											
Relinquished by											
Received by Laboratory											

B C ANALYTICAL

1255 Powell Street, Emeryville, CA 94608 (510) 428-2300

801 Western Avenue, Emeryville, CA 91201 (818) 247-5737

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements:

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
GW—Groundwater SO—Soil OT—Other PE—Petroleum

SEACOR

NECESSARY ENGINEERING
ANALYSIS REPORT

**RESULTS OF GROUNDWATER MONITORING
FOURTH QUARTER 1993
ALLIEDSIGNAL AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

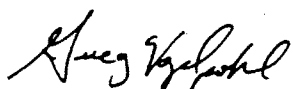
VOLUME I

Prepared for:
AlliedSignal AEROSPACE
2525 West 190th Street
Torrance, California 90509

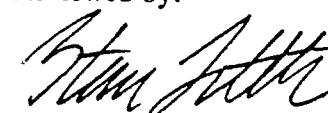
Prepared by:
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

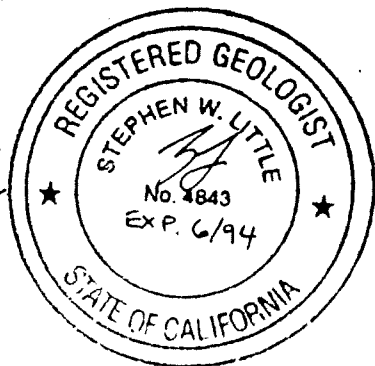
January 27, 1994
Job Number: A0057-001-02 #ASN04

Prepared by:


Greg Vogelpohl, P.E.
Associate Engineer

Reviewed by:


Steve Little, R.G.
Principal Geologist



004462

SEACOR

ANALYSIS & CONSULTING
AEROSPACE & DEFENSE

**RESULTS OF GROUNDWATER MONITORING
FOURTH QUARTER 1993
ALLIEDSIGNAL AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

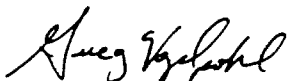
VOLUME I

Prepared for:
AlliedSignal AEROSPACE
2525 West 190th Street
Torrance, California 90509

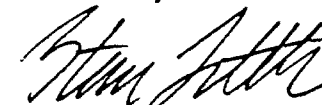
Prepared by:
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

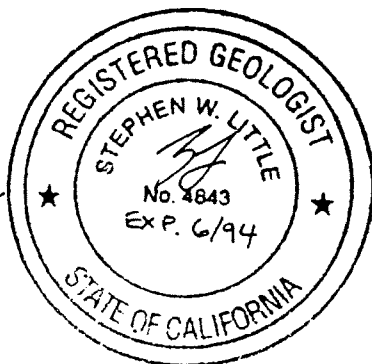
January 27, 1994
Job Number: A0057-001-02 #ASN04

Prepared by:


Greg Vogelpohl, P.E.
Associate Engineer

Reviewed by:


Steve Little, R.G.
Principal Geologist



004463

**RESULTS OF GROUNDWATER MONITORING
FOURTH QUARTER 1993
ALLIEDSIGNAL AEROSPACE
11600 SHERMAN WAY
NORTH HOLLYWOOD, CALIFORNIA**

January 27, 1994
Job Number: A0057-001-02 #ASN04

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1.0 EXECUTIVE SUMMARY

Groundwater monitoring for the fourth quarter of 1993 was conducted at the AlliedSignal AEROSPACE facility in North Hollywood, California on November 29-30 and December 7, 1993 in accordance with the California Water Quality Control Board - Los Angeles Region (RWQCB) Well Investigation Program (WIP) guidelines. Six on-site groundwater monitoring wells (GW-1 through GW-6) and four off-site groundwater monitoring wells (GW-7 through GW-10) were sampled during this monitoring event.

Groundwater levels in the six on-site wells have risen between 7.48 (well GW-6) and 8.87 (well GW-1) feet during the period between September 13 and December 7, 1993. In addition, groundwater levels in the four off-site wells located at the Kaiser facility have risen between 7.86 (well GW-9) and 8.60 (well GW-7) feet between September 8-9 and November 29, 1993. Based on the water level measurements obtained on September 13, October 14, November 29 and December 7, 1993, the groundwater flow direction was northerly beneath the eastern portion of the site and easterly beneath the central and western portions of the site. The water level measurements obtained on November 29, 1993 indicate that the groundwater flow direction beneath the Kaiser facility was easterly.

Nitrate was detected in the groundwater samples collected from monitoring wells GW-2 through GW-8 at concentrations above the applicable State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL). The compound trichloroethene (TCE) was detected in the groundwater samples collected from wells GW-2, GW-3, GW-7 and GW-10 at concentrations above the DHS MCL. All other VOCs detected in the groundwater samples collected from the six on-site and four off-site monitoring wells were present at concentrations below their respective MCLs. The tetrachloroethene (PCE) and TCE concentrations detected in wells GW-1 through GW-4, GW-7 and GW-10 have decreased since the last sampling event for these wells. The PCE and TCE concentrations detected in wells GW-5, GW-6, GW-8 and GW-9 have increased since the last monitoring episode for these wells.

2.0 INTRODUCTION

On behalf of AlliedSignal AEROSPACE, Science & Engineering Analysis Corporation (*SEACOR*) has prepared this report presenting the results of groundwater monitoring conducted by *SEACOR* in November and December, 1993 at the AlliedSignal AEROSPACE facility located at 11600 Sherman Way in North Hollywood, California (see Figure 1). Groundwater monitoring and sampling of wells GW-1 through GW-6 at the subject site and wells GW-7 through GW-10 at the adjacent Kaiser facility (see Figure 2) was conducted in accordance with the RWQCB WIP guidelines.

Quarterly groundwater monitoring at the site has been conducted regularly since the third quarter of 1991. Historical groundwater elevations and analytical results from the most recent and previous groundwater monitoring events are presented in Tables 4 through 24 and Figures 6 through 44.

3.0 WATER LEVEL MEASUREMENTS

During the fourth quarter of 1993, depth to groundwater was measured in the six on-site monitoring wells on September 13, October 14 and December 7, 1993 with an Environmental Instruments Company (EI) water level meter according to the protocol described in Appendix A. Depth to groundwater was measured in the six on-site wells and the four off-site wells on November 29, 1993 according to the same protocol. Water level data obtained on September 13, October 14, November 29 and December 7, 1993 are summarized in Table 1.

The data indicate that groundwater levels beneath the site have risen between 7.48 (well GW-6) and 8.27 (well GW-1) feet during the period between September 13 and December 7, 1993. In addition, groundwater levels in the off-site wells have risen between 7.86 (well GW-9) and 8.60 (well GW-7) feet between September 8-9 (as reported by Groundwater Technology, Inc.) and November 29, 1993. Historic groundwater elevations are presented in Table 4.

The groundwater level measurements obtained on September 13, 1993 indicate that the average groundwater flow direction was northerly at a gradient of 0.0028 beneath the eastern portion of the site and easterly at a gradient of 0.0026 beneath the central and western portions of the site. Based on water level measurements obtained October 14, 1993, the average groundwater flow direction was northerly at a gradient of 0.0024 beneath the eastern portion of the site and easterly at a gradient of 0.005 beneath the central and western portions of the site. The water level measurements obtained on November 29, 1993 indicate the average groundwater flow direction was northerly at a gradient of 0.0036 beneath the eastern portion of the site and easterly at a gradient of 0.0027 beneath the Kaiser facility and the central and western portions of the site. Based on water level measurements obtained on December 7, 1993, the average flow direction was northerly at a gradient of 0.0033 beneath the eastern portion of the site and easterly beneath the central and western portions of the subject site. Figures 3 and 4 present groundwater elevation contour maps based on the November 29 and December 7, 1993 groundwater surface elevations, respectively.

The groundwater flow direction beneath, and in the vicinity of the site, appears to be influenced by groundwater extraction from the North Hollywood and Rinaldi-Toluca well fields located south and northwest of the subject site, respectively (Remedial Investigation Report for Groundwater Contamination in the San Fernando Valley - Volume 1, James M. Montgomery, December 1992). Although groundwater elevation contour maps have been prepared based on groundwater elevations measured at the site, these contours may be misleading due to the influence of regional pumping.

4.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater monitoring wells GW-2 through GW-10 were purged and sampled on November 29-30, 1993 according to the protocol described in Appendix A. The dedicated bladder pump within well GW-1 was not working properly on November 29-30, 1993 and was pulled, repaired, decontaminated and the well was sampled on December 7, 1993 according to the same protocol. Prior to purging, the bladder pump intakes in wells GW-1 through GW-6, GW-7 and GW-10 were placed approximately 8-9 feet below the top of the screened intervals in these wells. This enabled the upper 8 to 9 feet of water below the top of the screened intervals in the wells to be isolated during sampling. Based on the well construction details, the static water level within these wells was between 0.08 (GW-10) and 18.52 (GW-5) feet above the screened interval.

At the request of AlliedSignal, the groundwater samples collected from wells GW-7 through GW-10 were analyzed on a 48-hour turn-around time. Therefore, inorganic analyses of groundwater samples collected from these wells were analyzed by Del Mar Analytical (DMA) in Irvine, California and volatile organic analyses were conducted by ZymaX Envirotechnology (ZymaX) in San Luis Obispo, California. ZymaX is a State of California certified laboratory (Certification No. 1717) for volatile organic analysis. The remainder of the analyses were conducted by BC Analytical (BCA) in Glendale, California.

For Quality Assurance/Quality Control (QA/QC) purposes, a field blank and a trip blank sample were collected on November 29-30, 1993. The water samples were delivered to BCA in Glendale, DMA in Irvine or ZymaX in San Luis Obispo and analyzed for the following:

- Method 524.2 - Volatile organics;
- Method 8015M - Total petroleum hydrocarbons;
- Method 300.0-L - Sulfates, chlorides;
- Method 310.1-L - Alkalinity - total, hydroxyl, carbonate, bicarbonate;
- Method 6010-L - Calcium, magnesium, potassium, sodium;
- Method 160.1 and 180.1 - Total dissolved solids and turbidity;
- Method 300.0-N - Nitrate and nitrite;
- Method 350.1-L - Ammonia nitrogen

All samples were immediately placed on ice following collection. Individual samples were collected in pre-cleaned, analysis-specific containers supplied by the laboratory with the appropriate preservative and clearly marked and dated for identification. Samples were securely packed and delivered to the laboratory within 24 hours via courier. All samples were preserved and stored for analysis no longer than the maximum allowable holding time. The following table presents the appropriate sample containers, holding time, container size and preservative for each analytical method used in this project.

TABLE 4.1 - SAMPLING GUIDE			
ANALYSIS	HOLDING TIME	CONTAINER SIZE	PRESERVATIVE
Volatile Organics-EPA Test Method 524.2	14 days	2 40 ml (glass) with septum	Cool, No HS, HCL
Total Petroleum Hydrocarbons-EPA Test Method 8015M	14 days	4 oz (amber glass) with septum	Cool, No HS, HCL
Sulfates & Chlorides-EPA Test Method 300.0	28 days	4 oz (plastic)	Cool
Alkalinity (total, hydroxyl, carbonate, bicarbonate)-EPA Test Method 310.1	14 Days	4 oz (plastic)	Cool
Calcium, Magnesium, Potassium, Sodium-EPA Test Method 6010	6 months	16 oz (plastic)	Cool, HNO ₃
Total Dissolved Solids-EPA Test Method 160.1	7 days	16 oz (plastic)	Cool
Turbidity-EPA Test Method 180.1	2 days	4 oz (plastic)	Cool
Nitrate & Nitrite-EPA Test Method 300.0	48 hours	4 oz (plastic)	Cool
Ammonia Nitrogen-EPA Test Method 350.1	28 days	4 oz (plastic)	Cool, H ₂ SO ₄

Note: HS - Headspace
HCL - Hydrochloric Acid
H₂SO₄ - Sulfuric Acid
HNO₃ - Nitric Acid

Laboratory reports and chain of custody documents for this groundwater monitoring event are presented in Volume 2, Appendices A and B, respectively.

5.0 DATA QUALITY ASSURANCE/QUALITY CONTROL

BCA located in Glendale, DMA located in Irvine and ZymaX located in San Luis Obispo, California, performed all the laboratory analysis for the fourth quarter of 1993. BCA, DMA and ZymaX followed the details of the data reporting process outlined in the Laboratory Requirements for Data Validation (EPA Document Control Number 9QA-07-90) and the RWQCB Quality Assurance/Quality Control Guidance Document for Well Investigation Program - San Gabriel and San Fernando Basins.

A field/equipment blank and a trip blank were collected during sampling on November 29-30, 1993. The field/equipment blanks were used to demonstrate that the sample bottle and the sampling procedures were not contaminating the sample. Deionized water was transported to one of the wells and a sample of the deionized water was collected using, to the extent feasible, the same sampling protocol and equipment used to obtain the groundwater samples. A trip blank, supplied by BCA, was used to provide a measure of the positive interferences introduced by the sample preservation, transportation, storage, and analysis. A case summary describing the data quality assurance/quality control (QA/QC) for this project is presented in Volume II, Appendix B.

6.0 GROUNDWATER ANALYTICAL RESULTS

6.1 INORGANIC COMPOUNDS

Chloride, sulfate, alkalinity, calcium, magnesium, potassium, sodium, TDS, turbidity and nitrate were detected in the ten monitoring wells (GW-1 through GW-10) sampled during the most recent monitoring event. The following table presents the low and high concentration of each inorganic constituent detected and the corresponding well in which these values were measured:

TABLE 6.1 - INORGANIC COMPOUNDS DETECTED (all results in milligrams per liter, except turbidity)		
Constituent	Low	High
Chloride	20 (GW-10)	35 (GW-8)
Sulfate	50 (GW-3)	59 (GW-9)
Total Alkalinity	190 (GW-7 and GW-9)	280 (GW-2)
Calcium	64 (GW-9)	97 (GW-6)
Magnesium	17 (GW-4, GW-9 and GW-10)	23 (GW-8)
Potassium	3.2 (GW-5)	4.4 (GW-8)
Sodium	23 (GW-4 through GW-6)	27 (GW-1)
TDS	360 (GW-10)	860 (GW-7)
Turbidity	<1.0 (GW-7 through GW-10)	34 (GW-6)
Nitrate	25 (GW-10)	63 (GW-6)

Turbidity measured in Nephelometric Turbidity Units.

Nitrite was not detected in samples from any of the ten wells above the detection limits of 0.1 to 1.0 milligrams per liter (mg/l). Ammonia nitrogen was detected at a concentration of 0.38 mg/l in the groundwater samples collected from well GW-1. Ammonia nitrogen was not detected in the groundwater samples collected from the other nine wells above detection limits of 0.1 to 1.0 mg/l.

Sodium was detected in all ten wells at a concentration above its EPA Suggested No-Adverse-Response Level (SNARL) of 2 mg/l. SNARLs are human health-related criteria that are published by the National Academy of Sciences and do not include a consideration of cancer risk. The

turbidity levels detected in the samples collected from wells GW-5 and GW-6 were above the DHS Secondary MCL of 5 Nephelometric Turbidity Units (NTU). MCLs include a consideration of health risk, whereas, secondary MCLs are derived from human welfare considerations (usually taste and odor) and do not include a consideration of health risk. The concentrations of nitrate detected in the samples collected from wells GW-2 through GW-8 were equal to or above the DHS MCL of 45 mg/l.

TDS and turbidity were detected in the equipment blank sample at concentrations of 54 mg/l and 0.60 NTUs, respectively. All other inorganic compounds were not detected in the equipment blank sample above their respective detection limits.

Inorganic compound analytical results for the fourth quarter 1993 monitoring event are presented in Table 2. Historic inorganic compound analytical results are presented in Tables 5 through 14. Nitrate concentrations detected during the fourth quarter 1993 monitoring event are shown on Figure 5.

6.2 VOLATILE ORGANIC COMPOUNDS

PCE was detected at concentrations ranging from 0.3 to 2.6 $\mu\text{g/l}$ in the groundwater samples collected from wells GW-1 through GW-6 and GW-8 through GW-10. The average PCE concentration detected was approximately 1.2 $\mu\text{g/l}$ with the highest concentration detected in well GW-1 (2.6 $\mu\text{g/l}$) and the lowest concentration detected in well GW-4 (0.3 $\mu\text{g/l}$). The highest concentrations of PCE were detected in wells GW-1, GW-2, GW-3 and GW-10 located along the boundary of the site and the Kaiser property. PCE was not detected in the groundwater sample collected from GW-7 above a detection limit of 0.5 $\mu\text{g/l}$. All the concentrations of PCE detected were below the DHS MCL of 5 $\mu\text{g/l}$.

1,1,1-trichloroethane (1,1,1-TCA) was detected at concentrations of 0.3, 0.37 and 0.6 $\mu\text{g/l}$ in the groundwater samples obtained from wells GW-1, GW-2 and GW-3, respectively. These wells are located along the western boundary of the site. 1,1,1-TCA was not detected above detection limits of 0.2 to 0.5 $\mu\text{g/l}$ in the other seven groundwater samples. The concentrations of 1,1,1-TCA detected were below the DHS MCL of 200 $\mu\text{g/l}$.

TCE was detected at concentrations ranging from 0.6 to 29 $\mu\text{g/l}$ in the groundwater samples collected from the ten monitoring wells. The average TCE concentration detected was approximately 7.8 $\mu\text{g/l}$ with the highest concentration detected in well GW-2 (29 $\mu\text{g/l}$) and the lowest concentration detected in well GW-4 (0.6 $\mu\text{g/l}$). The highest concentrations of TCE were detected in wells GW-2, GW-3, GW-7 and GW-10 located along the boundary of the site and the Kaiser property. The concentrations of TCE detected in wells GW-2, GW-3, GW-7 and GW-10 were above the DHS MCL of 5 $\mu\text{g/l}$.

TPH was not present above detection limits of 50 to 1,000 micrograms per liter ($\mu\text{g}/\ell$) in any of the ten groundwater samples.

1,1-dichloroethane (1,1-DCA) was detected at a concentration of $0.3 \mu\text{g}/\ell$ in the groundwater sample collected from GW-1. 1,1-DCA was not detected above detection limits of 0.2 to $0.5 \mu\text{g}/\ell$ in the other nine groundwater samples. The concentration of 1,1-DCA detected was below the DHS MCL of $5 \mu\text{g}/\ell$.

The compound 1,1-dichloroethene (1,1-DCE) was detected at a concentration of $0.4 \mu\text{g}/\ell$ in the groundwater sample collected from GW-3. 1,1-DCE was not detected above detection limits of 0.2 to $0.5 \mu\text{g}/\ell$ in the other nine groundwater samples. The concentration of 1,1-DCE detected was below the DHS MCL of $6 \mu\text{g}/\ell$.

1,2,3-trichlorobenzene (1,2,3-TCB) was detected at concentrations of 0.25 and $0.3 \mu\text{g}/\ell$ in the groundwater samples collected from wells GW-5 and GW-6, respectively. 1,2,3-TCB was not detected above detection limits of 0.2 to $0.5 \mu\text{g}/\ell$ in the other eight groundwater samples.

1,2,4-trichlorobenzene (1,2,4-TCB) was detected at a concentration of $0.3 \mu\text{g}/\ell$ in the groundwater sample collected from well GW-6. 1,2,4-TCB was not detected above detection limits of 0.2 to $0.5 \mu\text{g}/\ell$ in the other nine groundwater samples.

Chloroform was detected at concentrations ranging from 0.3 to $0.4 \mu\text{g}/\ell$ in the groundwater samples obtained from wells GW-1 through GW-6. Chloroform was not detected in the other four groundwater samples above a detection limit of $0.5 \mu\text{g}/\ell$. The concentrations of chloroform detected were below the DHS MCL of $100 \mu\text{g}/\ell$ for total trihalomethanes (THMs).

Naphthalene was detected at concentrations of 0.45 and $0.4 \mu\text{g}/\ell$ in the groundwater samples collected from wells GW-5 and GW-6. Naphthalene was not detected above detection limits of 0.2 to $0.5 \mu\text{g}/\ell$ in the other eight groundwater samples. The concentrations of naphthalene detected were below the EPA SNARL of $20 \mu\text{g}/\ell$.

Toluene was detected at a concentration of 0.3 and $0.2 \mu\text{g}/\ell$ in the groundwater samples collected from GW-1 and GW-3, respectively. Toluene was not detected above detection limits of 0.2 to $0.5 \mu\text{g}/\ell$ in the other eight groundwater samples. The concentration of toluene detected was below the DHS Action Level of $100 \mu\text{g}/\ell$.

The compound cis-1,2-dichloroethene (cis-1,2-DCE) was detected at concentrations ranging from 0.4 to $2.1 \mu\text{g}/\ell$ in the groundwater samples collected from wells GW-1, GW-2, GW-5, GW-6 and GW-8. cis-1,2-DCE was not detected in the other five groundwater samples above detection limits of 0.2 to $0.5 \mu\text{g}/\ell$. The concentrations of cis-1,2-DCE detected were below the DHS MCL of $6 \mu\text{g}/\ell$.

Xylenes were detected at a concentration of $0.3 \mu\text{g}/\ell$ in the groundwater sample obtained from well

GW-1. Xylenes were not detected above detection limits of 0.2 to 0.5 $\mu\text{g}/\ell$ in the other nine groundwater samples. The concentration of xylenes detected was below the DHS MCL of 1,750 $\mu\text{g}/\ell$.

All other volatile organic compounds (VOCs) were not detected in the ten groundwater samples above a detection limit of 0.2 to 1.0 $\mu\text{g}/\ell$.

No VOCs were detected in the equipment blank and trip blank samples above their respective detection limits.

VOC analytical results for the fourth quarter 1993 monitoring event are presented in Table 3 and Figure 5. Historical VOC analytical results are presented in Tables 15 through 24. Historical groundwater surface elevations, nitrate and volatile organic compound concentrations for wells GW-1 through GW-6 are presented in Figures 6 through 44.

7.0 DISCUSSION

Based on groundwater level measurements obtained between September 13 and December 7, 1993, groundwater elevations have increased between 7.48 (well GW-6) and 8.27 (well GW-1) feet beneath the site. In addition, groundwater levels in the off-site wells have risen between 7.86 (well GW-9) and 8.60 (well GW-7) feet during the period between September 8-9 and November 29, 1993. Figure 45 presents the change in groundwater elevations beneath the site and the Kaiser facility between September and December, 1993. Based on the water level measurements obtained on September 13, October 14 and December 7, 1993, the groundwater flow direction was northerly beneath the eastern portion of the site and easterly beneath the central and western portions of the site. Water level measurements obtained on November 29, 1993 indicated that the groundwater flow direction was northerly beneath the eastern portion of the site and easterly beneath the central and western portions of the site and the adjacent Kaiser facility. Groundwater flow beneath the site appears to be affected by seasonal pumping of supply wells located within the Rinaldi-Toluca and North Hollywood well fields.

During the November 29-30 and December 4, 1993 sampling episodes, the static groundwater level was between 0.08 (GW-10) and 18.52 (GW-5) feet above the top of the screened intervals in wells GW-1 through GW-6, GW-7 and GW-10. Based on these static groundwater levels, the sampling pump and associated packer was lowered 8 to 9 feet below the top of the screened interval, which corresponded to approximately 9 to 27 feet below the static groundwater level.

Since the groundwater level was above the screened interval in several of the wells, the upper 8 to 9 feet of the aquifer was not able to be isolated in all of the wells during sampling activities. Due to the fact that groundwater samples were collected at slightly different depths within the aquifer, the analytical results obtained from groundwater monitoring activities this quarter may not correlate with previous sampling episodes.

Nitrate was detected in the groundwater samples collected from wells GW-2 through GW-8 at concentrations equal to or above the MCL. The turbidity levels in wells GW-5 and GW-6 were above the secondary MCL. No other inorganic constituents were detected above the primary or secondary MCL.

PCE was not detected in the groundwater samples collected from well GW-7 above a detection limit of 0.5 $\mu\text{g}/\ell$. However, PCE was detected in the groundwater samples collected from wells GW-1 (2.6 $\mu\text{g}/\ell$) and GW-10 (1.2 $\mu\text{g}/\ell$) located northeast and northwest of well GW-7, respectively.

TCE was detected in the groundwater samples collected from wells GW-2, GW-3, GW-7 and GW-10 at concentrations above the MCL. All other VOCs detected in the groundwater samples collected from the six on-site wells and four off-site wells sampled during this monitoring event were present

at concentrations below their respective MCLs.

In general, the concentrations of VOCs detected in wells GW-1 through GW-4, GW-7 and GW-10 have decreased since the previous sampling event. The concentrations of TCE detected in wells GW-1 through GW-4, GW-7 and GW-10 decreased from 91, 48, 49, 1.0, 33 and 50 $\mu\text{g}/\ell$, respectively, during the next previous sampling event to 4.4, 29, 15, 0.6, 7.7 and 15 $\mu\text{g}/\ell$, respectively, during the most recent sampling event.

The concentrations of VOCs detected in wells GW-5, GW-6, GW-8 and GW-9 have increased slightly since the last time these wells were sampled. The concentrations of TCE detected in wells GW-5, GW-6, GW-8 and GW-9 increased from 0.77, 0.87, 0.80 and 2.4 $\mu\text{g}/\ell$, respectively, during the previous sampling event to 0.97, 1.2, 0.9 and 3.1 $\mu\text{g}/\ell$, respectively, during the most recent sampling event.

Under the current monitoring program for the site, nitrate is analyzed in accordance with EPA Test Method 300.0. EPA Test Method 300.0 requires that the nitrate concentrations be reported as NO_3 . It is our understanding that the nitrate data generated previously by T.A. Gleason and Associates for the last three quarters of 1991 and the first three quarters of 1992 were reported as nitrate as N. The conversion factor between nitrate as N and nitrate as NO_3 is approximately 4.4. Thus, for comparison purposes, the nitrate as N data generated by T.A. Gleason & Associates has been numerically converted to nitrate as NO_3 using a constant of 4.4. It should be noted that the converted data do not represent actual analytical results for nitrate as NO_3 .

The next groundwater monitoring episode at the site is scheduled for early February (1st Quarter 1994).

8.0 LIMITATIONS

SEACOR has prepared this report for the exclusive use of AlliedSignal AEROSPACE, their representatives, and other authorized parties. The findings and conclusions presented herein are based primarily upon the laboratory analysis of groundwater samples collected during this study. All work has been conducted in accordance with generally accepted practices in the fields of environmental engineering, geology, and hydrogeology that exist in Los Angeles County at this time. No other warranty, either expressed or implied, is made.

TABLES

TABLE 19 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-5
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	08/20/91	09/17/91	01/15/92	03/18/92	05/20/92	08/12/92	01/16/93	03/02/93	06/18/93	08/18/93	11/30/93
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	0.51	<0.5	<0.5	<0.2	<0.2
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.2	0.25
Freon 113	ND	ND	ND	ND	ND	ND	<0.5	0.66	<0.5	<0.2	<0.2
Trichloroethene	ND	ND	ND	ND	0.69	0.51	0.59	0.55	0.51	0.40	0.78
Tetrachloroethene	ND	ND	ND	ND	0.52	ND	0.85	0.90	0.69	0.77	0.97
m- & p-xylenes	ND	ND	ND	ND	ND	ND	0.63	<0.5	<0.5	<0.2	<0.2
Naphthalene	ND	ND	ND	ND	ND	ND	0.53	<0.5	<0.5	<0.2	0.45
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5	<0.2	0.63

ND: Not Detected.

<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

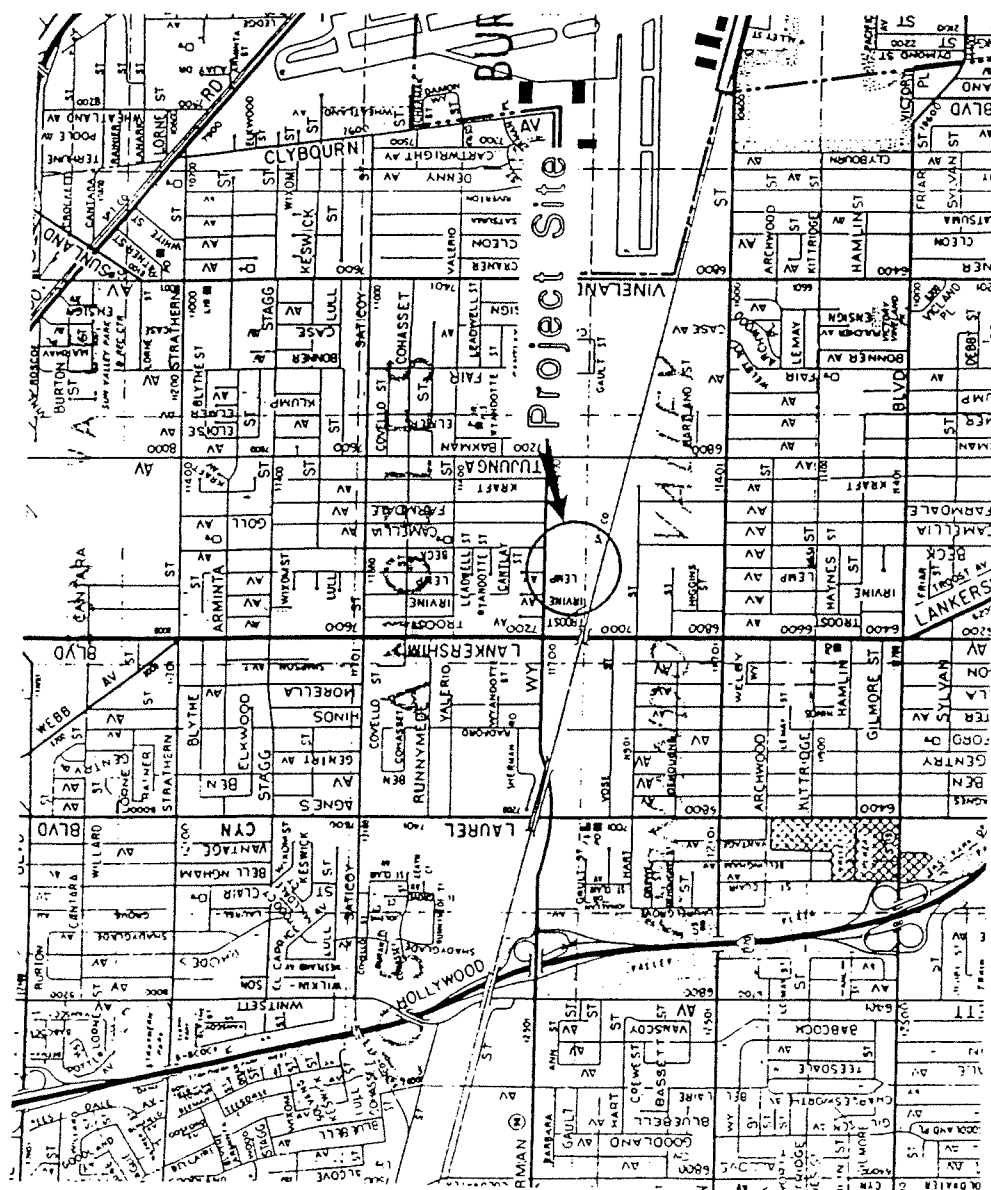
TABLE 20 - HISTORIC VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS FOR GW-6
(all results in micrograms per liter)

Organic Constituent	Sample Date										
	08/22/91	09/19/91	01/16/92	03/17/92	05/20/92	08/11/92	01/14/93	03/03/93	06/17/93	08/18/93	11/30/93
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.3
Naphthalene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.4
Trichloroethene	0.63	0.77	1.2	1.8	0.85	0.52	1.7	1.7	1.2	0.84	1.2
Tetrachloroethene	ND	ND	1.1	0.98	ND	ND	0.95	1.6	1.1	0.87	1.2
cis-1,2-dichloroethene	ND	ND	0.65	ND	ND	ND	<0.5	<0.5	0.50	0.36	0.4
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	<0.5	<0.5	<0.2	<0.2	0.3

ND: Not Detected.
<3: Less than the detection limit of 3.

Common laboratory solvents (e.g., methylene chloride) and trihalomethanes (e.g., chloroform) that were reported at 10 µg/l or less are not included in this table.

FIGURES



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North Hollywood Facility

VICINITY MAP

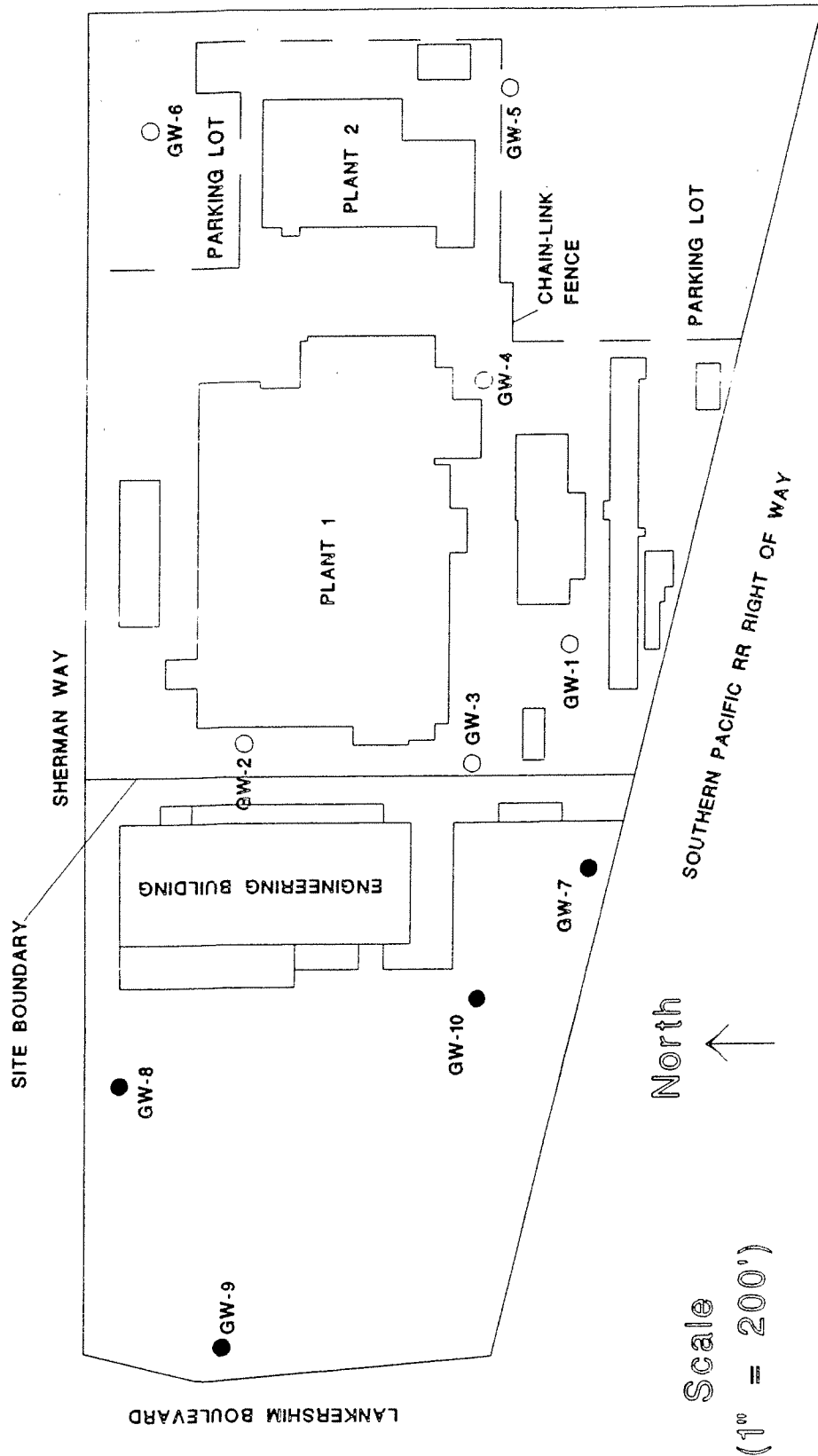
FIGURE 1

North
↑
Scale
(1" = 2800')

SEACOR

Base Map: The Thomas Guldo, Los Angeles & Orange Counties, 1987, Page 16.

004484



Scale
(1" = 200')

Legend:

- (○) Denotes approximate location of onsite monitoring well.
- Denotes approximate location of offsite monitoring well.

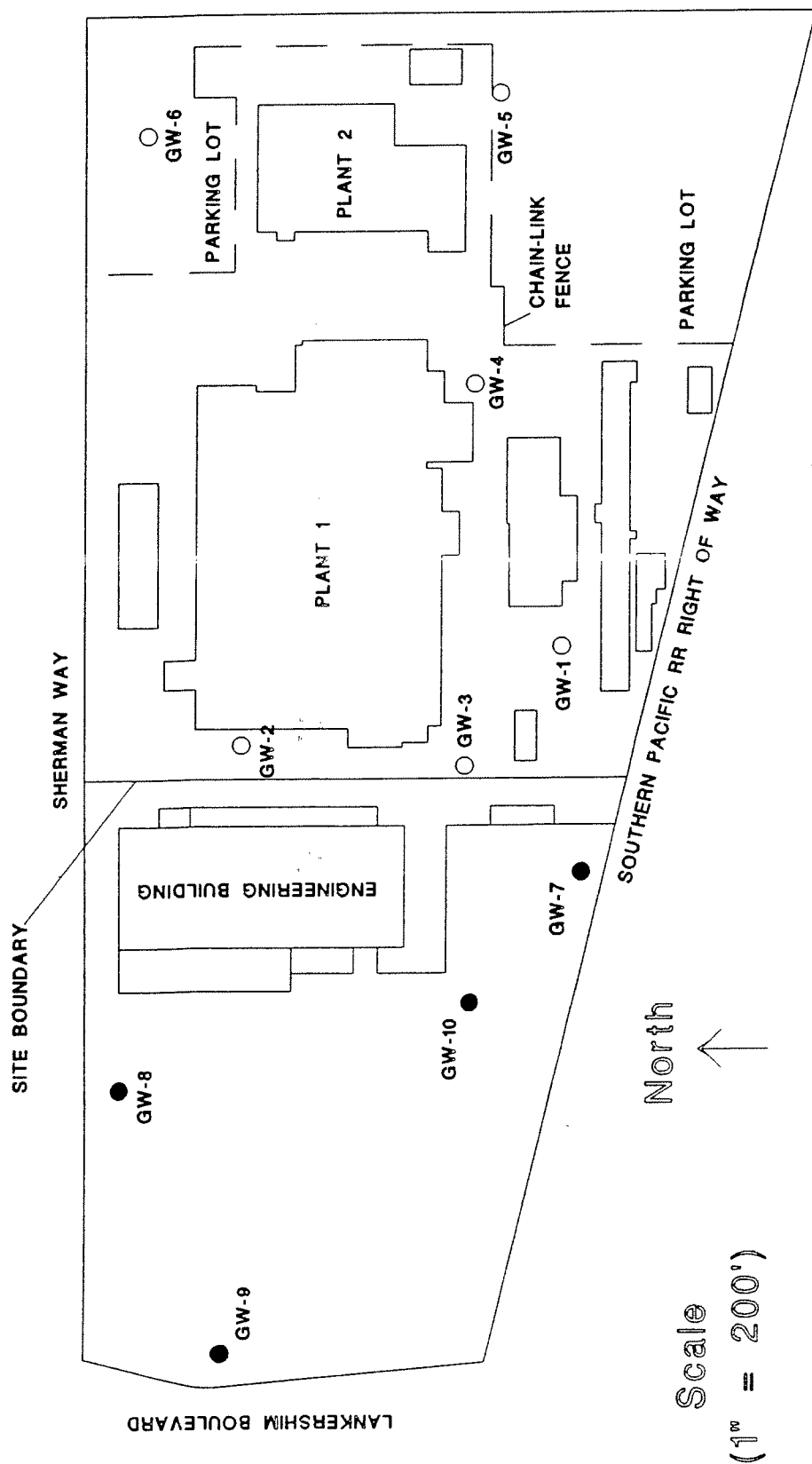
ALLIEDSIGNAL
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North Hollywood Facility

SITE MAP

FIGURE 2

File Name: AS2-A57SM2

SEACOR



Legend:

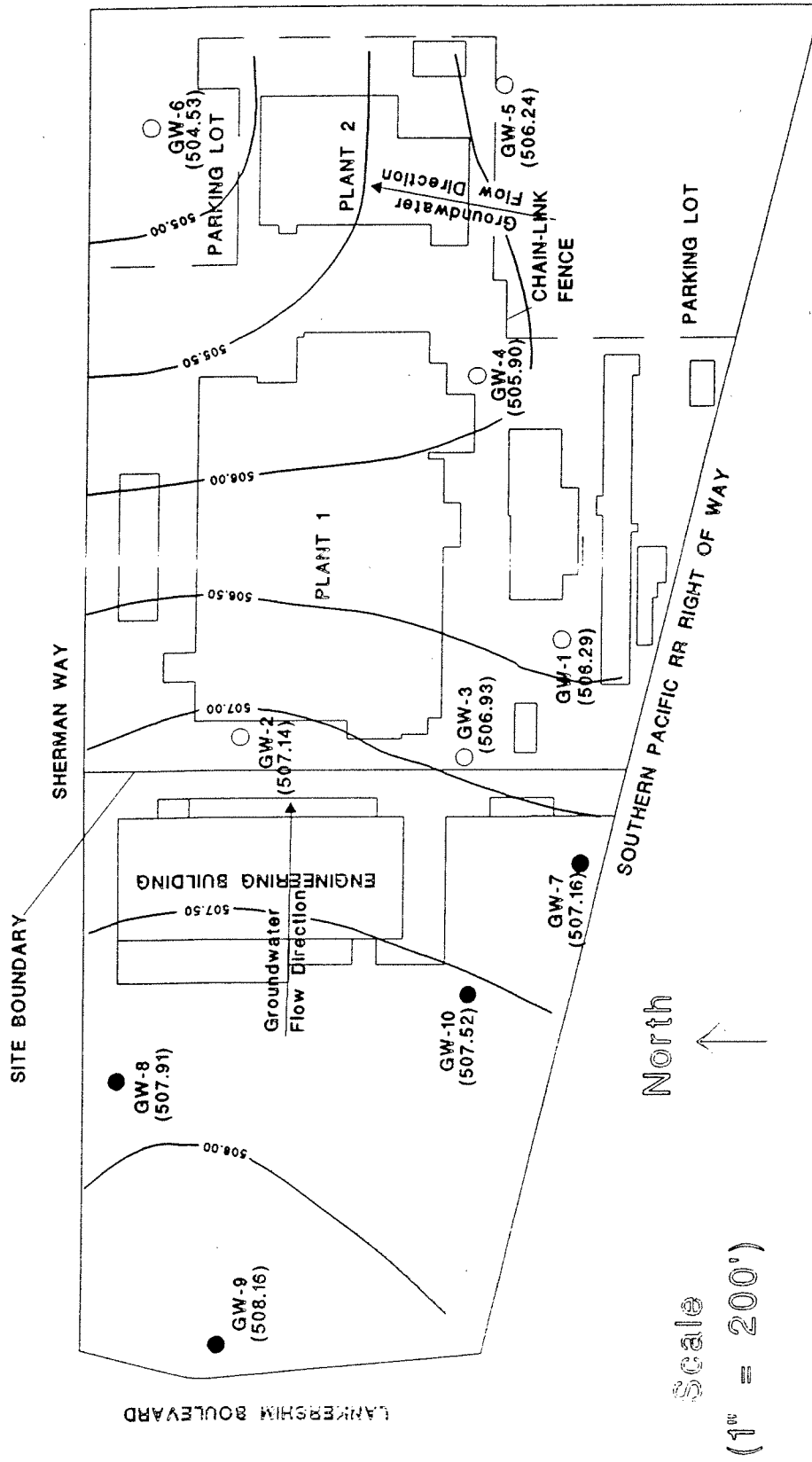
- Denotes approximate location of onsite monitoring well.
- Denotes approximate location of offsite monitoring well.

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North Hollywood Facility

SITE MAP
FIGURE 2

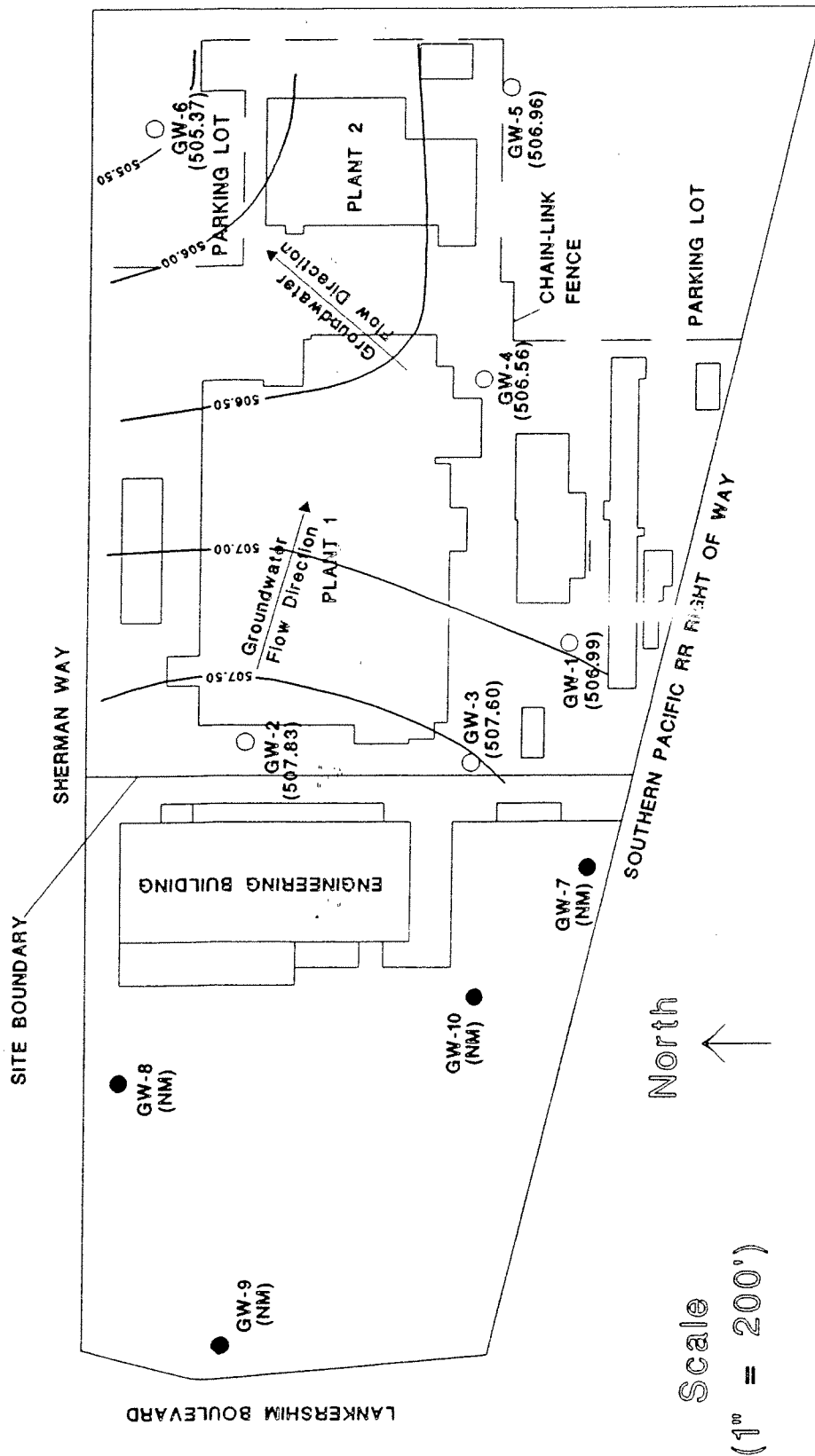
File Name: AS1-A57SM

SEACOR



Note: Groundwater measurements obtained on November 29, 1993.

<p>GROUNDWATER CONTOUR MAP (11/29/93) FIGURE 3</p>	<p>ALLIEDSIGNAL AEROSPACE COMPANY North Hollywood Facility</p>	<p>Legend:</p> <ul style="list-style-type: none"> ○ GW-6 Denotes approximate location of onsite monitoring well. ● GW-10 Denotes approximate location of offsite monitoring well. 506.29 Denotes groundwater surface elevation in feet above mean sea level. 506.00 — Denotes groundwater contour line.
<p>SEACOR</p>	<p>File Name: AS2-A57G1193</p>	



Note: Groundwater measurements obtained on December 7, 1993.

Legend:

- Denotes approximate location of onsite monitoring well.
- Denotes approximate location of offsite monitoring well.
- 506.14 Denotes groundwater surface elevation in feet above mean sea level.
- 506.00 — Denotes groundwater contour line.
- (NM) Not measured

GROUNDWATER CONTOUR MAP

(12/7/93)

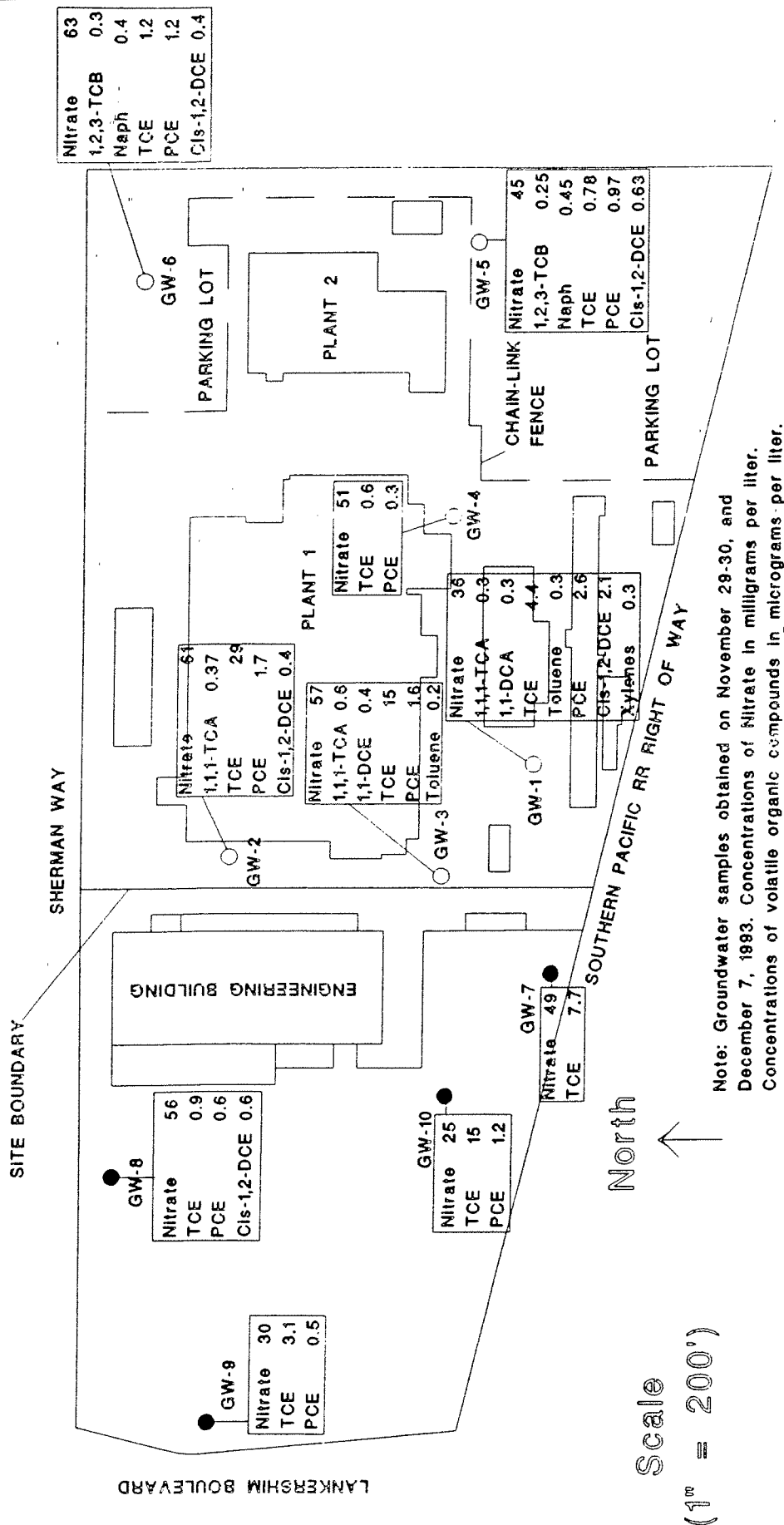
FIGURE 4

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File Name: AS2-A57G1293

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004488



Legend:

TCE	Trichloroethene
PCE	Tetrachloroethene
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCE	1,1-Dichloroethene
1,1-DCA	1,1-Dichloroethane
1,2,3-TCB	1,2,3-Trichlorobenzene
Naph	Naphthalene
Cis-1,2-DCE	Cis-1,2-Dichloroethene

ALLIEDSIGNAL AEROSPACE COMPANY North Hollywood Facility

File Name: AS2-A57NVOCM

NITRATE AND VOC CONCENTRATION MAP FIGURE 5

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Figure 6
Historic Groundwater Elevation in GW-1

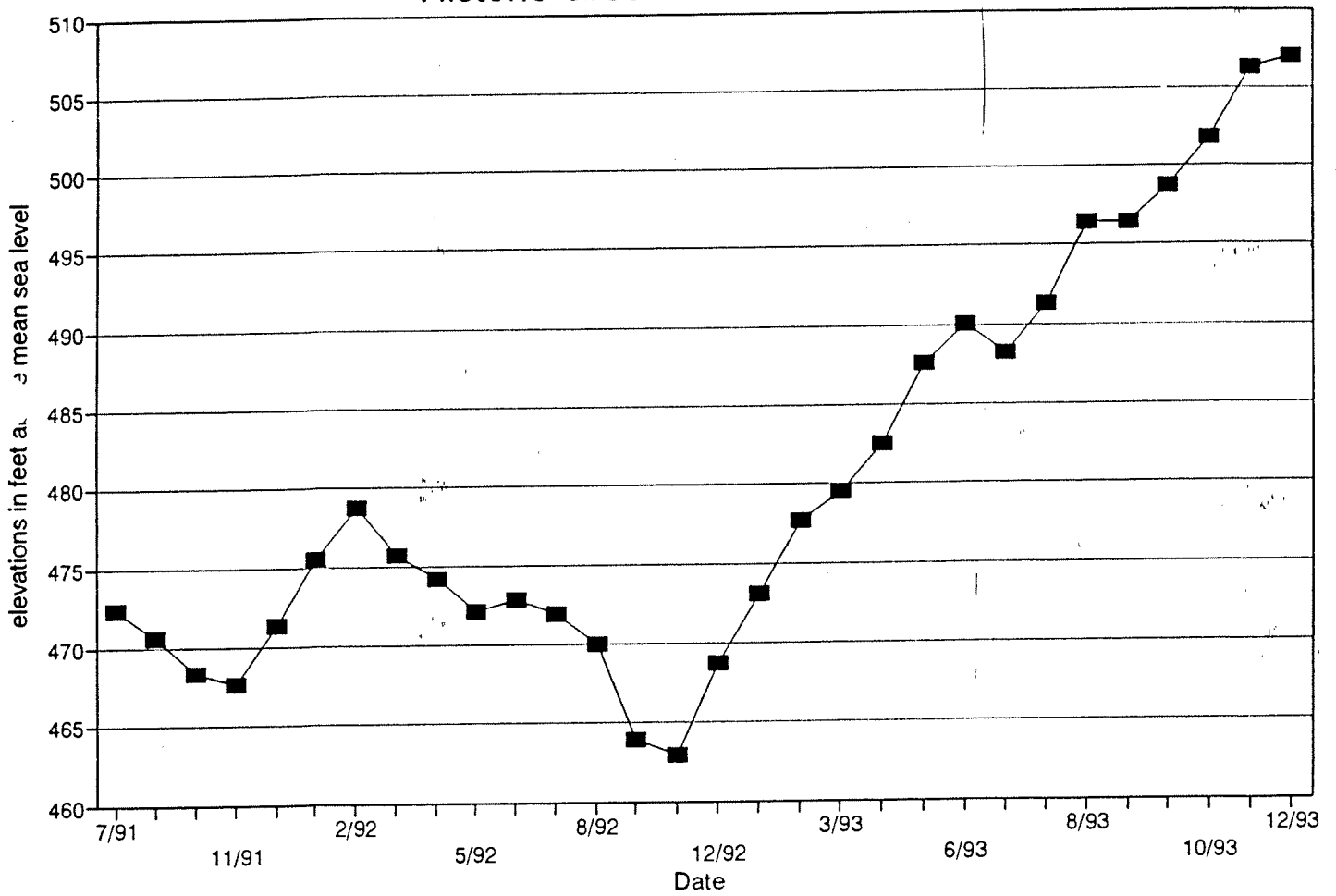


Figure 7
Nitrate Concentration in GW-1

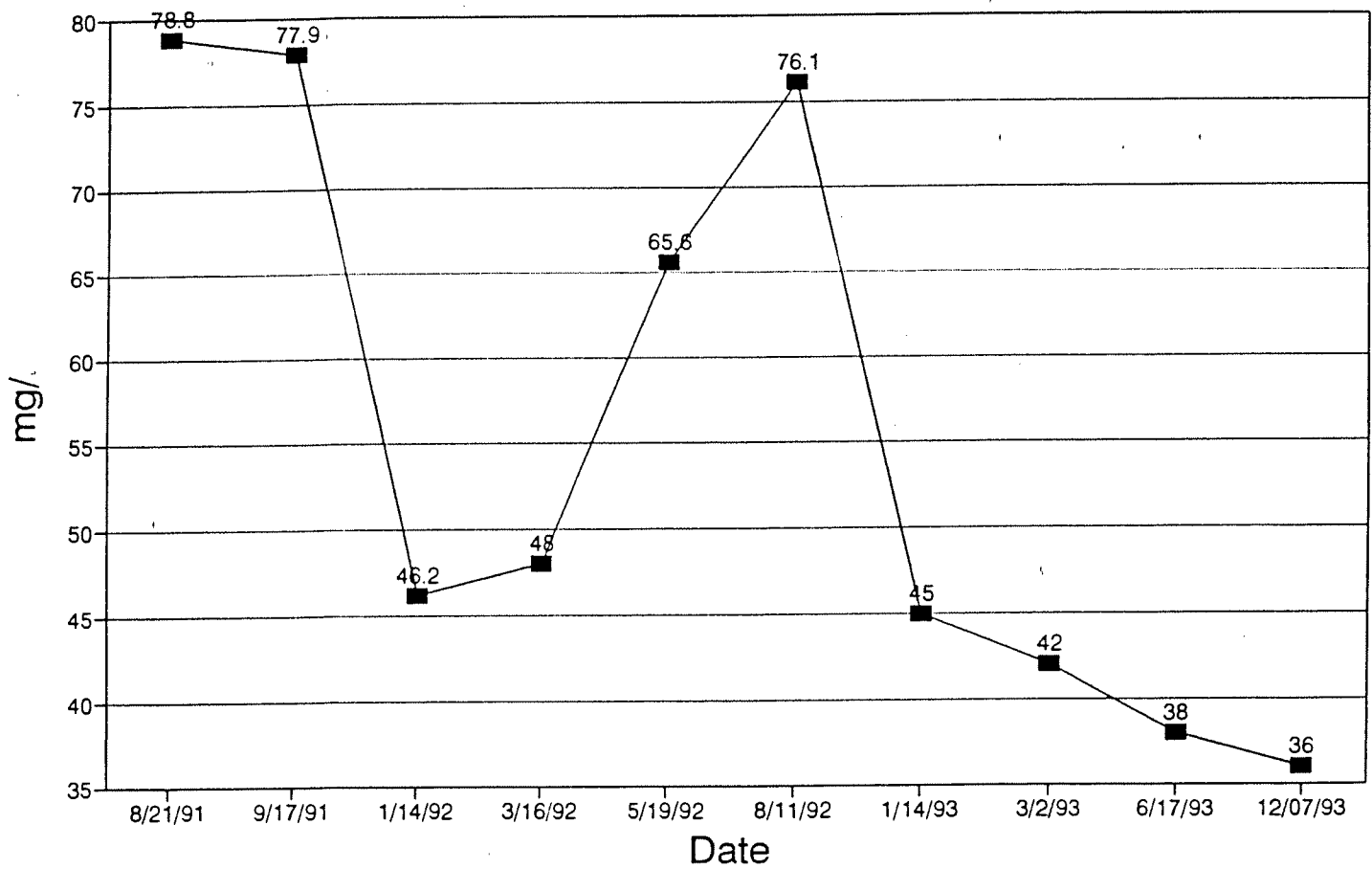


Figure 8
1,1,1-TCA Concentration in GW-1

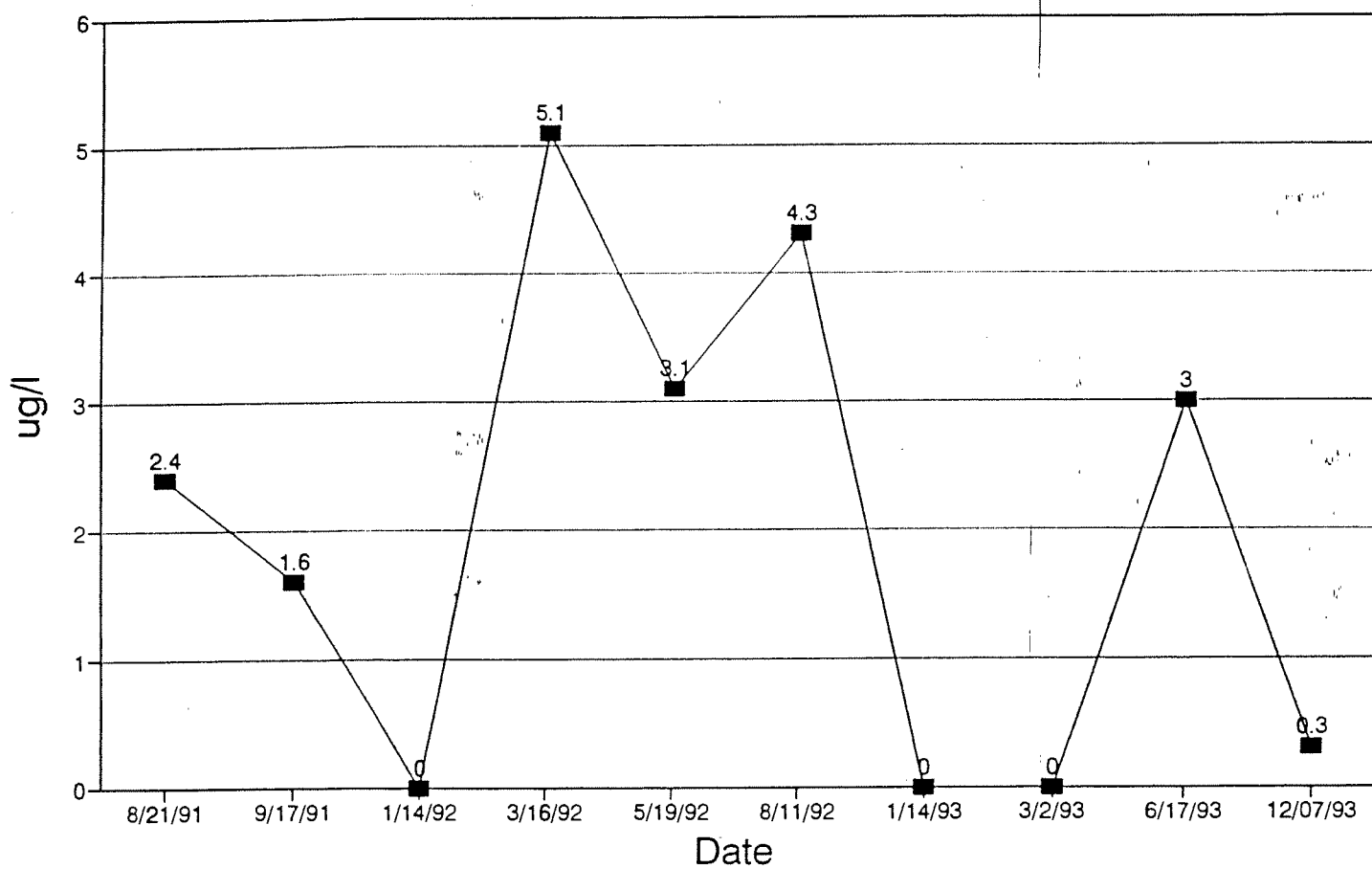


Figure 9
1,1-DCA Concentration in GW-1

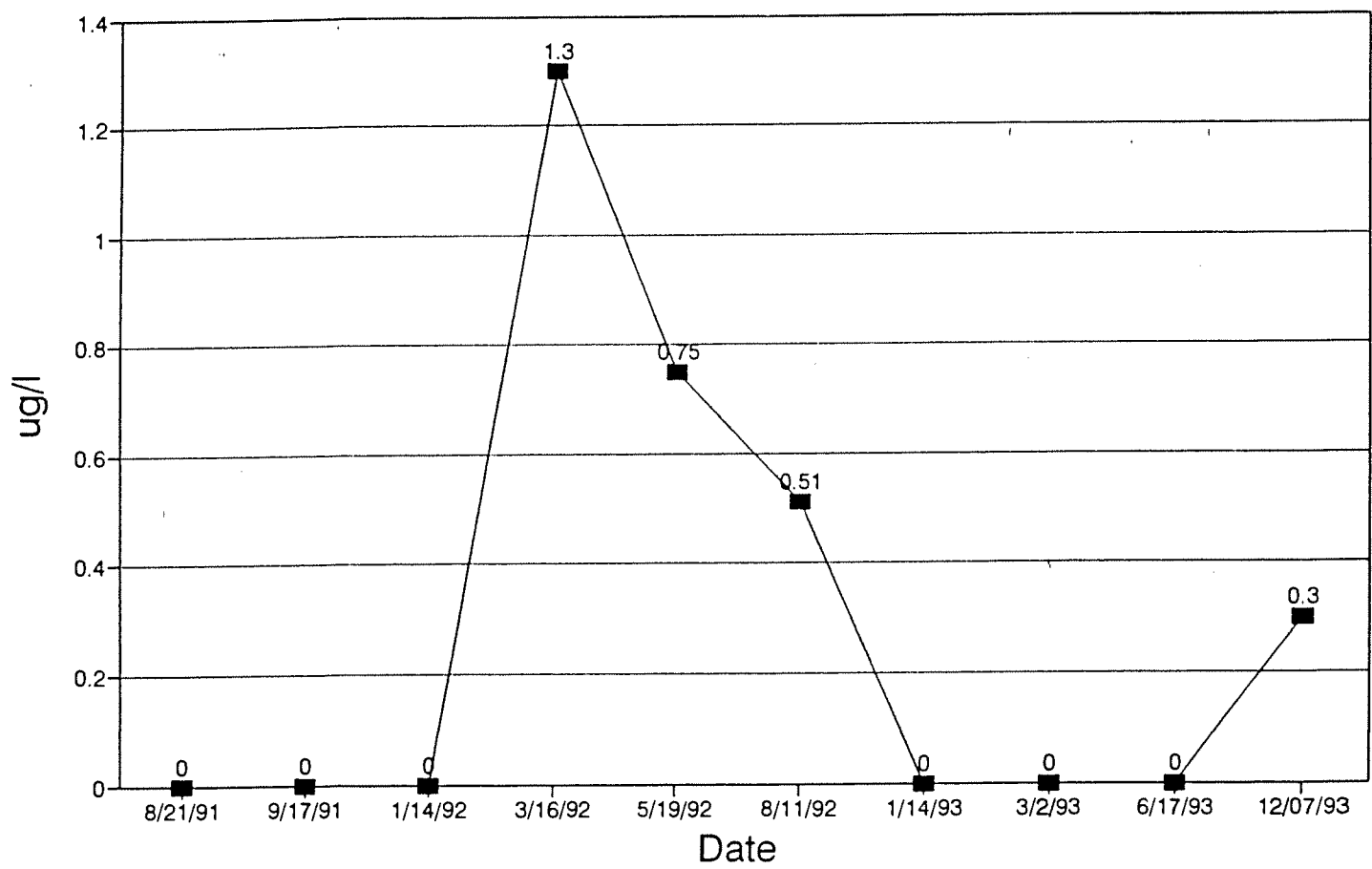


Figure 10
1,1-DCE Concentration in GW-1

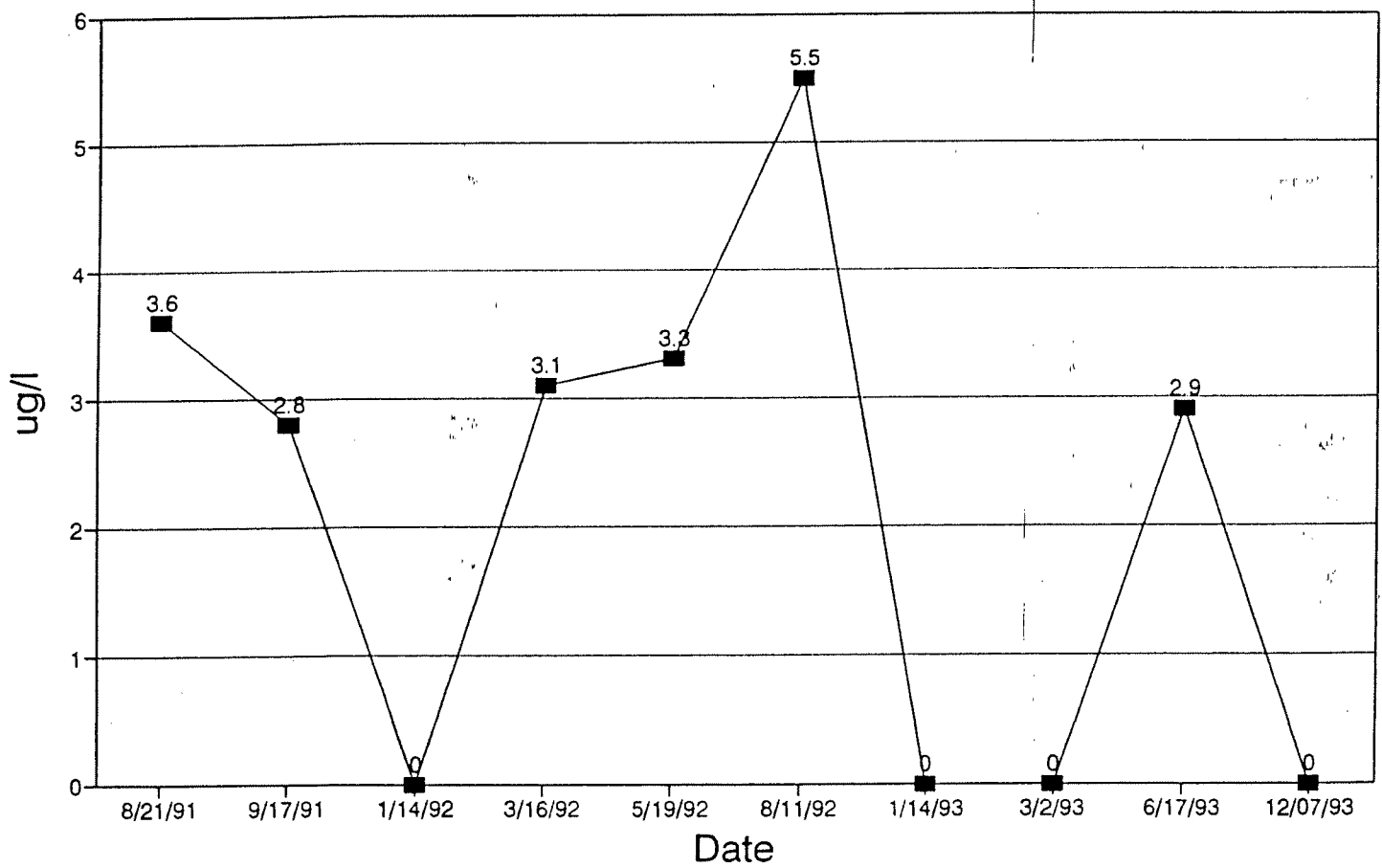


Figure 11
CCL4 Concentration in GW-1

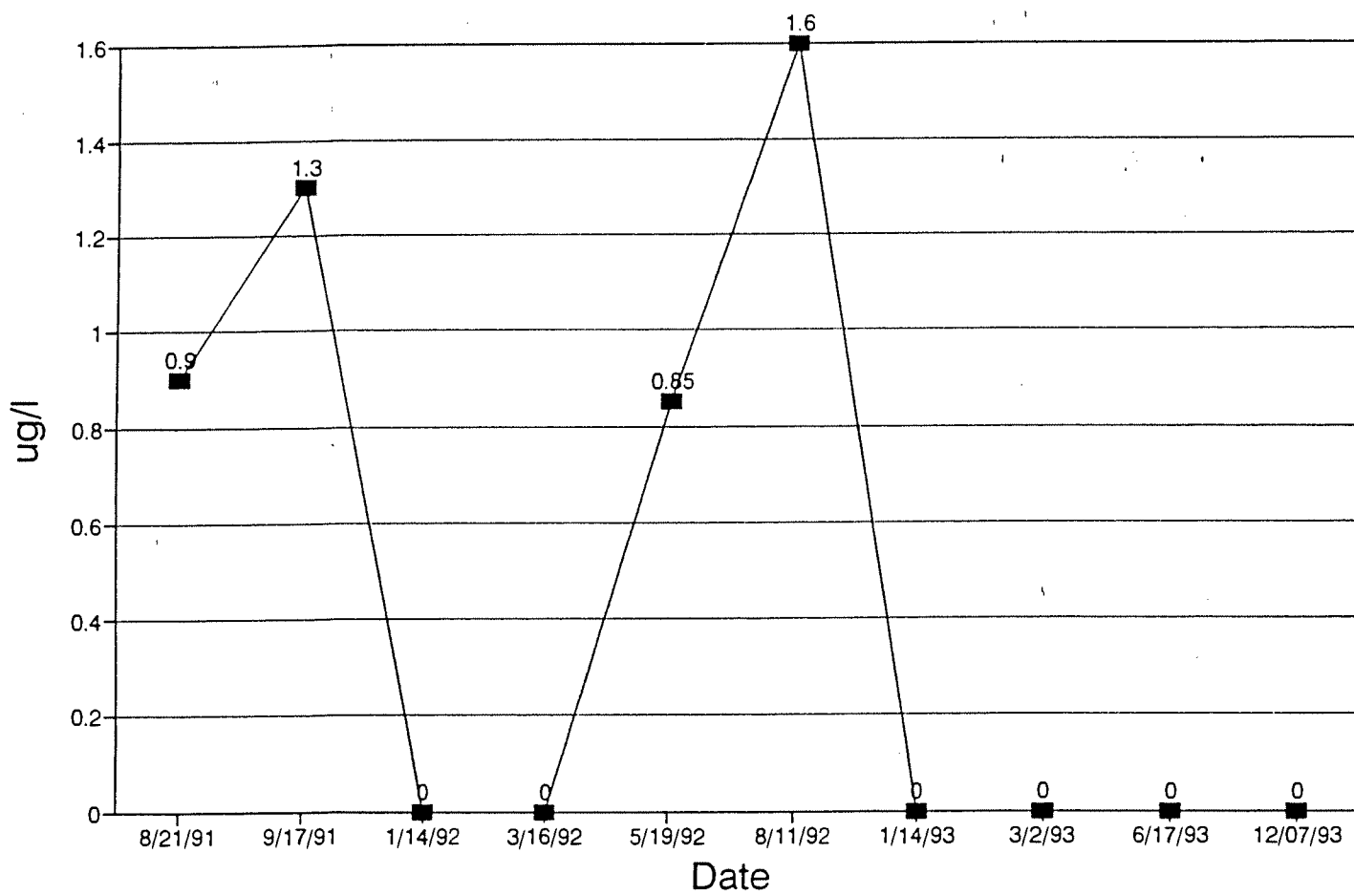


Figure 12
TCE Concentration in GW-1

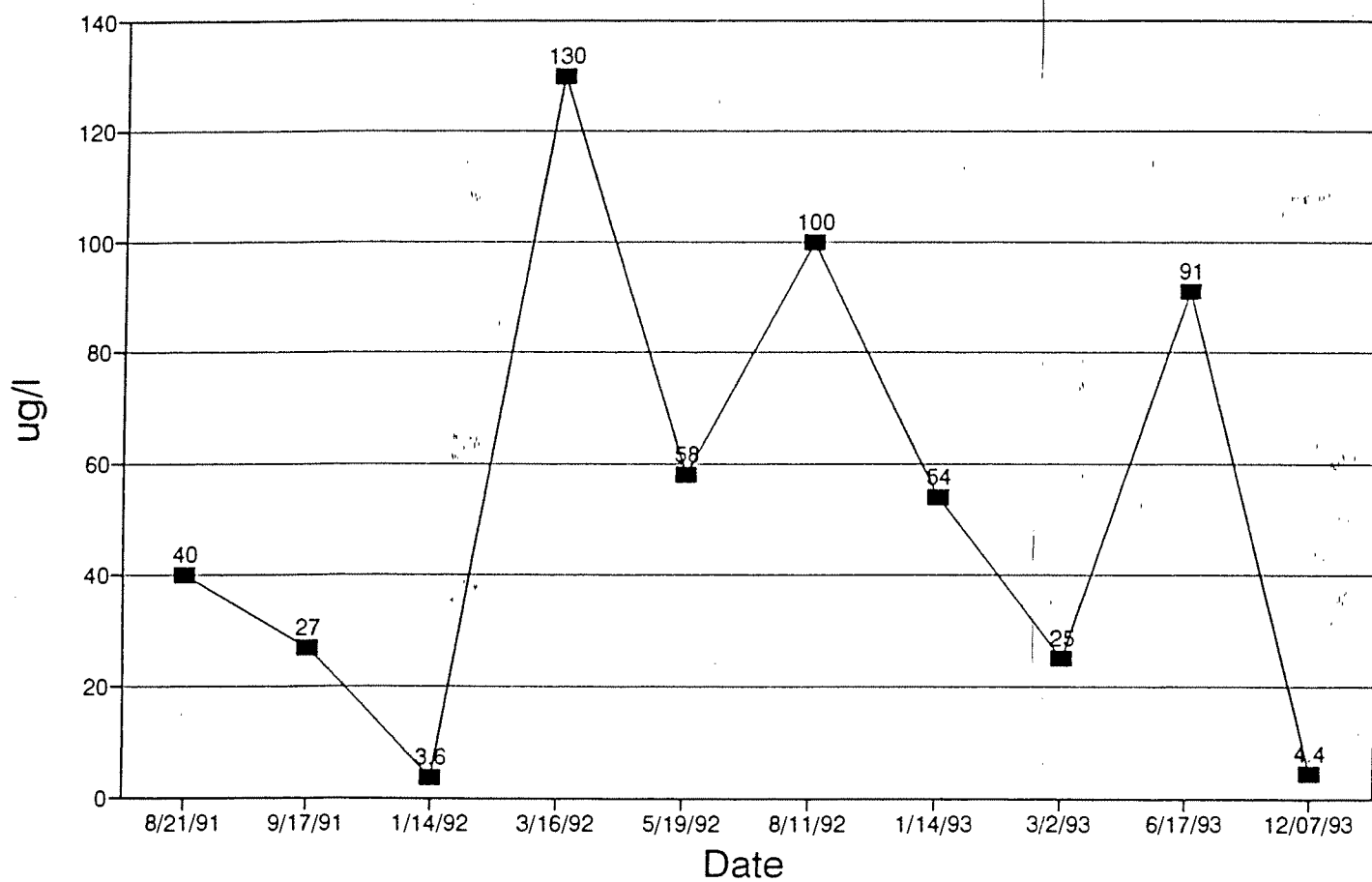


Figure 13
PCE Concentration in GW-1

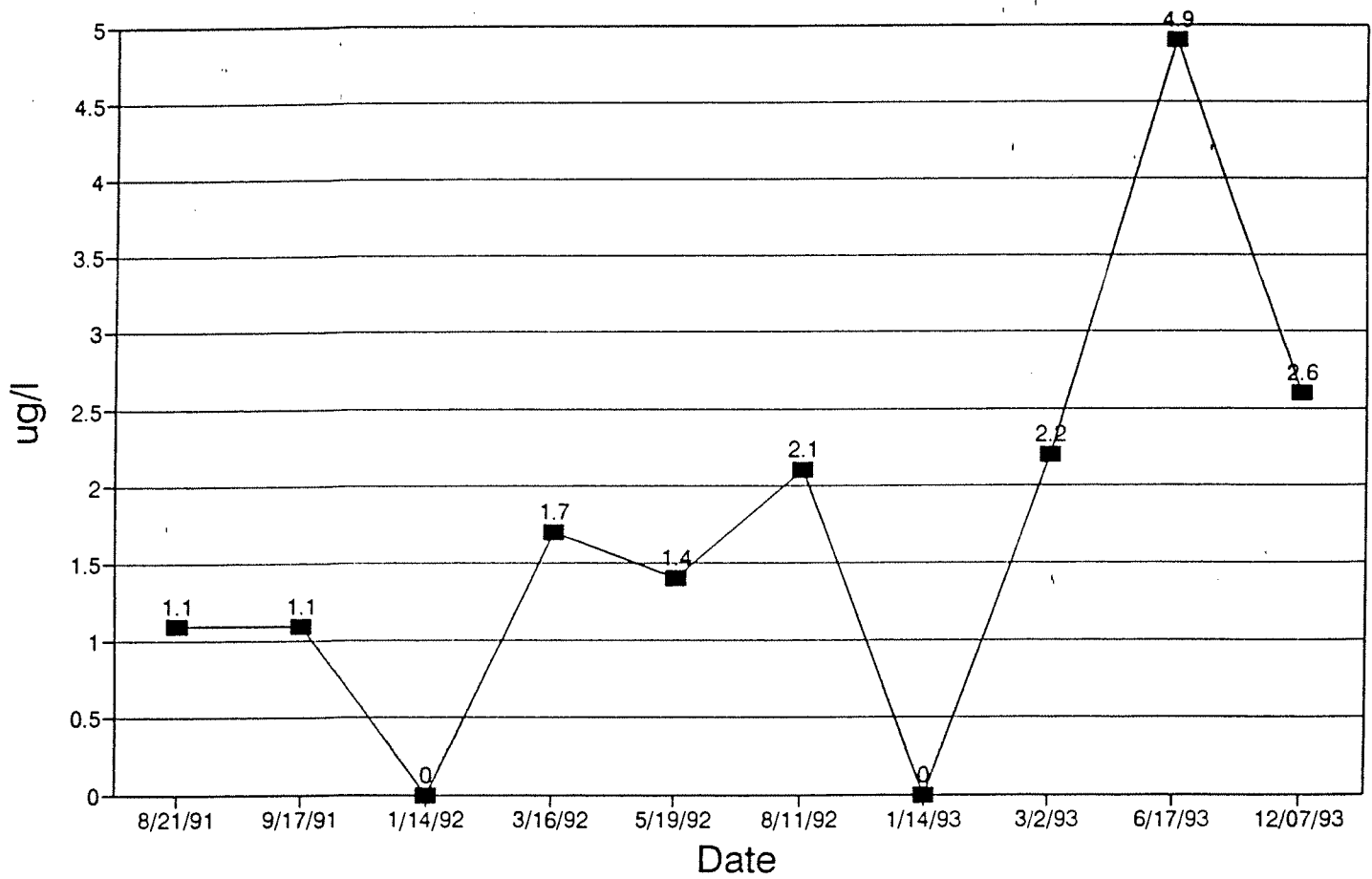


Figure 14
CIS-1,2-DCE Concentration in GW-1

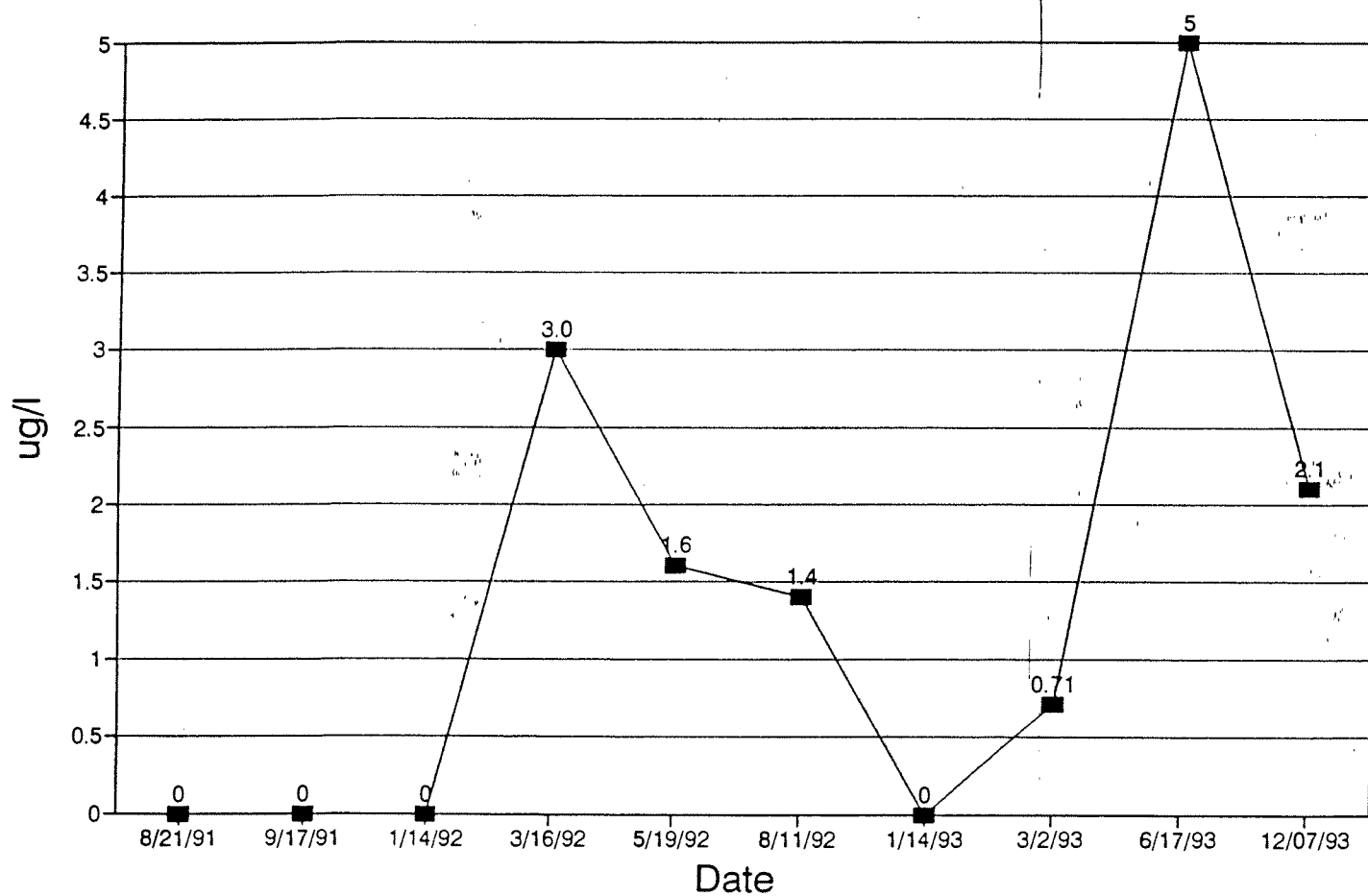


Figure 15
Historic Groundwater Elevation in GW-2

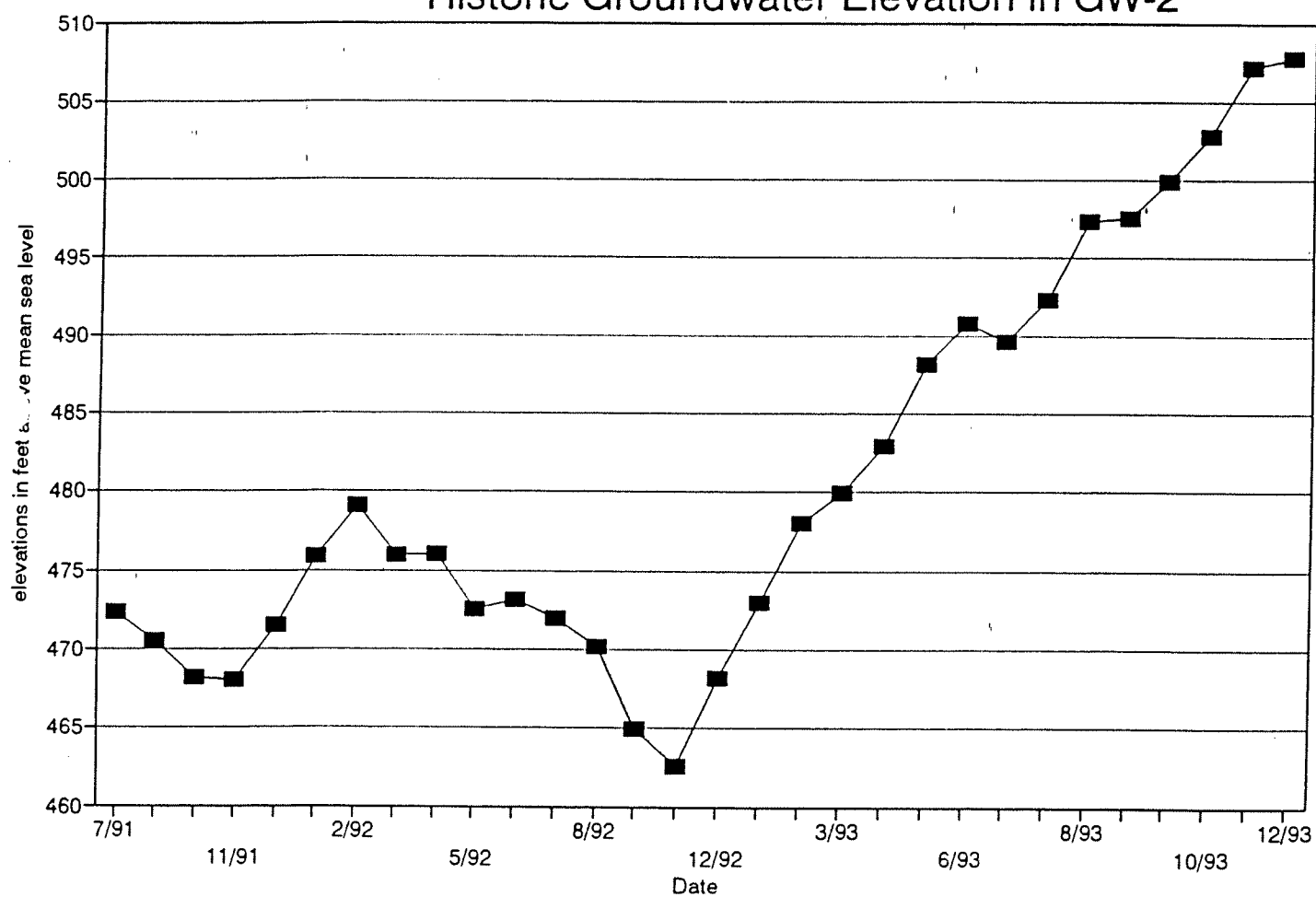


Figure 16
Nitrate Concentration in GW-2

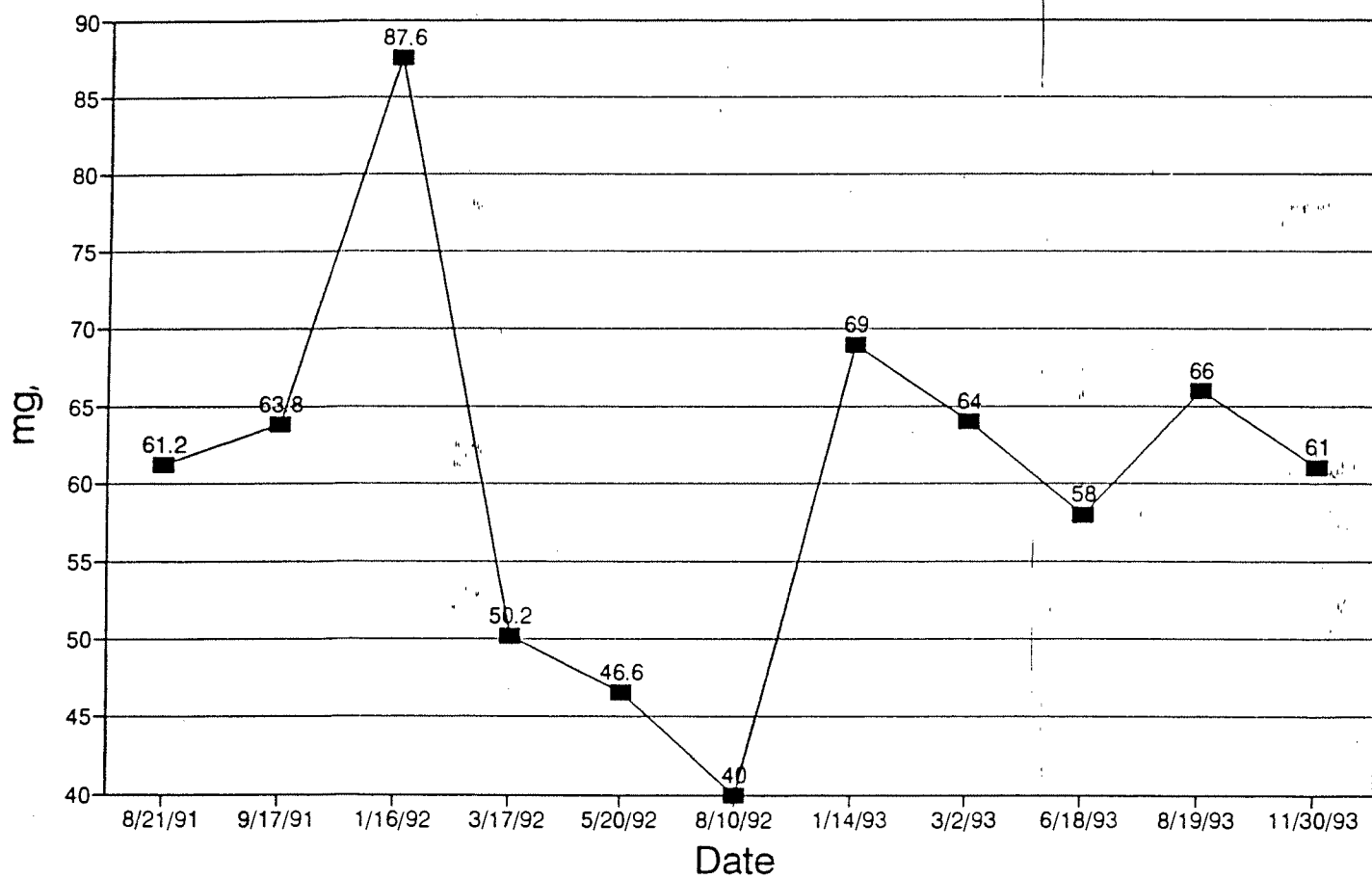


Figure 17
1,1,1-TCA Concentration in GW-2

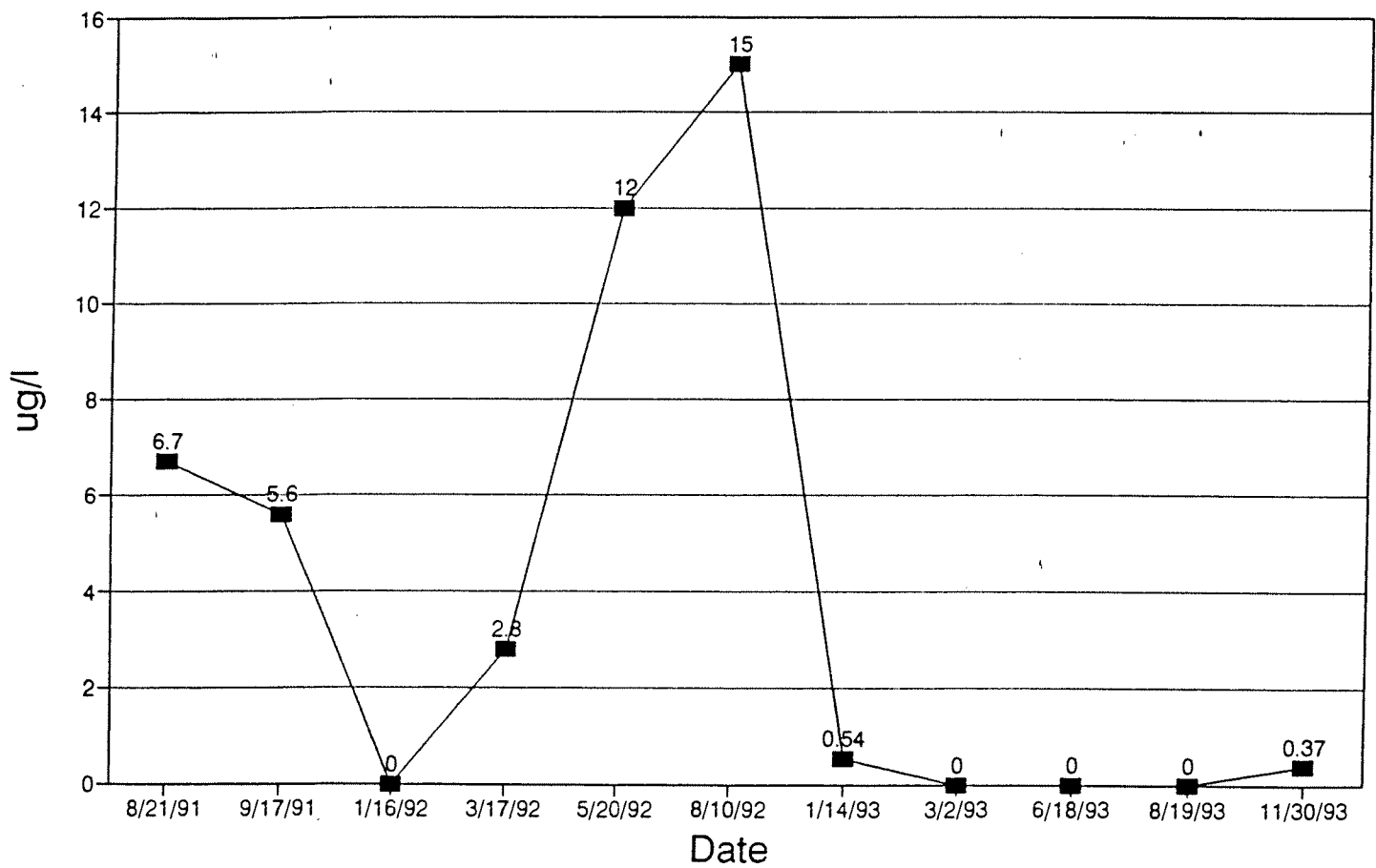


Figure 18
1,1-DCE Concentration in GW-2

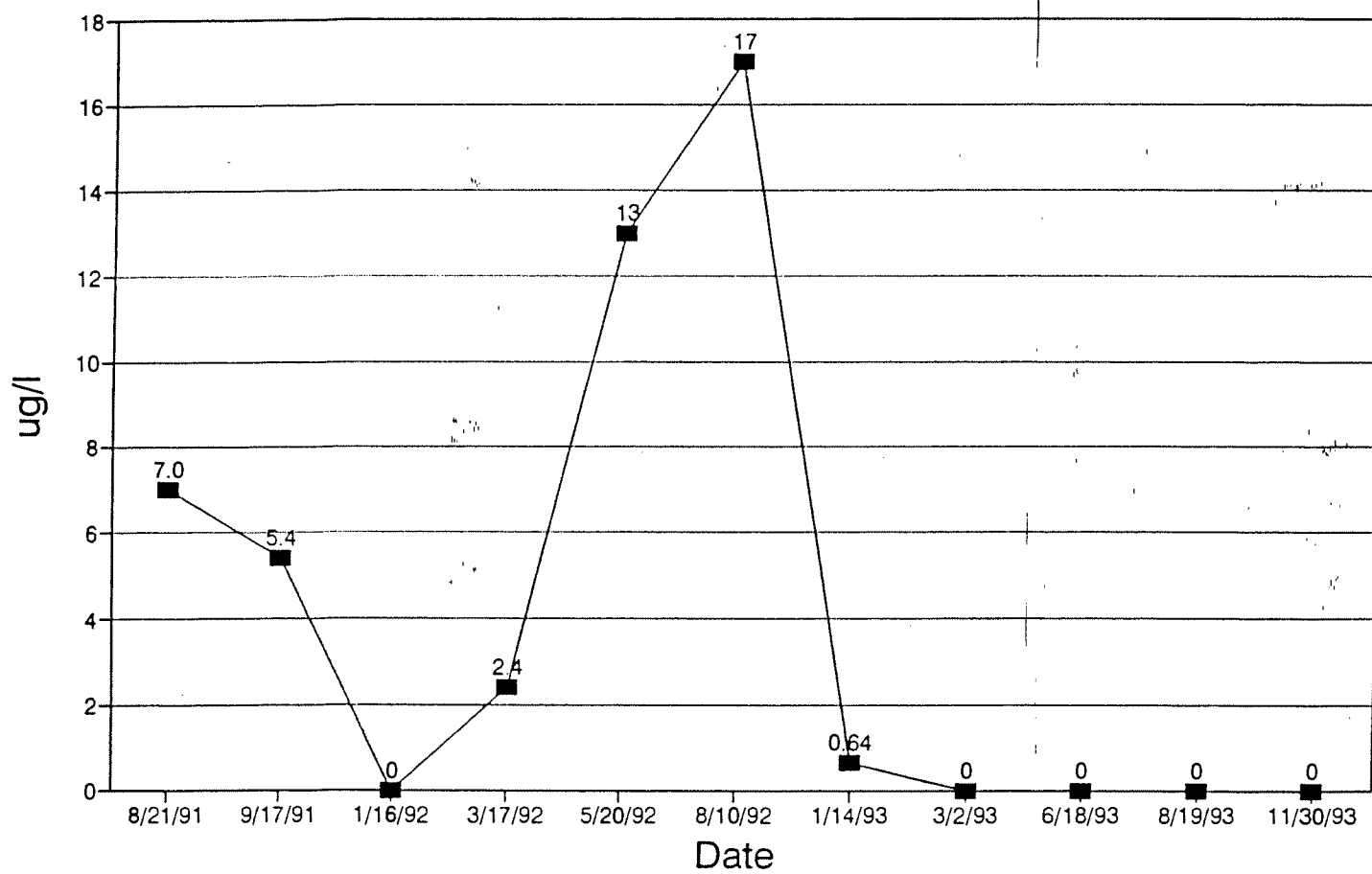


Figure 19
CCL4 Concentration in GW-2

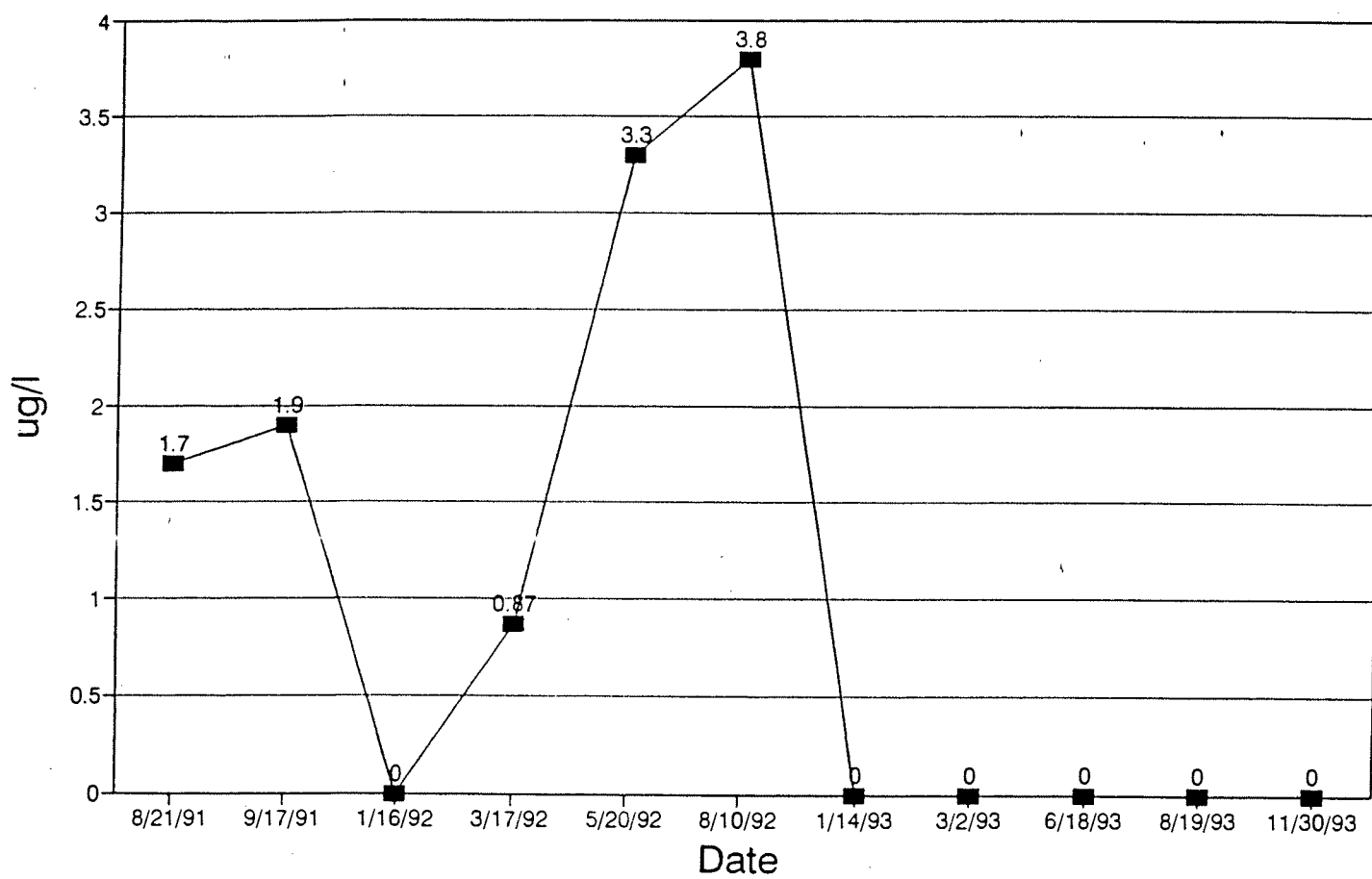


Figure 20
TCE Concentration in GW-2

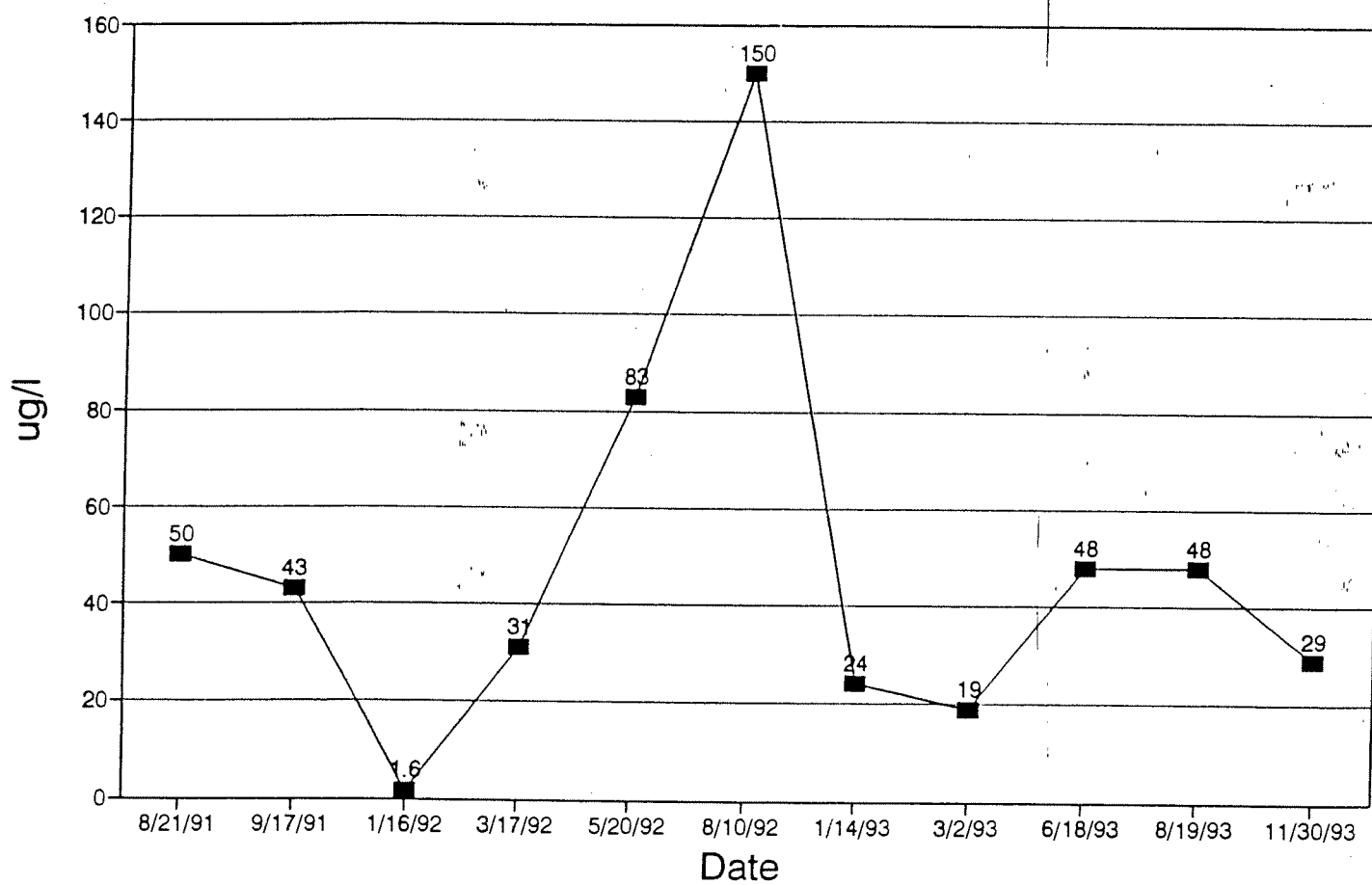


Figure 21
PCE Concentration in GW-2

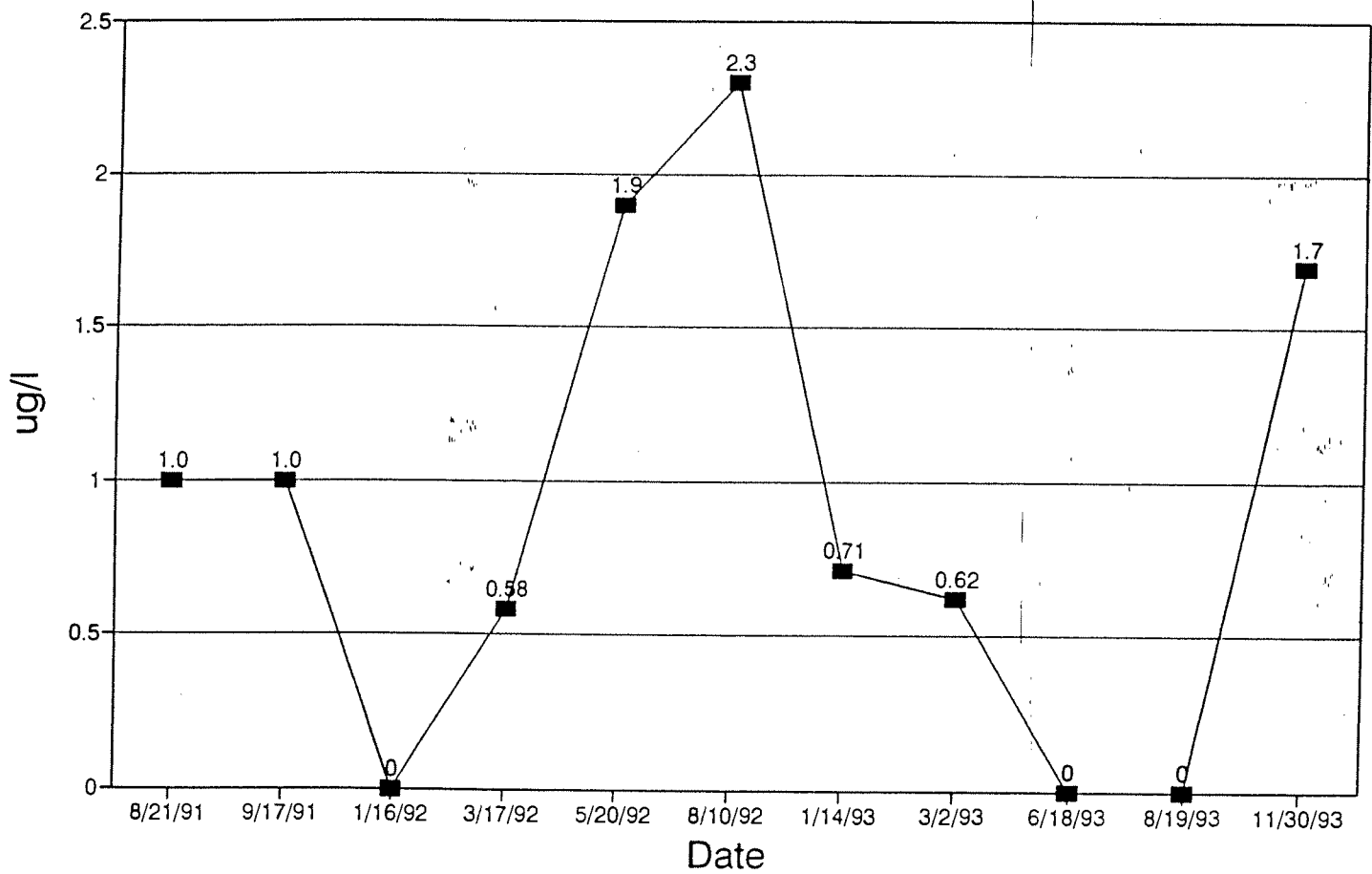


Figure 22
Historic Groundwater Elevation in GW-3

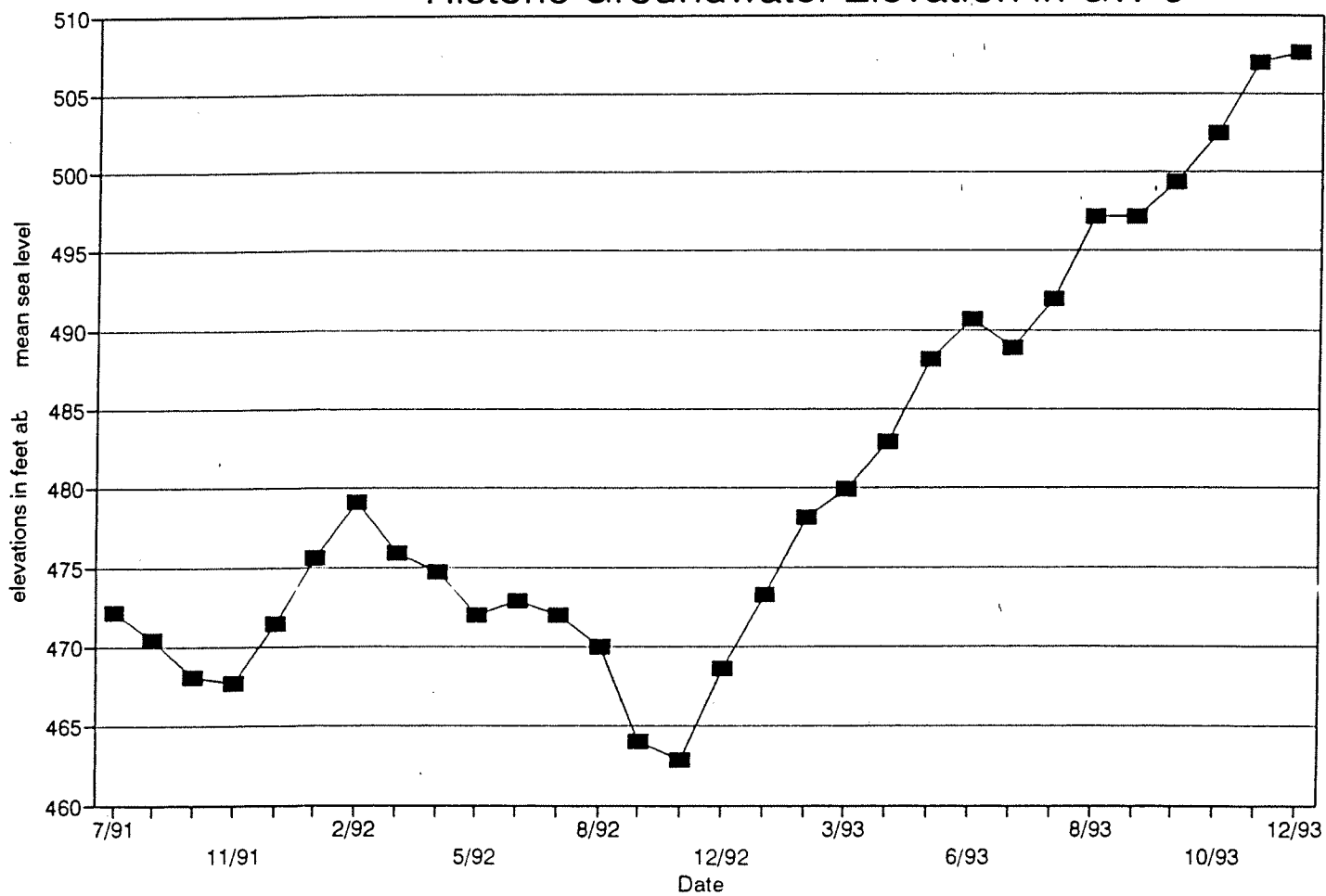


Figure 23
Nitrate Concentration in GW-3

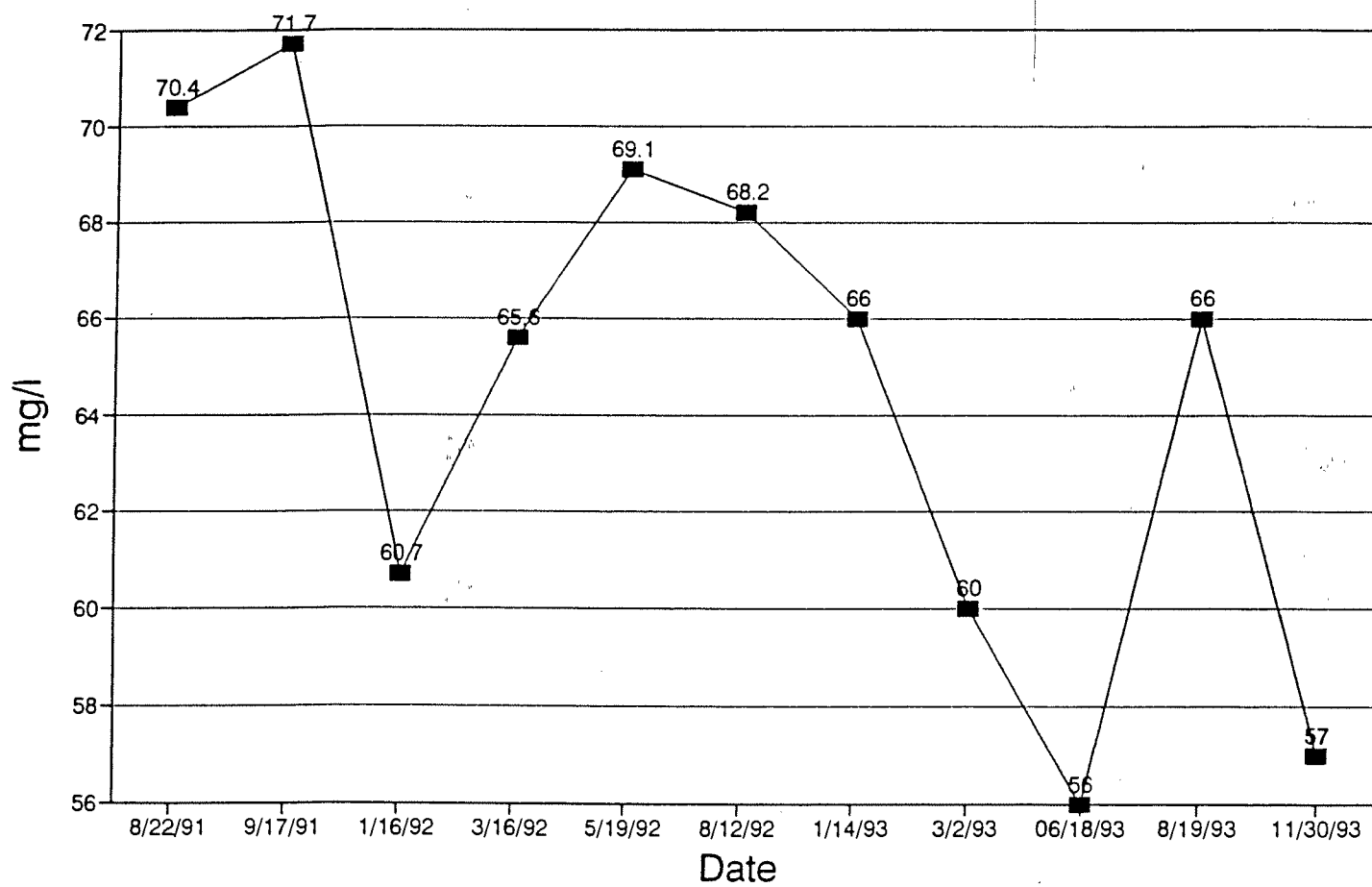


Figure 24
1,1,1-TCA Concentration in GW-3

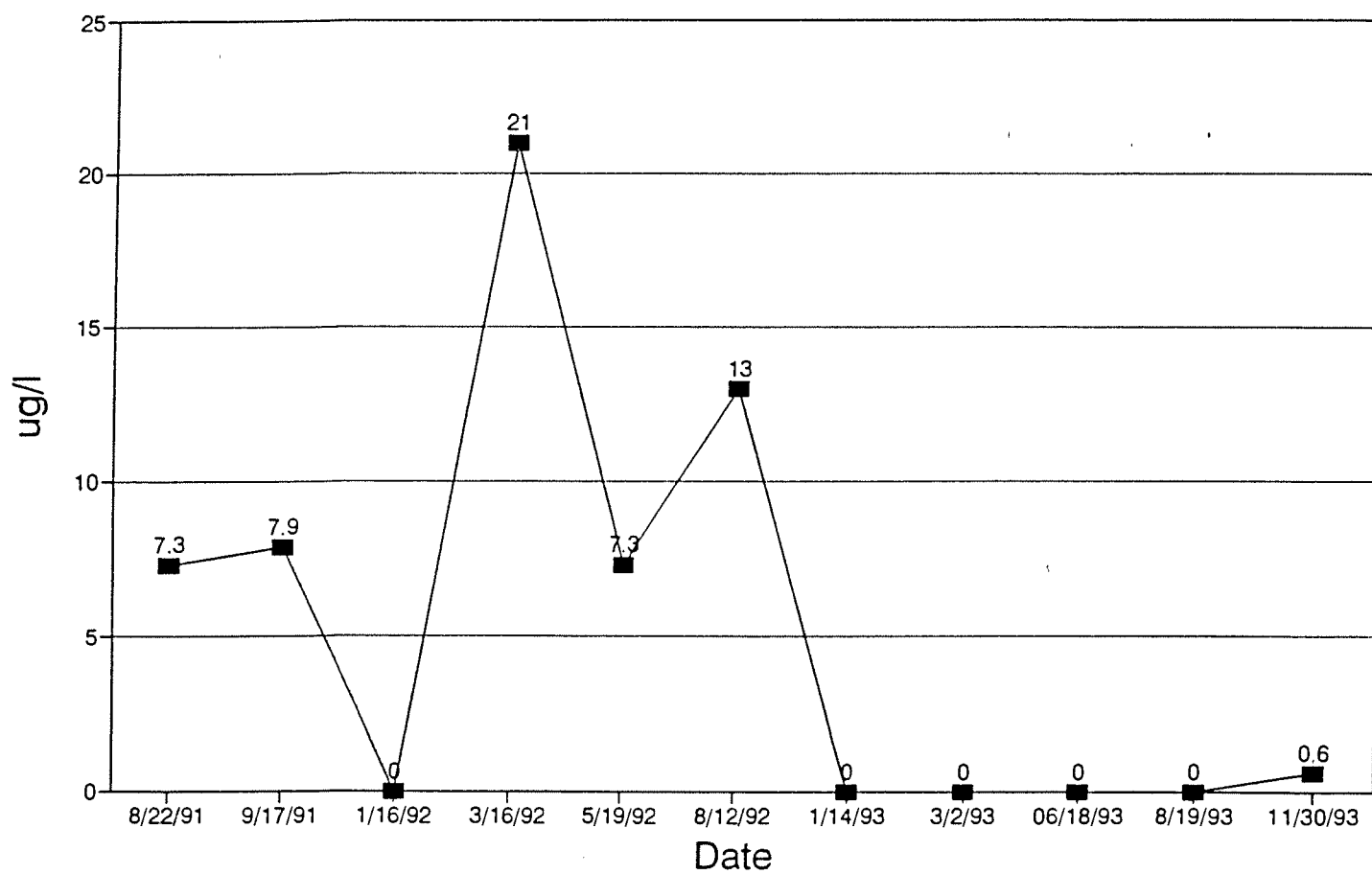


Figure 25
1,1-DCA Concentration in GW-3

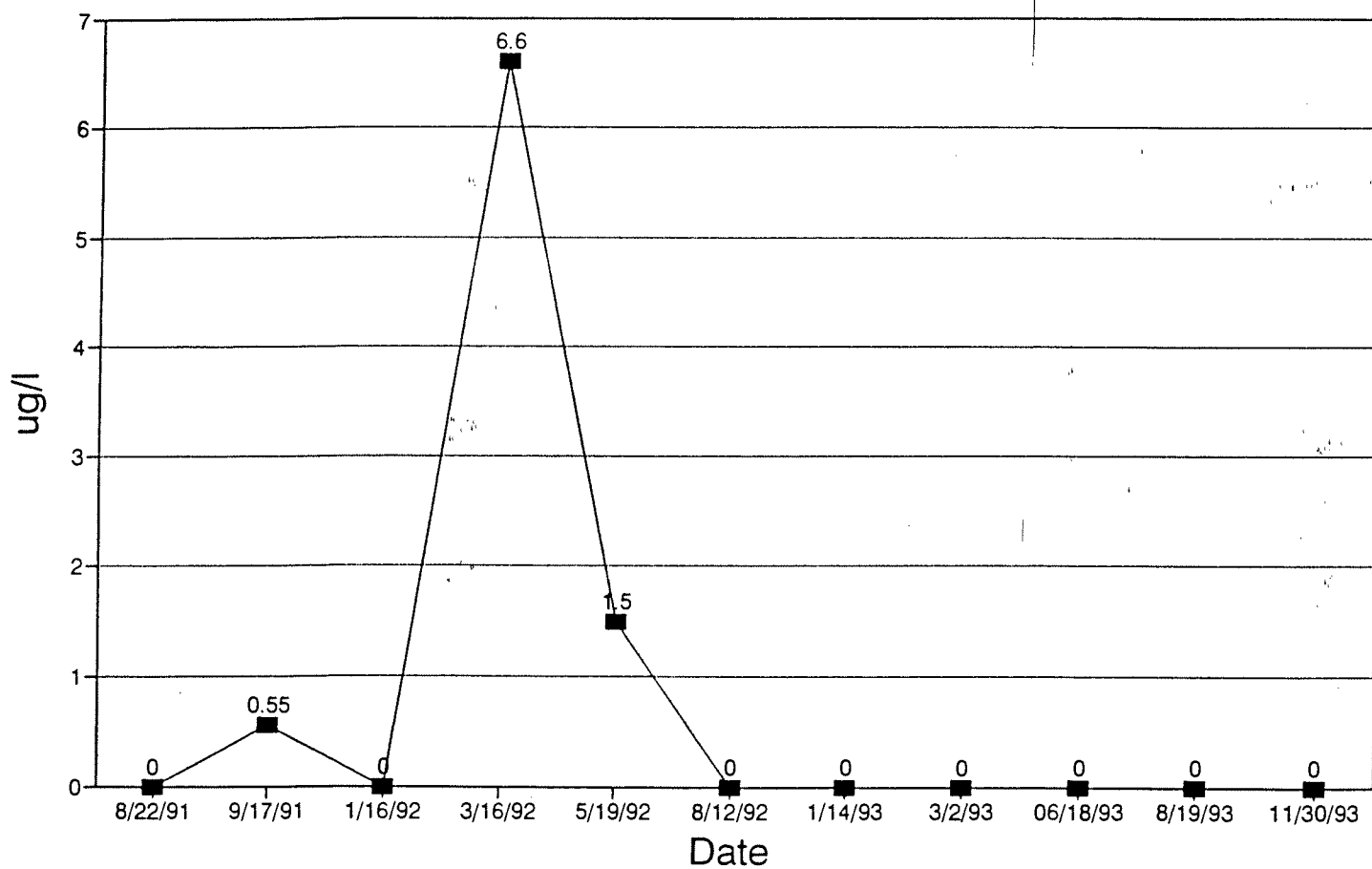


Figure 26
1,1-DCE Concentration in GW-3

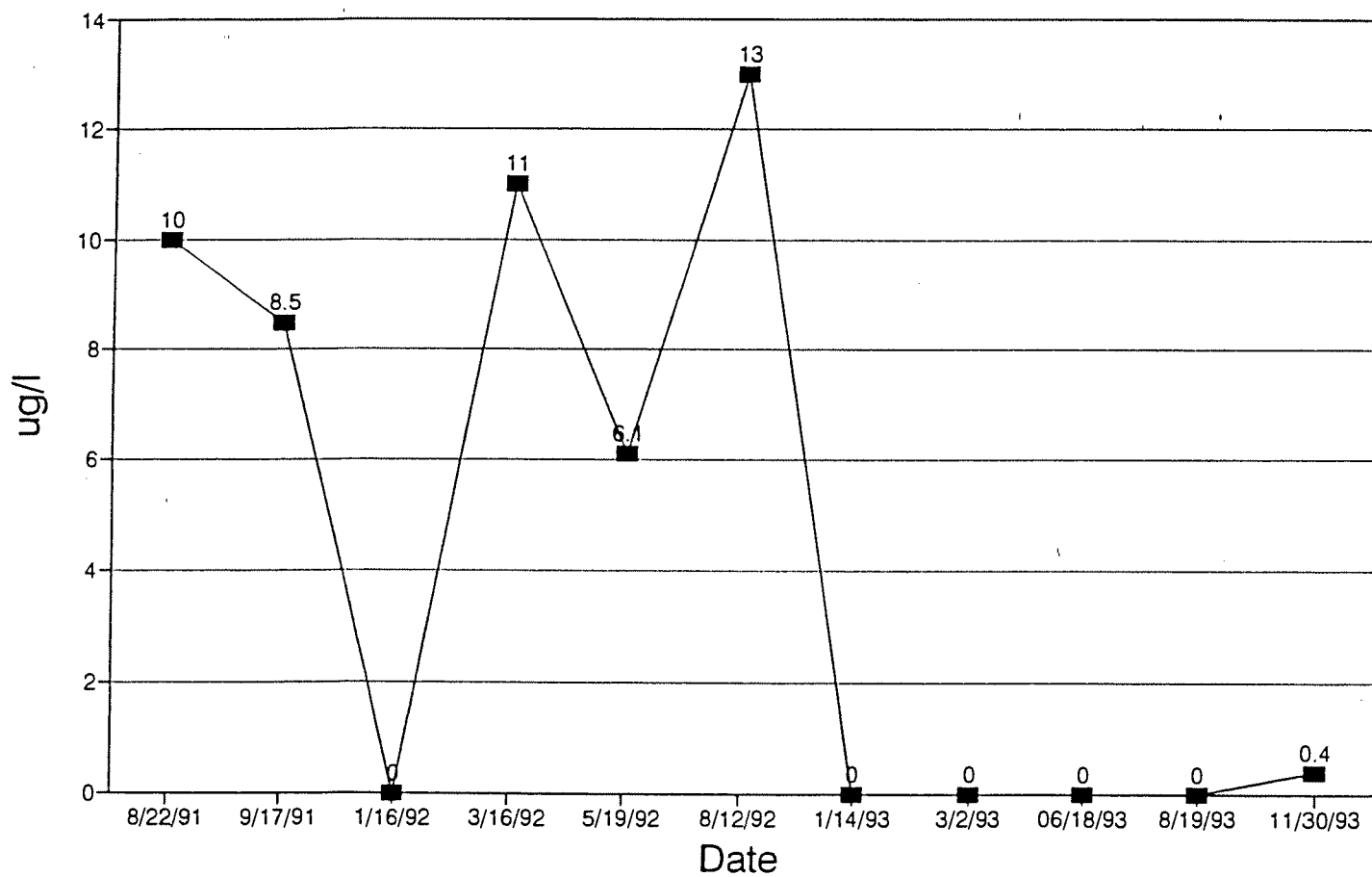


Figure 27
TCE Concentration in GW-3

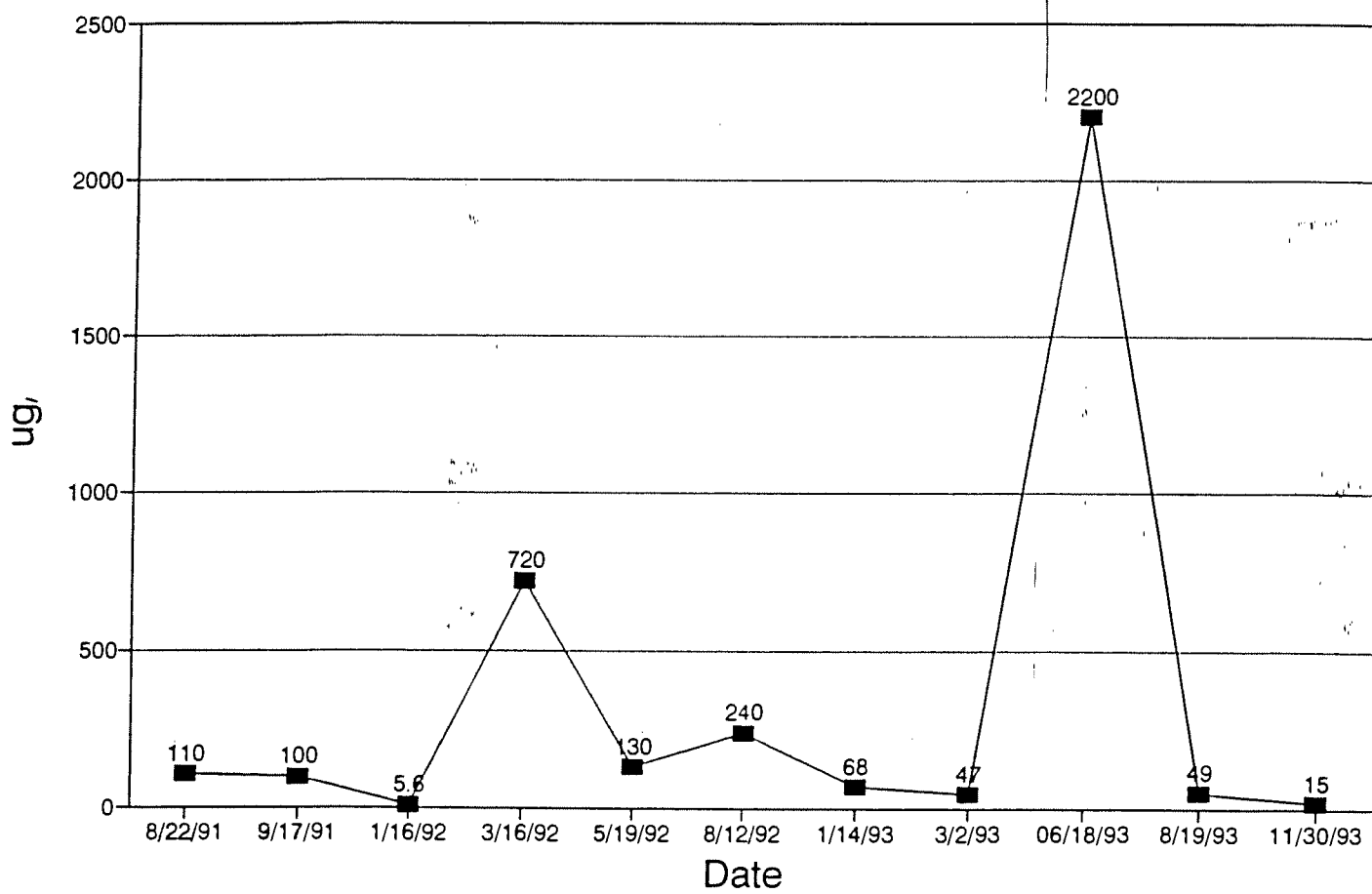


Figure 29
CIS-1,2-DCE Concentration in GW-3

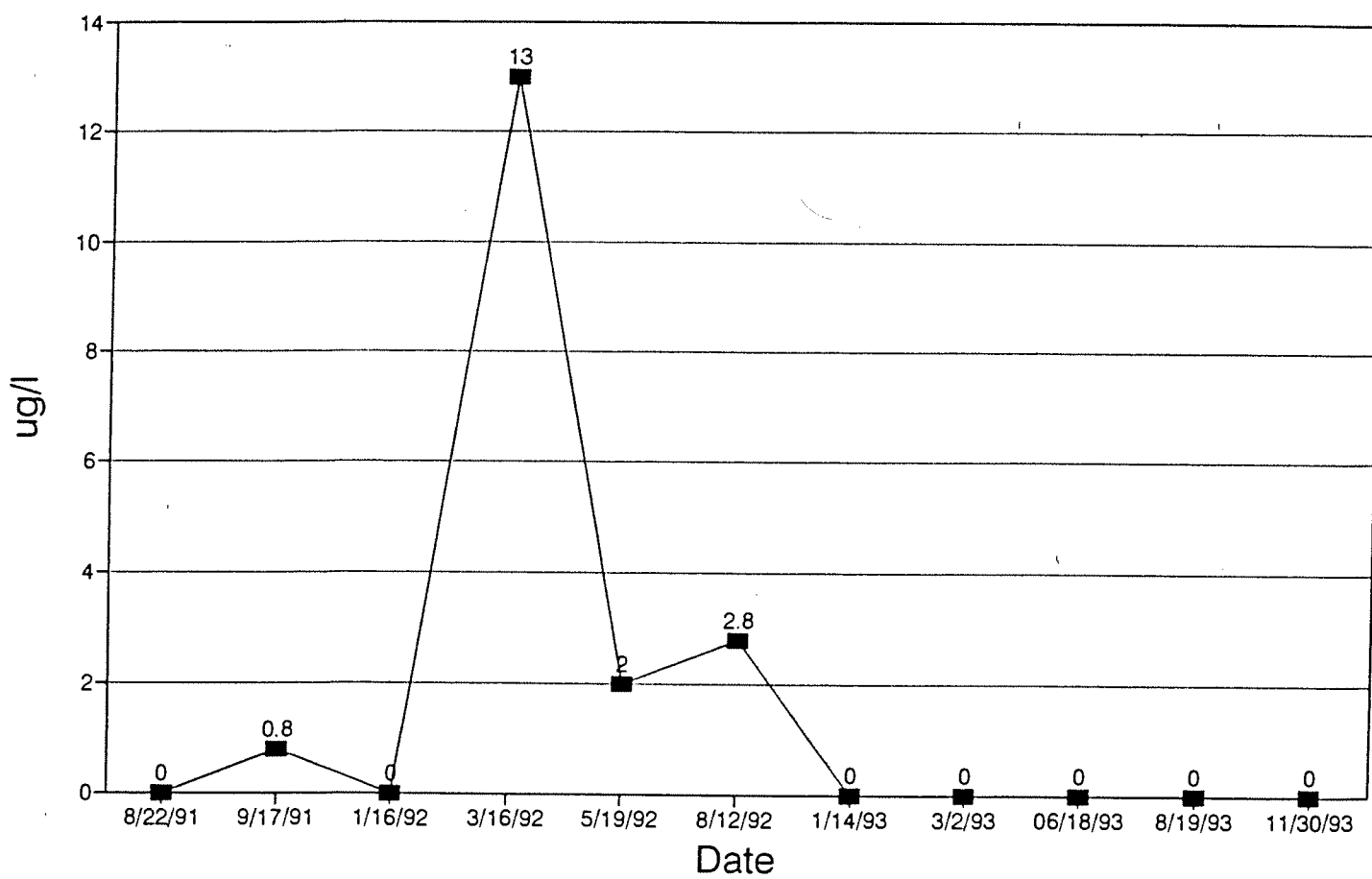


Figure 30
Historic Groundwater Elevation in GW-4

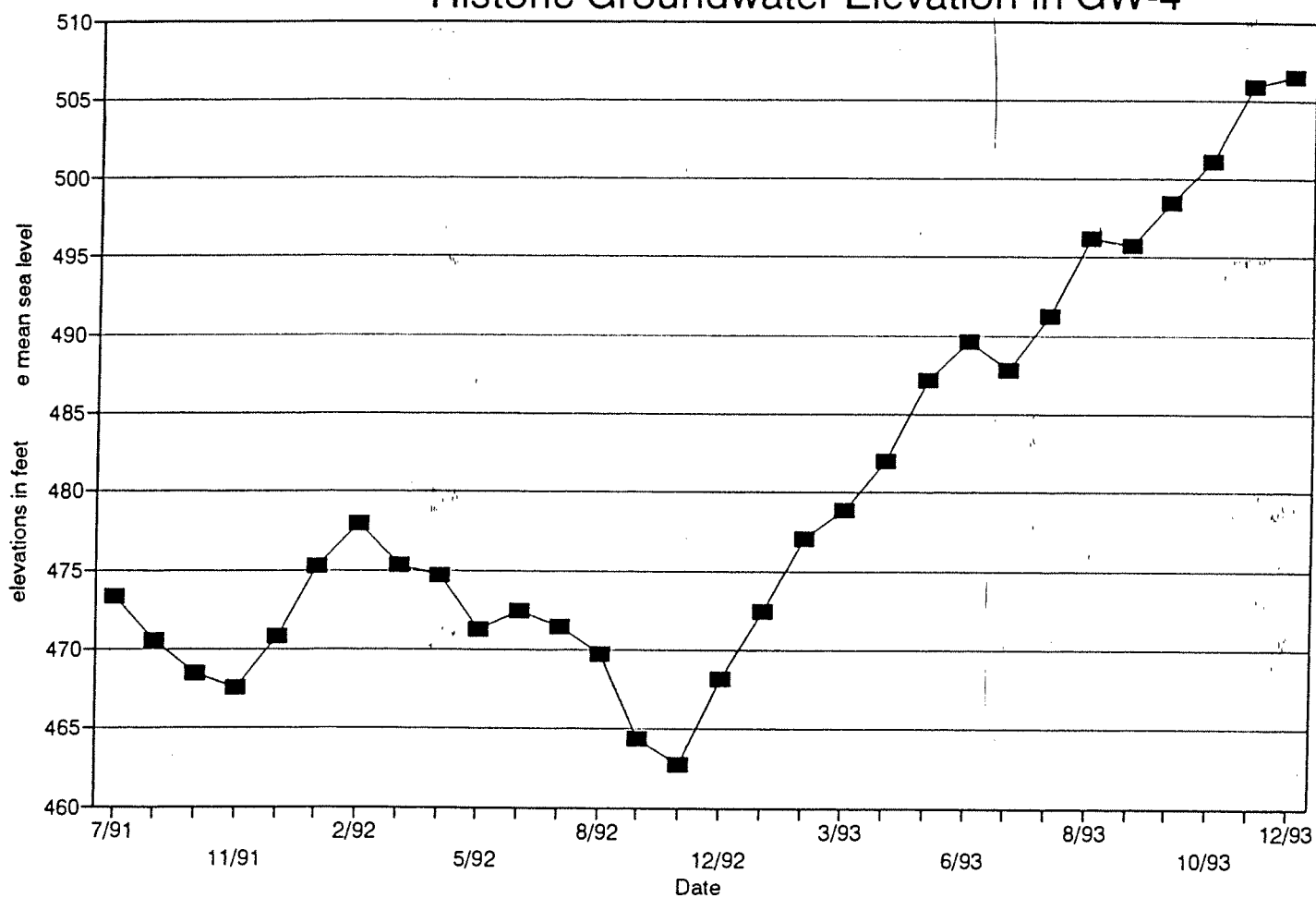


Figure 31
Nitrate Concentration in GW-4

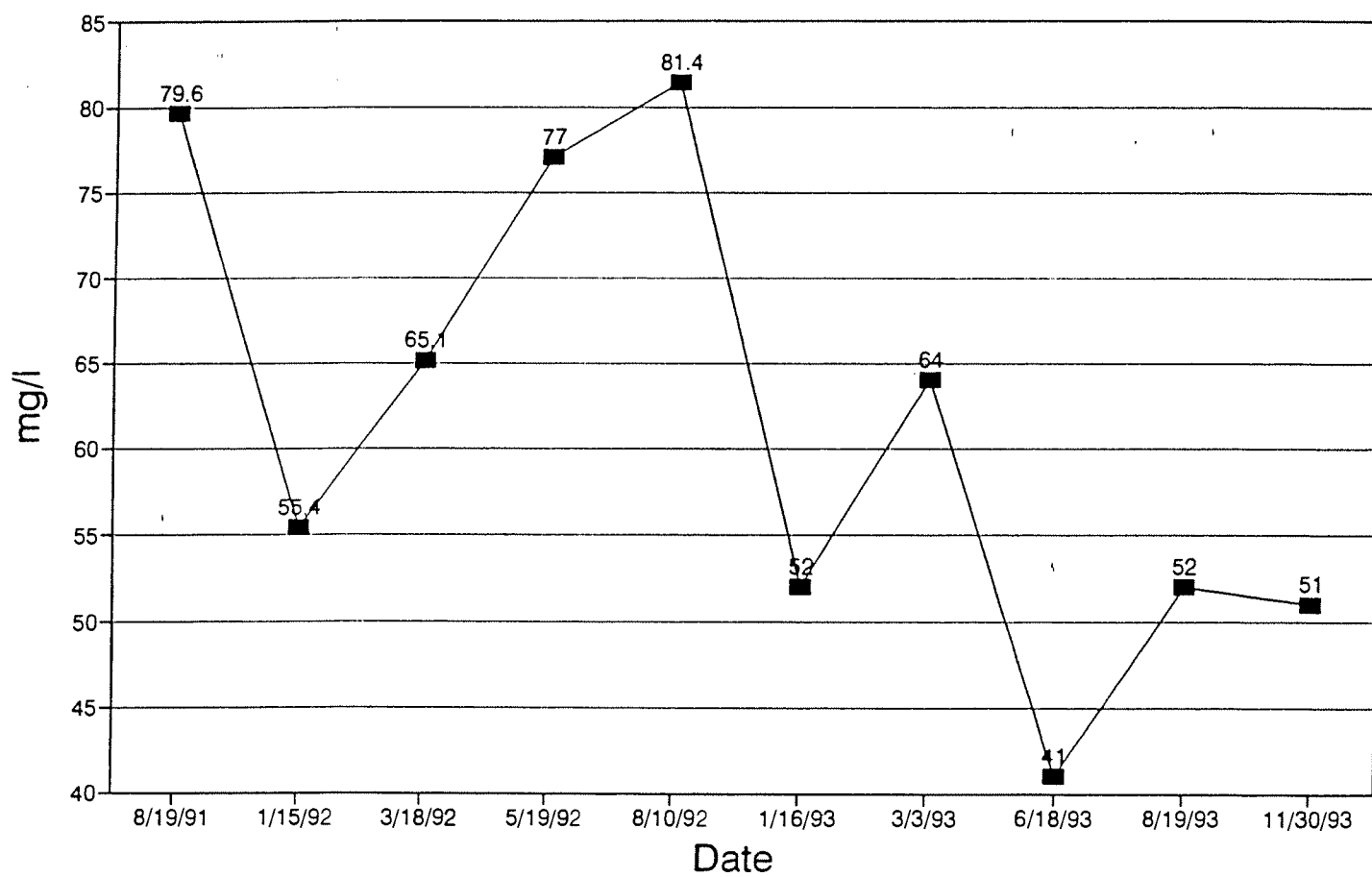


Figure 32
1,1-DCE Concentration in GW-4

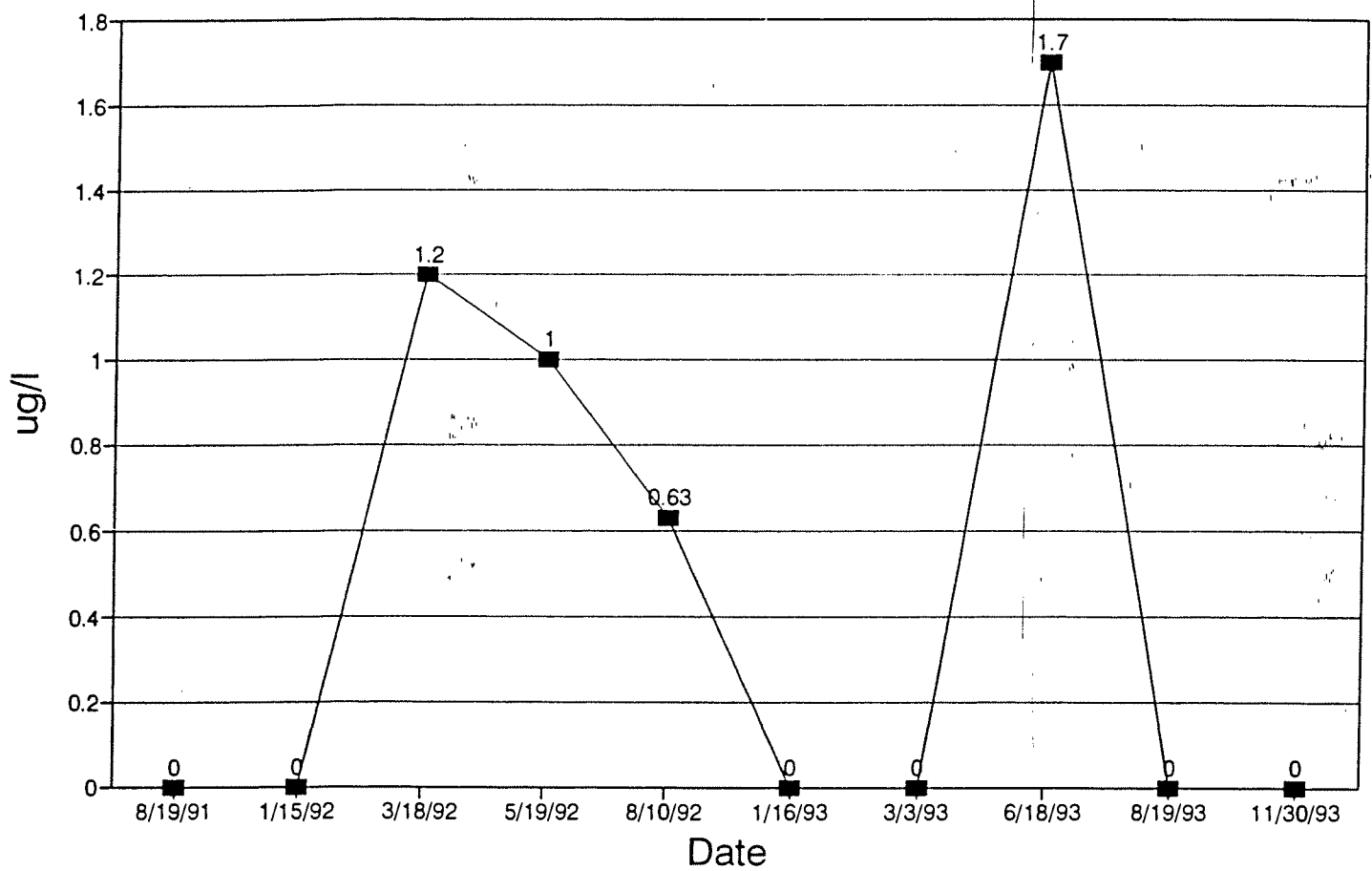


Figure 33
CCL4 Concentration in GW-4

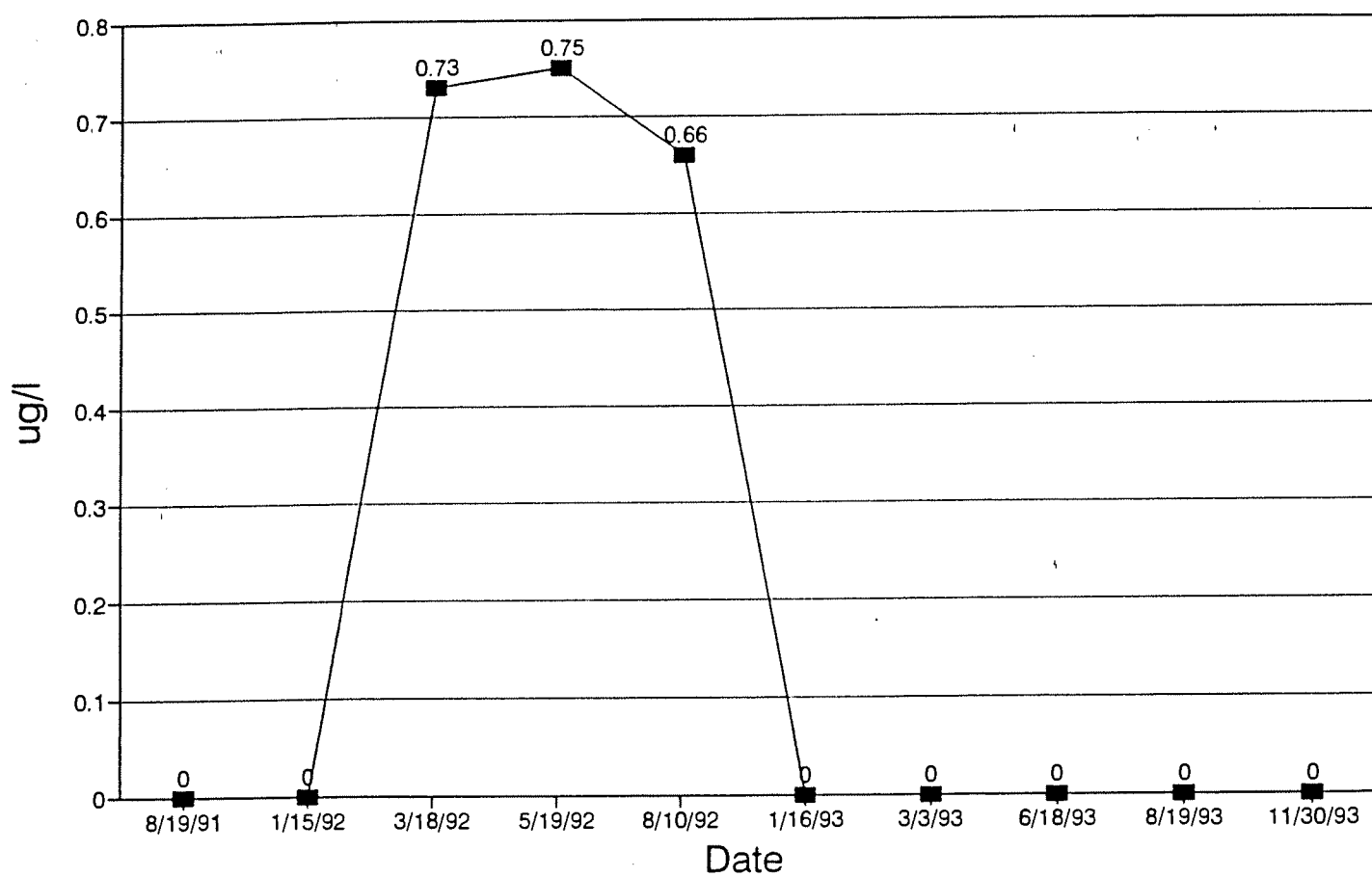


Figure 34
TCE Concentration in GW-4

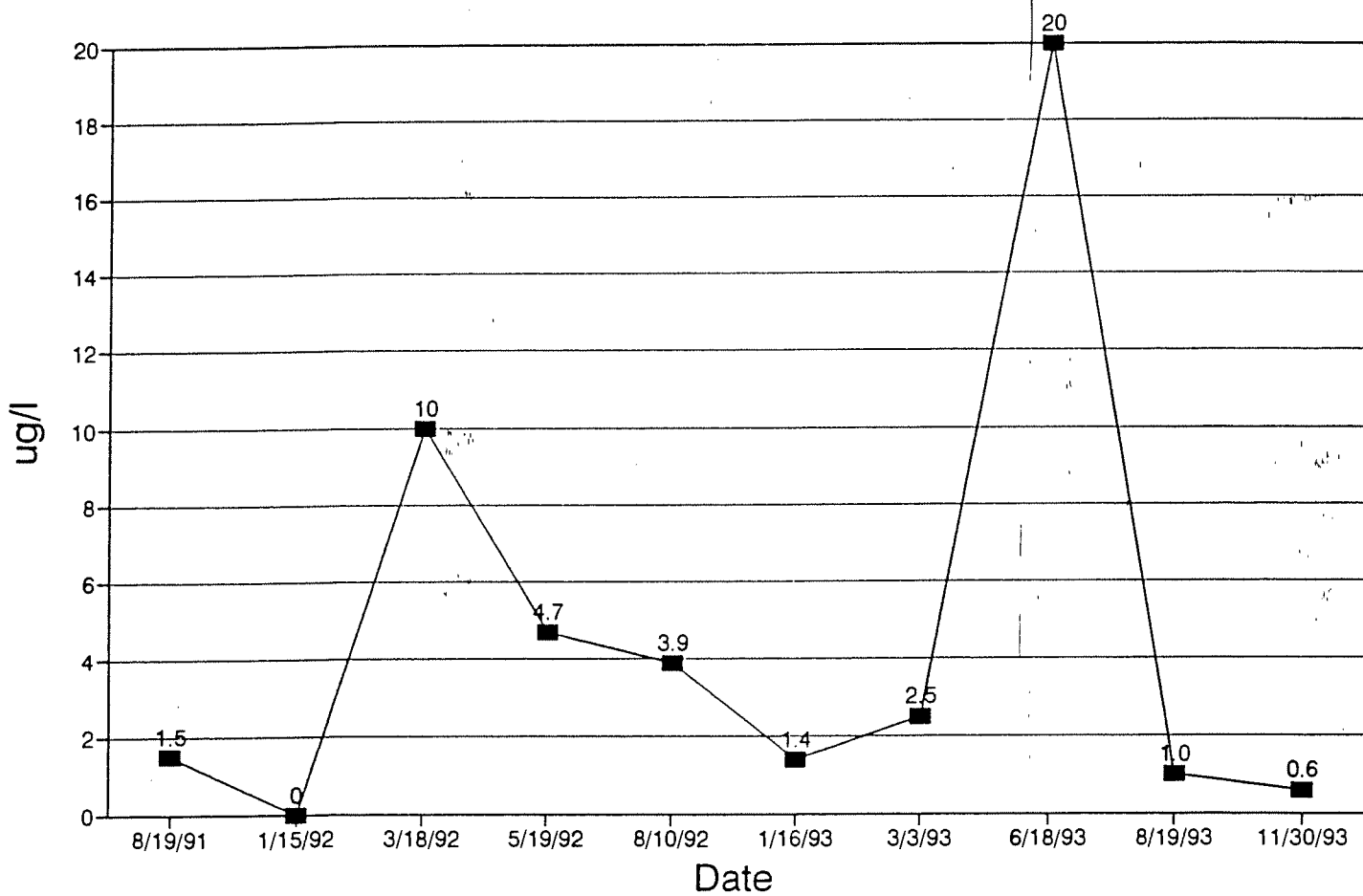


Figure 35
PCE Concentration in GW-4

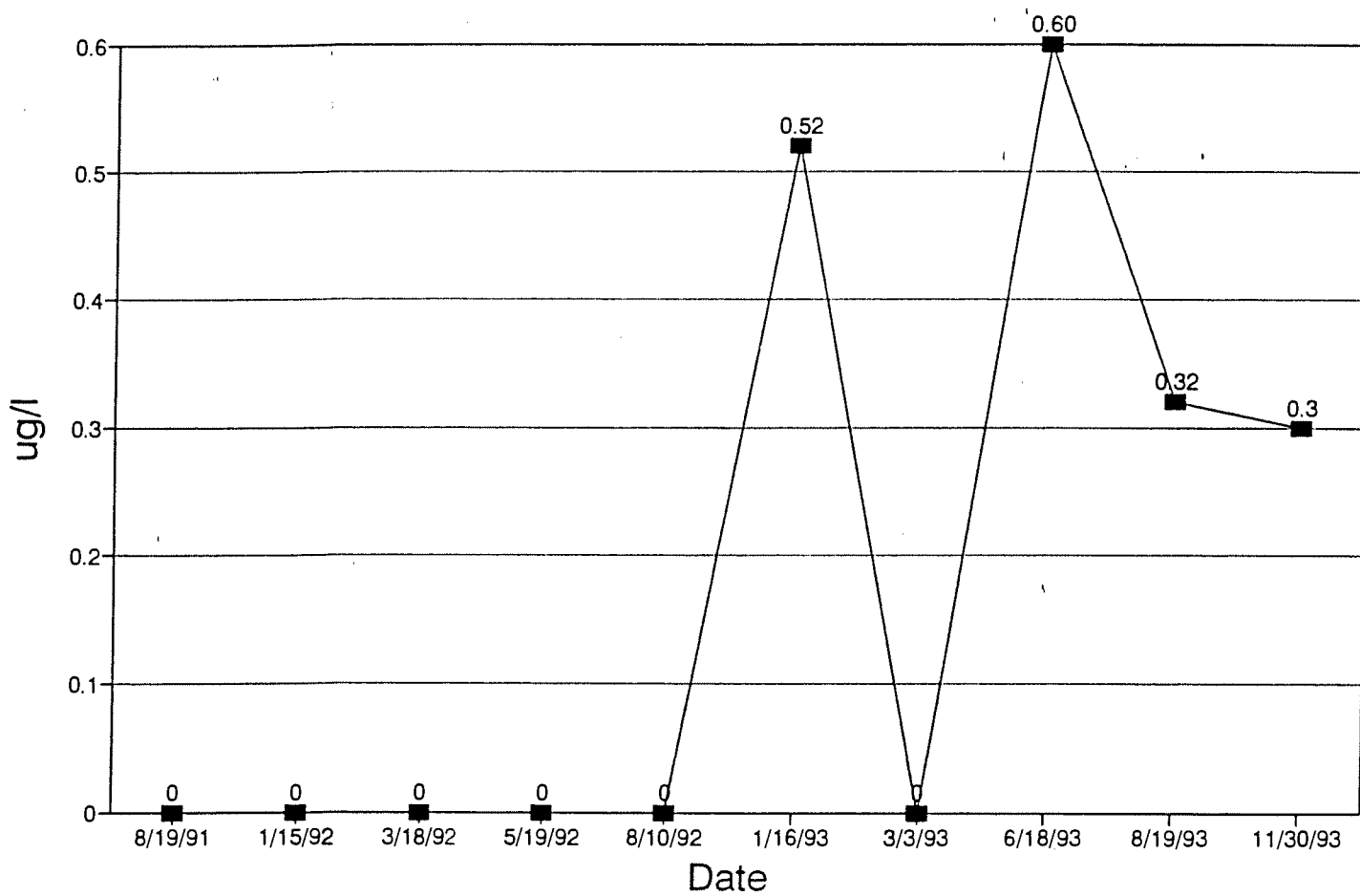


Figure 36
Historic Groundwater Elevation in GW-5

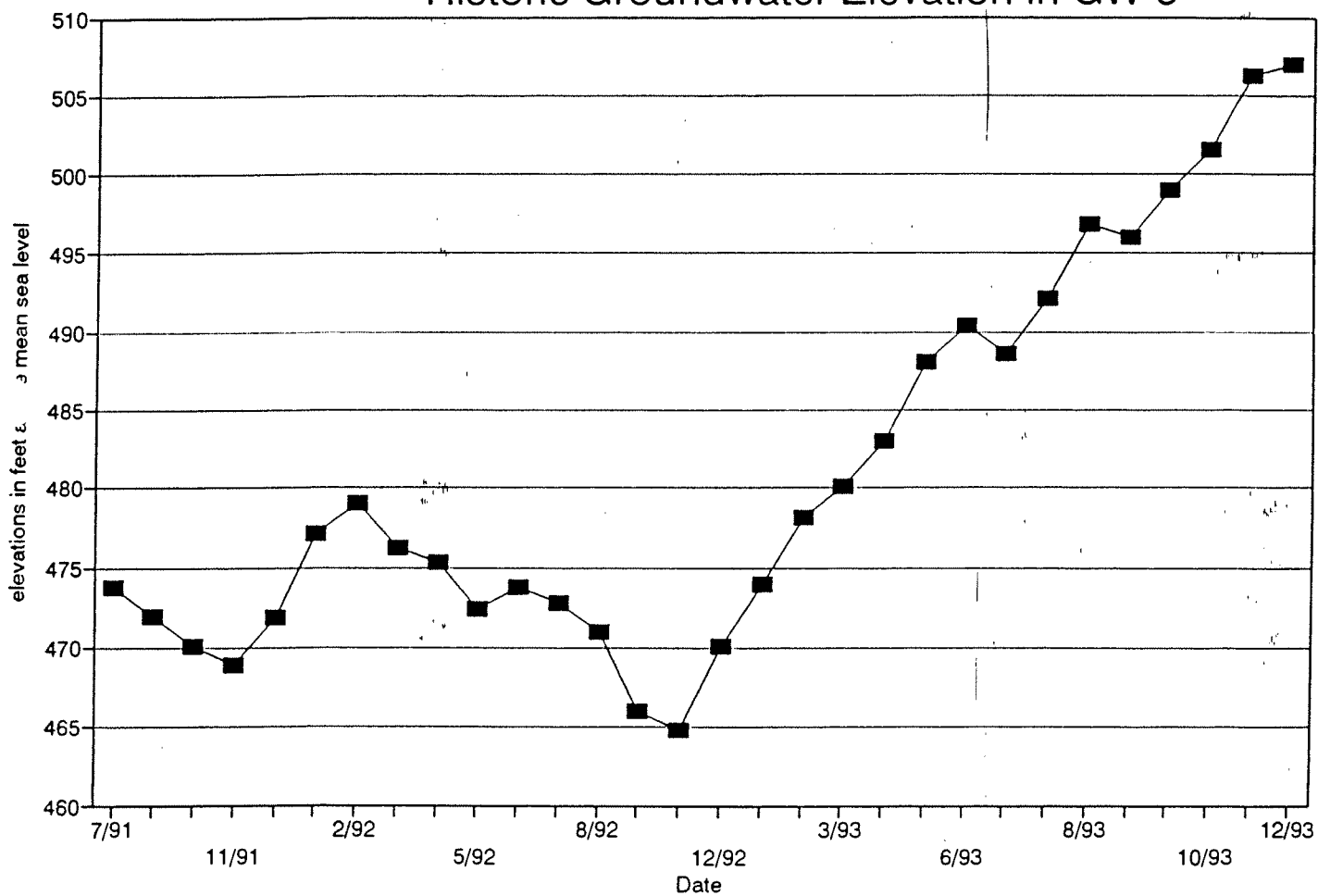


Figure 37
Nitrate Concentration in GW-5

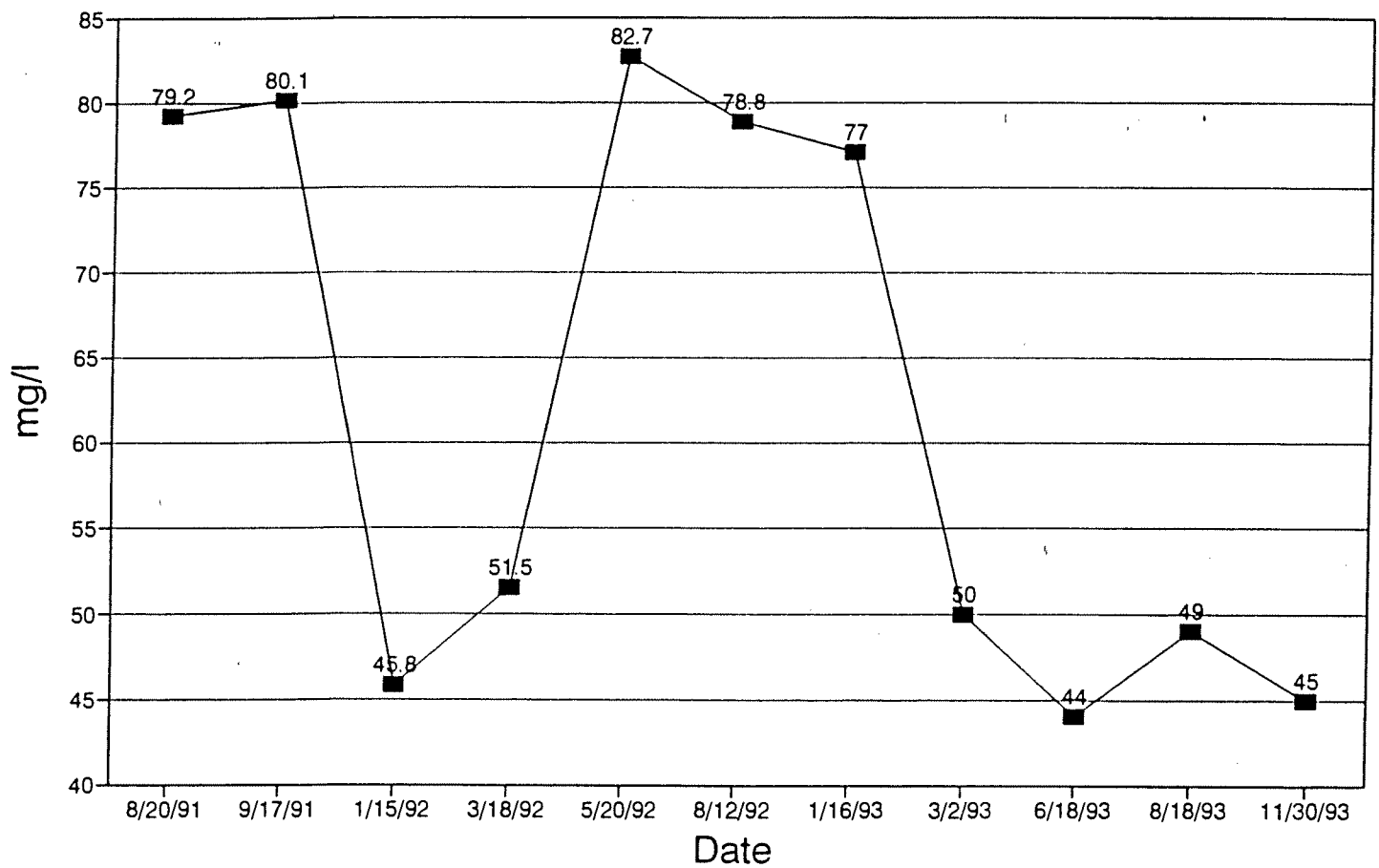


Figure 38
TCE Concentration in GW-5

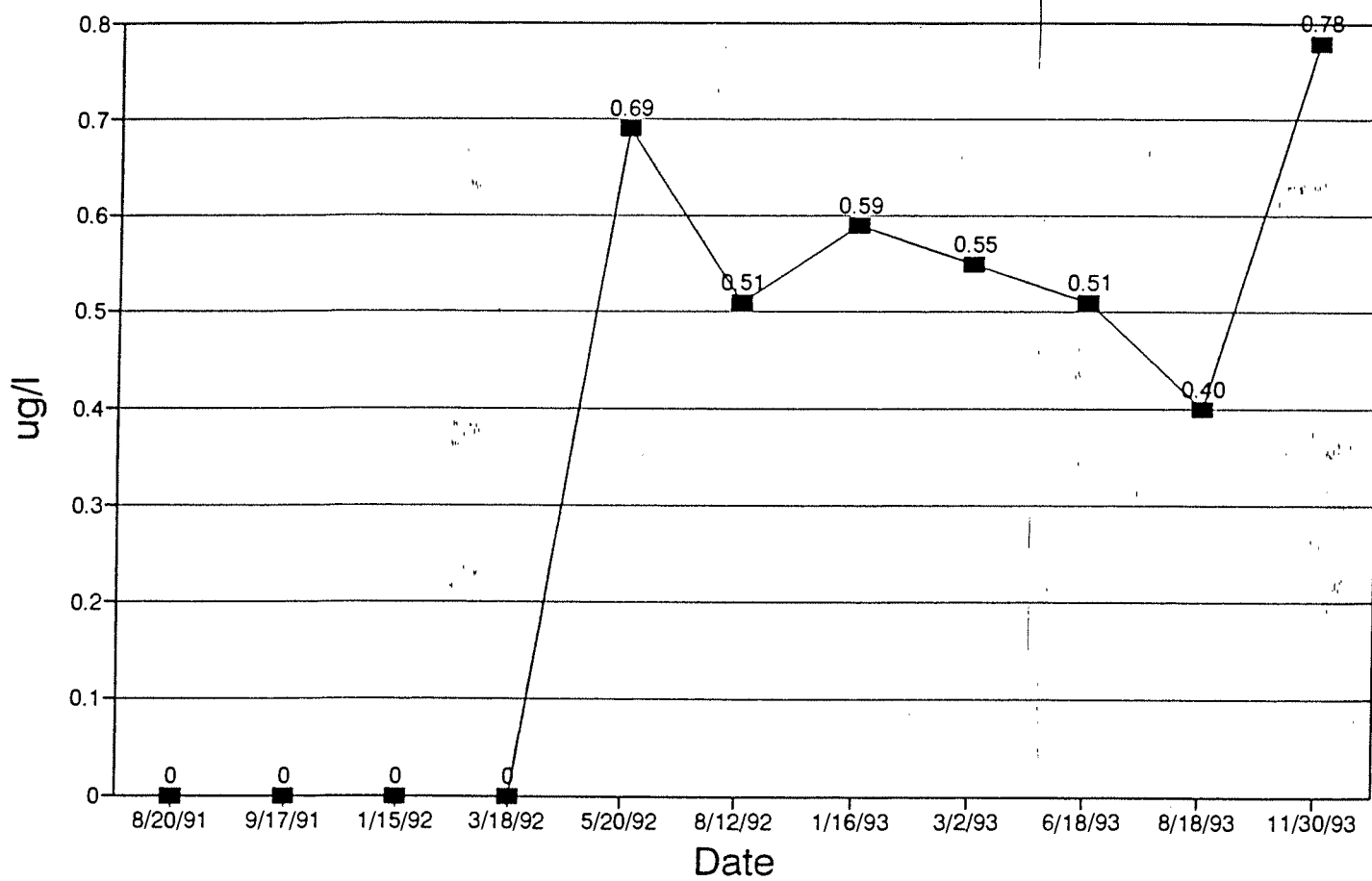


Figure 39
PCE Concentration in GW-5

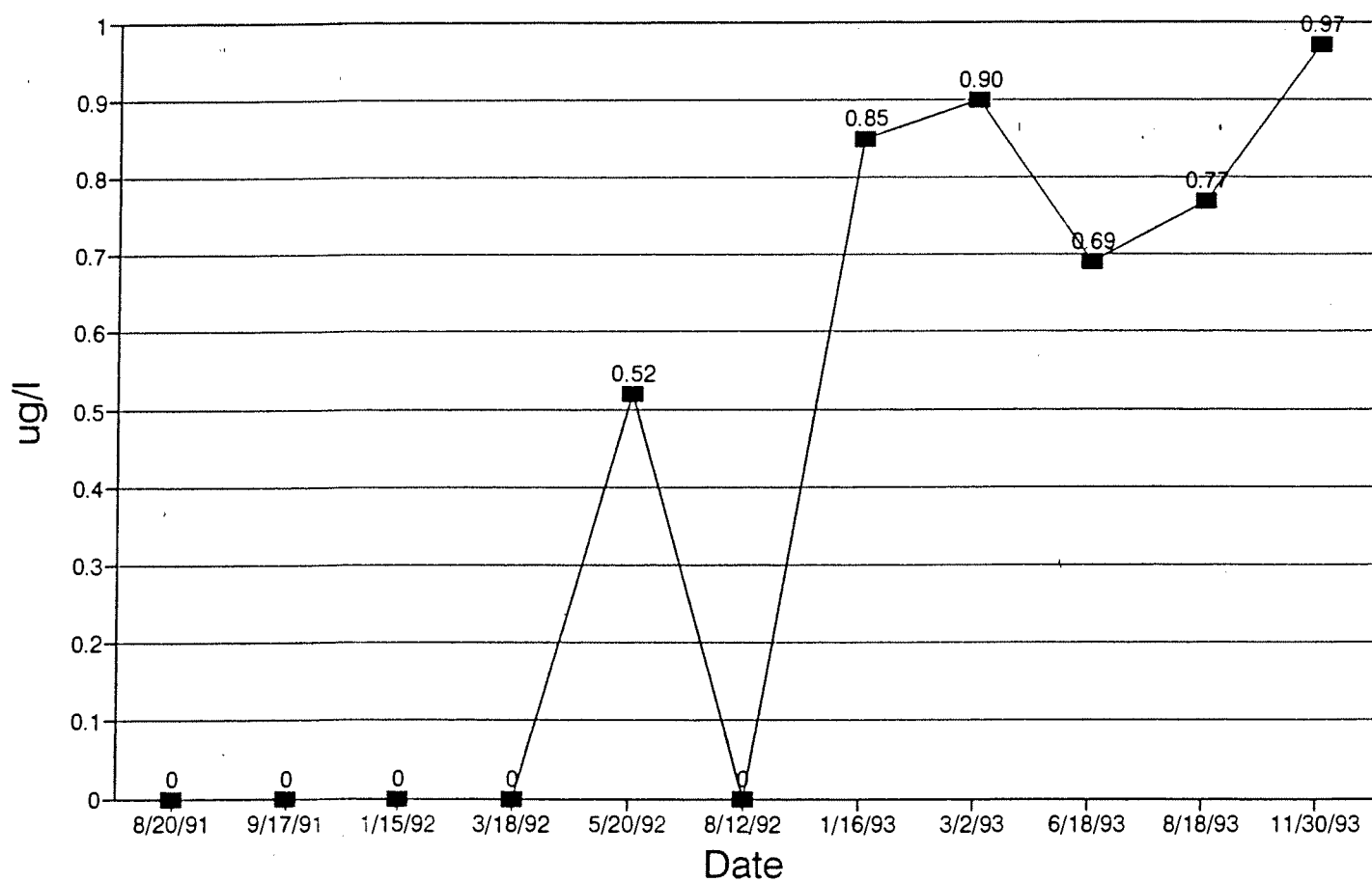


Figure 40
Historic Groundwater Elevation in GW-6

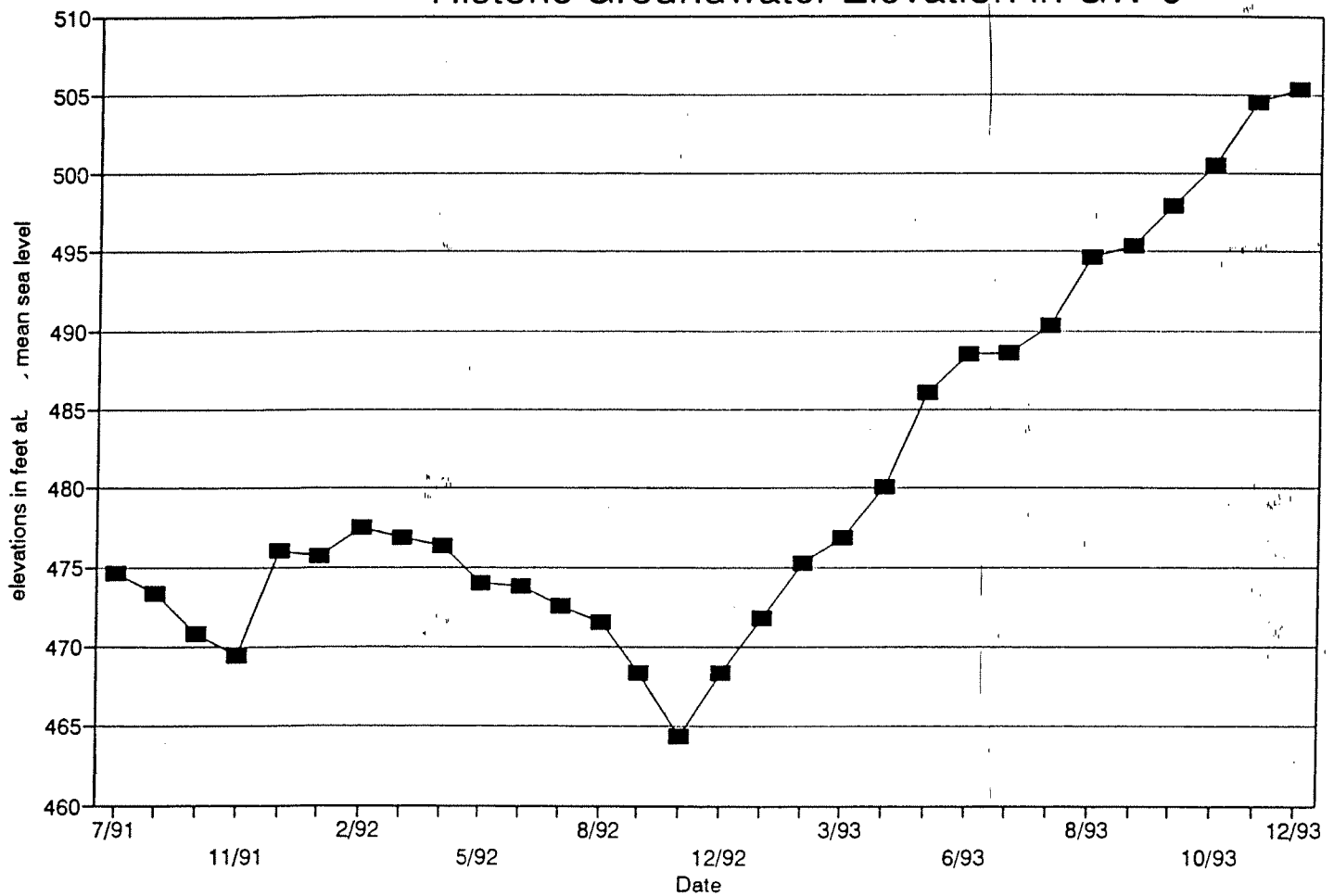


Figure 41
Nitrate Concentration in GW-6

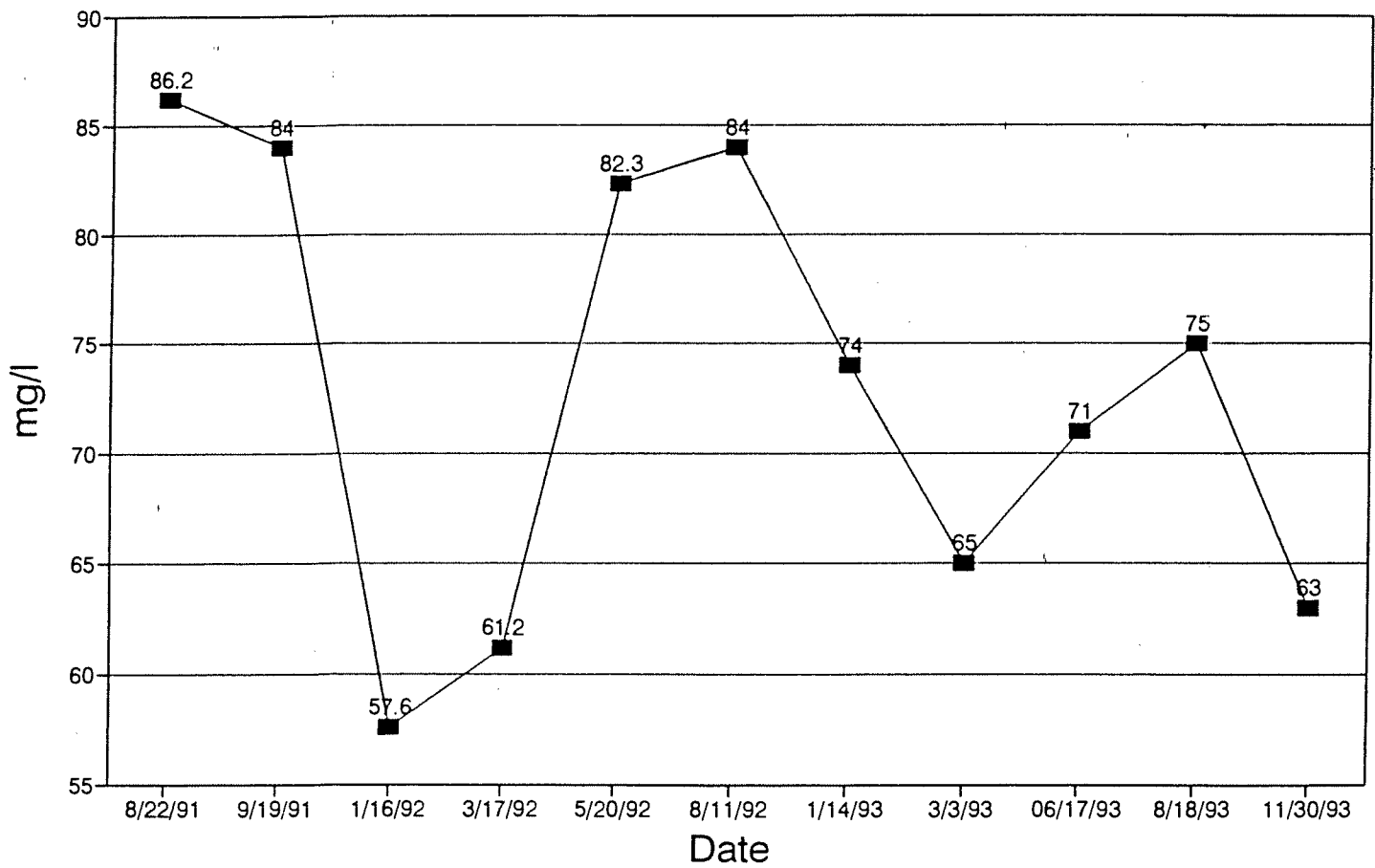


Figure 42
TCE Concentration in GW-6

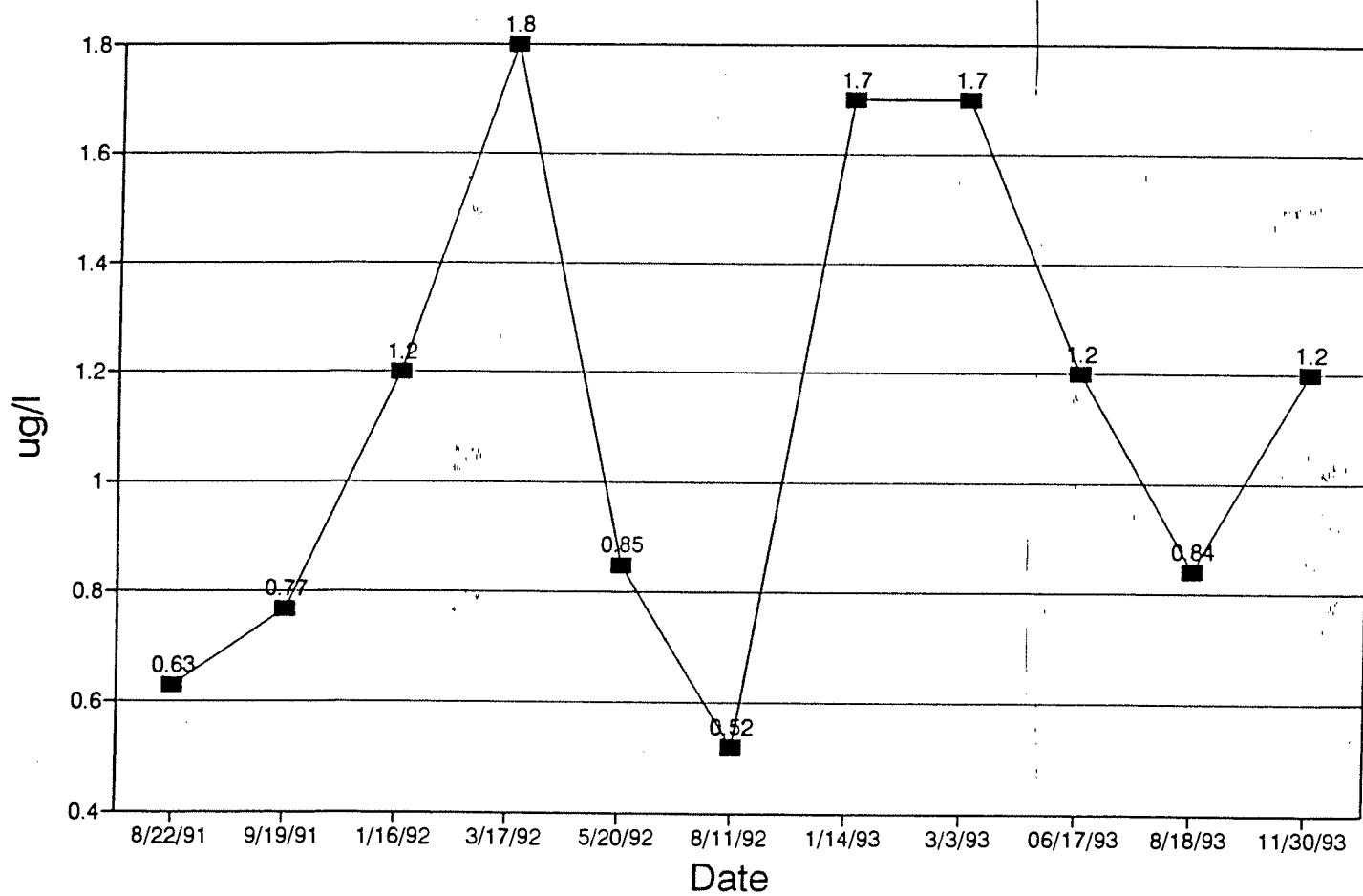


Figure 43
PCE Concentration in GW-6

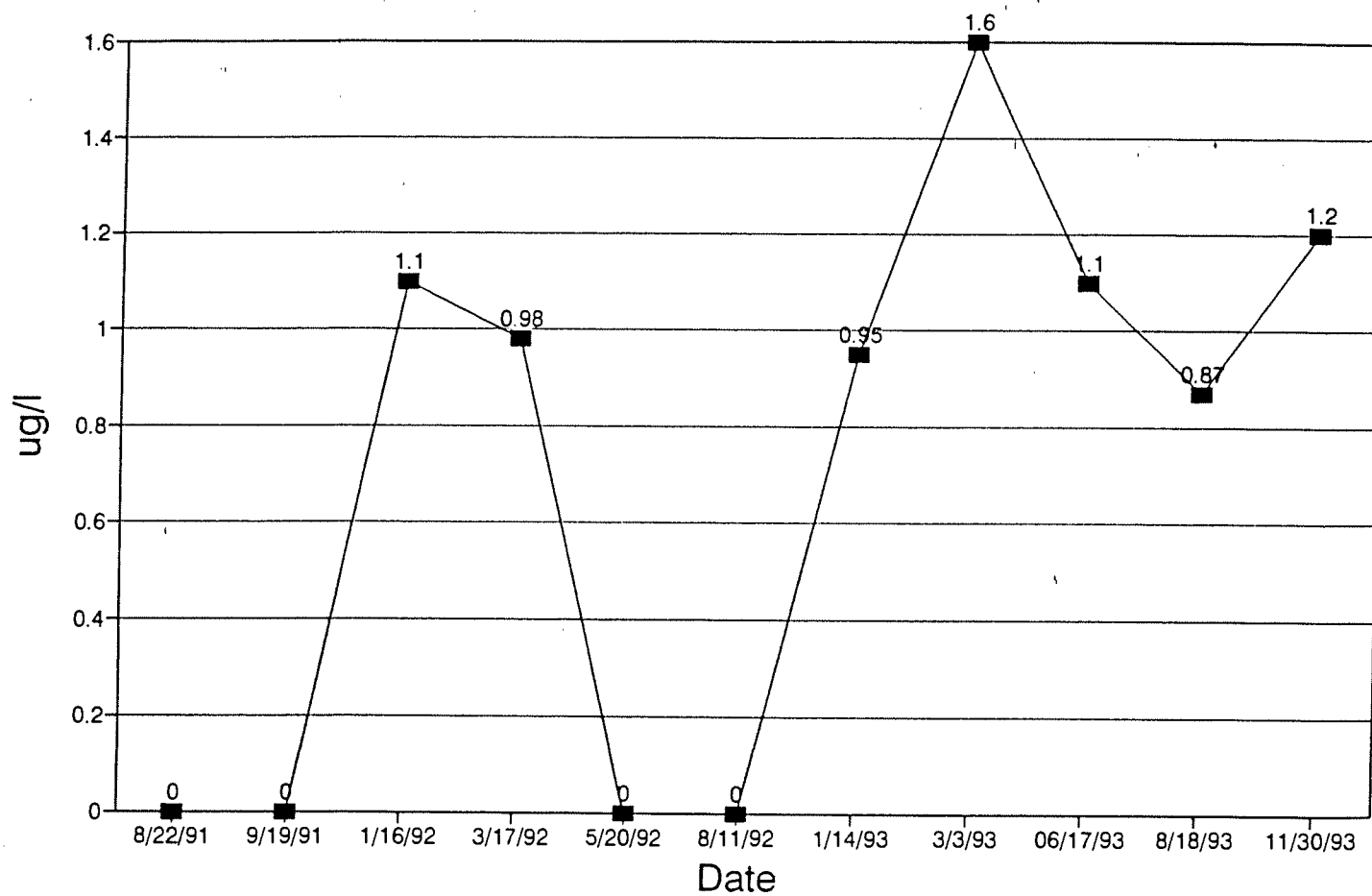
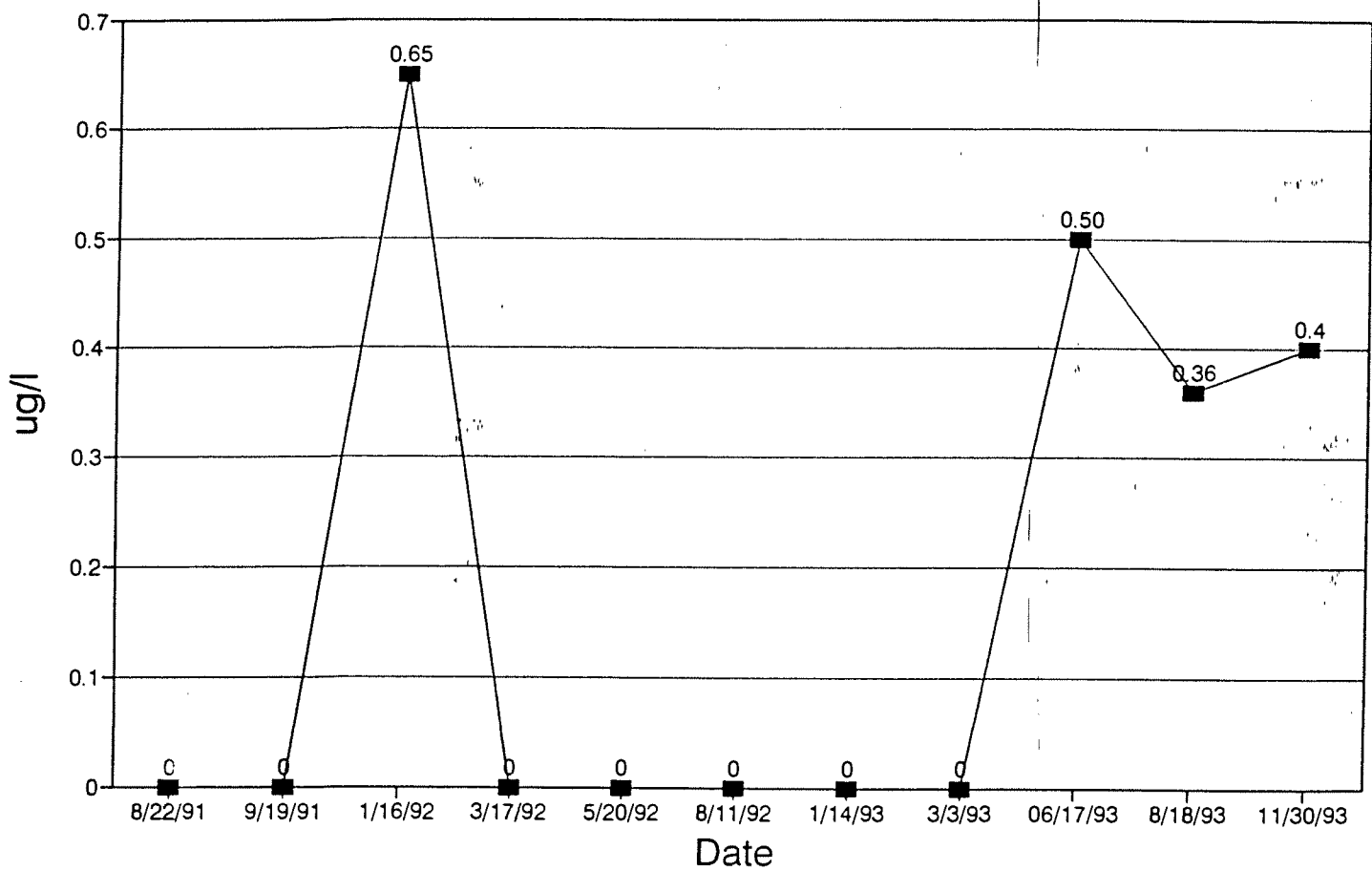
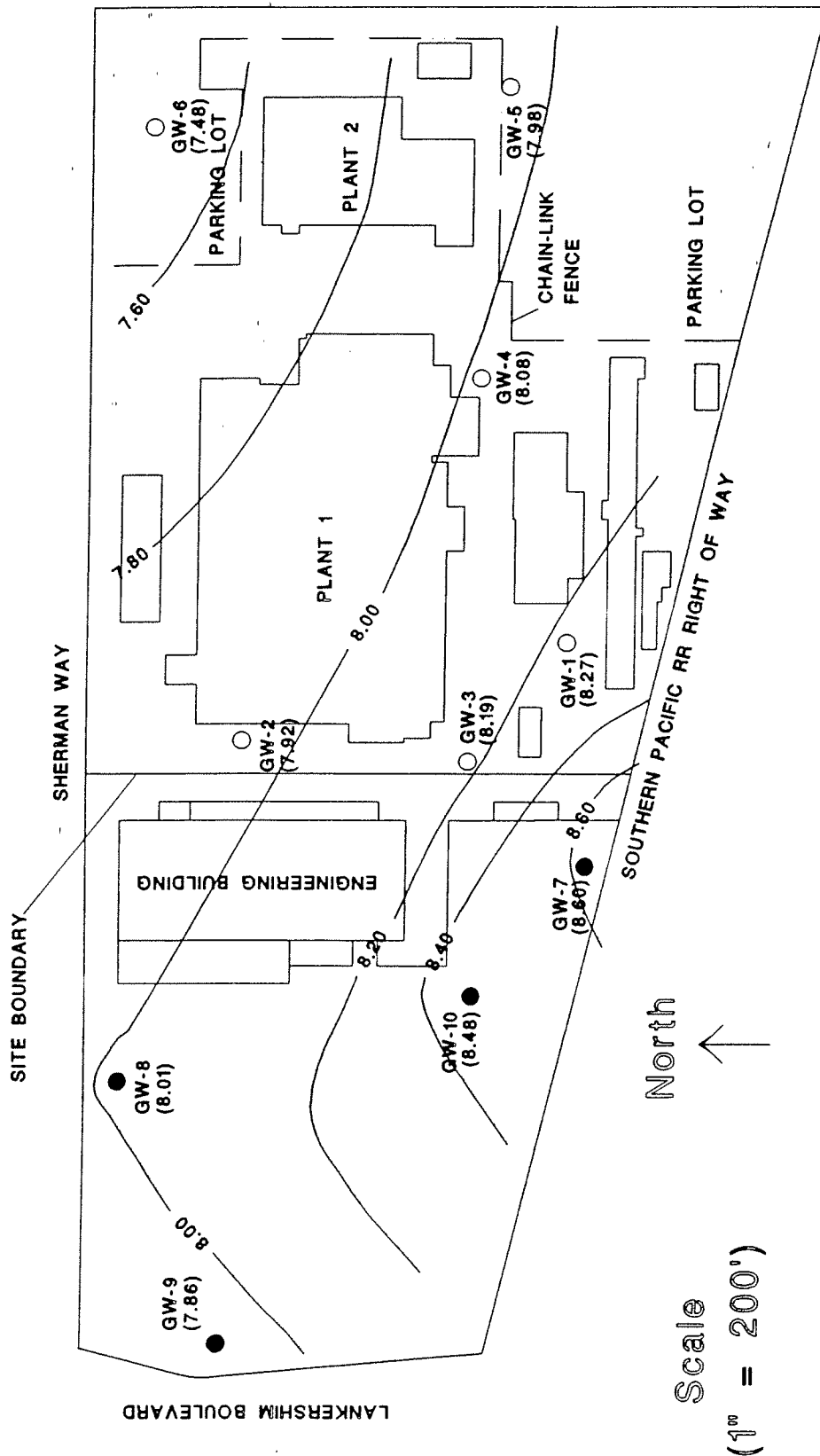


Figure 44
CIS-1,2-DCE Concentration in GW-6





Legend:

- Denotes approximate location of onsite monitoring well.
- Denotes approximate location of offsite monitoring well.
- 8.00 Denotes change in groundwater elevation in feet.
- 8.20 Denotes change in groundwater elevation contour in feet.
- 8.40
- 8.60
- 8.80
- 9.00

**ALLIEDSIGNAL
AEROSPACE COMPANY
North Hollywood Facility**

**WATER LEVEL FLUCTUATION
(4TH QUARTER 1993)**

FIGURE 45

File Name: AS3-A57GECM

SEACOR

APPENDIX A
STANDARD OPERATING PROCEDURES

GROUNDWATER LEVEL MEASUREMENT PROTOCOL

Prior to purging and sampling of groundwater monitoring wells, a Environmental Instruments Company (EI) water level meter was used to measure the depth to the water surface inside each monitoring well. Water level measurements were collected from the wells in the shortest time-frame possible, in order to obtain an accurate representation of the groundwater potentiometric surface. Initially, the meter was lowered down the well until the water surface within the monitoring well was reached. The depth to the water surface was measured from a designated point on the well casing to the nearest 0.01 foot and recorded on a standard *SEACOR* form. This procedure was repeated a second time to confirm the accuracy of the first measurement. The water level meter probe and associated measuring tape were washed in a solution of warm tap water and trisodium phosphate (TSP) and rinsed with de-ionized water prior to, and between monitoring wells to reduce the possibility of cross-contamination.

GROUNDWATER PURGING AND SAMPLING PROTOCOL

The bladder pump intake was set at a depth of approximately 7 feet below static water level in each well. The inflatable packer, located directly beneath the pump intake, was used to isolate the upper 8 to 9 feet of water in the well during sampling. An average pumping rate of 1,800 milliliters per minute (ml/min) was used to purge approximately 3 to 5 well casing volumes of stagnant water from each well prior to sampling. Measurements of pH, temperature, and electric conductivity were taken during purging and recorded on a standard *SEACOR* form. Once these physical parameters stabilized, this was an indication that water in the monitoring well was representative of water from the formation, and a groundwater sample was collected. During sample collection, the pumping rate was lowered to approximately 100 ml/min.

APPENDIX B
LABORATORY RESULTS

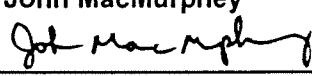
**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

LABORATORY REPORT FORM

Laboratory Name: **ZymaX envirotechnology, Inc.**
Address: **71 Zaca Lane, Suite 110**
Telephone: **(805) 544-4696**

Laboratory Certification (ELAP) No.: **1717** Expiration Date: **01/31/94**

Laboratory Director's Name: **John MacMurphey**

Laboratory Director's Signature: 

Client: **Seacor Environmental Engineering**
Project No.: **A0057-001-02**
Analytical Method: **EPA 524.2**

Date Sampled: **11/29/93**
Date Received: **11/29/93**
Date Reported: **12/01/93**

Sample Matrix: **GW**
Extraction Method: **EPA 5030 (Purge and Trap)**
Extraction Material: **Helium**

Chain of Custody Received: ☒ **Yes** ☐ **No**

Sample Condition:

Sample Headspace Description (%): **Less Than 1%**
Sample Container Material: **Glass**

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ANALYTICAL TEST RESULT

Reporting Unit: ug/L

COMPOUND	DATE ANALYZED		11/30/93	11/30/93	11/30/93	11/30/93
	DATE EXTRACTED		11/30/93	11/30/93	11/30/93	11/30/93
	DILUTION FACTOR		1	1	1	1
	LAB SAMPLE ID		2904-1	2904-2	2904-3	2904-4
	CLIENT SAMPLE ID		GW-7	GW-8	GW-9	GW-10
MDL	MB					
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane (TCA)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloropropene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane (EDC)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3,5-Trimethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5	<0.5	0.6	<0.5	<0.5
cis-1,3-Dichloropropene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Freon 113 (Trichlorotrifluoroethane)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

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943 South 48th St., Suite 114, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

Seacor
3485 Sacramento Drive, Suite A
San Luis Obispo, CA 93401
Attention: Greg Vogelpohl

Client Project ID: A0057-001-02
Allied Signal
Sample Descript: Water, GW-7 (MW-1)
Lab Number: CK03091

Sampled: Nov 29, 1993
Received: Nov 29, 1993
Analyzed: 11/30-12/1, 1993
Reported: Dec 1, 1993

GENERAL MINERAL ANALYSIS

Analyte	Detection Limit		Sample Result	
	mg/L (ppm)		mg/L (ppm)	
Bicarbonate Alkalinity.....	2.0	.....	190	.....
Calcium.....	2.0	.....	72	.....
Carbonate Alkalinity.....	2.0	.....	N.D.	.....
Chloride.....	5.0	.....	27	.....
Hydroxide Alkalinity.....	2.0	.....	N.D.	.....
Magnesium.....	0.050	.....	18	.....
Sodium.....	0.50	.....	26	.....
Sulfate.....	2.5	.....	53	.....
Total Dissolved Solids.....	5.0	.....	860	.....

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Kenn Martin

Gary Steube
Laboratory Director

CK03091.SEA <1 of 8>

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Seacor
3485 Sacramento Drive, Suite A
San Luis Obispo, CA 93401
Attention: Greg Vogelpohl

Client Project ID: A0057-001-02

Allied Signal

Sample Descript: Water, GW-10 (MW-4)

Lab Number: CK03092

Sampled: Nov 29, 1993

Received: Nov 29, 1993

Analyzed: 11/30-12/1, 1993

Reported: Dec 1, 1993

GENERAL MINERAL ANALYSIS

Analyte	Detection Limit mg/L (ppm)	Sample Result mg/L (ppm)
Bicarbonate Alkalinity.....	2.0	200
Calcium.....	2.0	68
Carbonate Alkalinity.....	2.0	N.D.
Chloride.....	2.5	20
Hydroxide Alkalinity.....	2.0	N.D.
Magnesium.....	0.050	17
Sodium.....	0.50	26
Sulfate.....	2.5	58
Total Dissolved Solids.....	5.0	360

Analytes reported as N.D. were not present above the stated limit of detection.

EL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

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CK03091.SEA <2 of 8>



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Seacor
3485 Sacramento Drive, Suite A
San Luis Obispo, CA 93401
Attention: Greg Vogelpohl

Client Project ID: A0057-001-02
Allied Signal
Sample Descript: Water, GW-9 (MW-3)
Lab Number: CK03093

Sampled: Nov 29, 1993
Received: Nov 29, 1993
Analyzed: 11/30-12/1, 1993
Reported: Dec 1, 1993

GENERAL MINERAL ANALYSIS

Analyte	Detection Limit mg/L (ppm)	Sample Result mg/L (ppm)
Bicarbonate Alkalinity.....	2.0	190
Calcium.....	2.0	64
Carbonate Alkalinity.....	2.0	N.D.
Chloride.....	2.5	21
Hydroxide Alkalinity.....	2.0	N.D.
Magnesium.....	0.050	17
Sodium.....	0.50	25
Sulfate.....	2.5	59
Total Dissolved Solids.....	5.0	420

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Gary Steube
Laboratory Director

004536

CK03091.SEA <3 of 8>



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Seacor
3485 Sacramento Drive, Suite A
San Luis Obispo, CA 93401
Attention: Greg Vogelpohl

Client Project ID: A0057-001-02
Allied Signal
Sample Descript: Water, GW-8 (MW-2)
Lab Number: CK03094

Sampled: Nov 29, 1993
Received: Nov 29, 1993
Analyzed: 11/30-12/1, 1993
Reported: Dec 1, 1993

GENERAL MINERAL ANALYSIS

Analyte	Detection Limit mg/L (ppm)	Sample Result mg/L (ppm)
Bicarbonate Alkalinity.....	2.0	240
Calcium.....	2.0	92
Carbonate Alkalinity.....	2.0	N.D.
Chloride.....	5.0	35
Hydroxide Alkalinity.....	2.0	N.D.
Magnesium.....	0.050	23
Sodium.....	0.50	28
Sulfate.....	2.5	56
Total Dissolved Solids.....	5.0	510

Analytes reported as N.D. were not present above the stated limit of detection.

EL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube

Gary Steube
Laboratory Director

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CK03091.SEA <4 of 8>



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Seacor
3485 Sacramento Drive, Suite A
San Luis Obispo, CA 93401
Attention: Greg Vogelpohl

Client Project ID: A0057-001-02
Allied Signal
Sample Descript: Water, GW-7 (MW-1)
Lab Number: CK03091

Sampled: Nov 29, 1993
Received: Nov 29, 1993
Analyzed: 11/30-12/1, 1993
Reported: Dec 1, 1993

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Result mg/L (ppm)
Ammonia-N.....	350.3	1.0	N.D.
Nitrate-NO3.....	300	2.5	49
Nitrite-NO2.....	300	1.0	N.D.
Potassium.....	6010	0.50	3.7
Total Alkalinity-CaCO3.....	310.1	2.0	190
Turbidity (NTU).....	180.1	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

EL MAR ANALYTICAL, IRVINE (ELAP #1197)

Kim Mantel for
Gary Steube
Laboratory Director

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CK03091.SEA <5 of 8>



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Seacor

3485 Sacramento Drive, Suite A

San Luis Obispo, CA 93401

Attention: Greg Vogelpohl

Client Project ID: A0057-001-02

Allied Signal

Sample Descript: Water, GW-10 (MW-4)

Lab Number: CK03092

Sampled: Nov 29, 1993

Received: Nov 29, 1993

Analyzed: 11/30-12/1, 1993

Reported: Dec 1, 1993

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Result mg/L (ppm)
Ammonia-N.....	350.3	1.0	N.D.
Nitrate-NO3.....	300	1.0	25
Nitrite-NO2.....	300	1.0	N.D.
Potassium.....	6010	0.50	3.6
Total Alkalinity-CaCO3.....	310.1	2.0	200
Turbidity (NTU).....	180.1	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Kim Mantel for
Gary Steube
Laboratory Director

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CK03091.SEA <6 of 8>



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943 South 48th St., Suite 114, Tempe, AZ 85281

(602) 968-8272 FAX (602) 968-1338

Seacor

3485 Sacramento Drive, Suite A

San Luis Obispo, CA 93401

Attention: Greg Vogelpohl

Client Project ID: A0057-001-02

Allied Signal

Sample Descript: Water, GW-9 (MW-3)

Lab Number: CK03093

Sampled: Nov 29, 1993

Received: Nov 29, 1993

Analyzed: 11/30-12/1, 1993

Reported: Dec 1, 1993

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Result mg/L (ppm)
Ammonia-N.....	350.3	1.0	N.D.
Nitrate-NO3.....	300	1.0	30
Nitrite-NO2.....	300	1.0	N.D.
Potassium.....	6010	0.50	3.9
Total Alkalinity-CaCO3.....	310.1	2.0	190
Turbidity (NTU).....	180.1	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

EL MAR ANALYTICAL, IRVINE (ELAP #1197)

*Kim Mantel for*Gary Steube
Laboratory Director

004540

CK03091.SEA <7 of 8>



2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
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943 South 48th St., Suite 114, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

Seacor
3485 Sacramento Drive, Suite A
San Luis Obispo, CA 93401
Attention: Greg Vogelpohl

Client Project ID: A0057-001-02
Allied Signal
Sample Descript: Water, GW-8 (MW-2)
Lab Number: CK03094

Sampled: Nov 29, 1993
Received: Nov 29, 1993
Analyzed: 11/30-12/1, 1993
Reported: Dec 1, 1993

LABORATORY ANALYSIS

Analyte	EPA Method	Detection Limit mg/L (ppm)	Sample Result mg/L (ppm)
Ammonia-N.....	350.3	1.0	N.D.
Nitrate-NO3.....	300	2.5	56
Nitrite-NO2.....	300	1.0	N.D.
Potassium.....	6010	0.50	4.4
Total Alkalinity-CaCO3.....	310.1	2.0	240
Turbidity (NTU).....	180.1	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

EL MAR ANALYTICAL, IRVINE (ELAP #1197)

Kenn Martel for

Gary Steube
Laboratory Director

004541

CK03091.SEA <8 of 8>



QC DATA REPORT

EPA METHOD: 350.3
matrix: water

DATE: 12/1/93

SAMPLE # CK03091

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppm	ppm	ppm	ppm	%	%	%	%
Ammonia	0	1	1.12	1.12	112%	112%	0.0%	112%

Definition of Terms:

R1..... Result of Sample Analysis
Sp..... Spike Concentration Added to Sample
MS..... Matrix Spike Result
MSD..... Matrix Spike Duplicate Result
PR1..... Percent Recovery of MS; $(MS-R1) / SP \times 100$
PR2..... Percent Recovery of MSD; $((MSD-R1) / SP \times 100$
RPD..... Relative Percent Difference; $((MS-MSD)/(MS+MSD)/2) \times 100$

Del Mar Analytical

004542



Del Mar Analytical

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(818) 779-1844 FAX (818) 779-1843

QC DATA REPORT

DATE: 11/30/93

SAMPLE # CK03016

EPA METHOD 300
Instrument: IC
Matrix: Water

Analyte

	R1	SP	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppm	ppm	ppm	ppm	%	%	%	%
Fluoride	0	1	0.92	1.3	92%	130%	34.2%	111%
Chloride	1.7	1.5	3.1	3.2	93%	100%	3.2%	97%
Nitrite	0	5	4.5	4.6	90%	92%	2.2%	91%
Nitrate	0	5	4.7	4.7	94%	94%	0.0%	94%
Phosphate	0	7.5	6.7	6.8	89%	91%	1.5%	90%
Sulfate	3	7.5	7.9	8.5	65%	73%	7.3%	69%

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; $(MS-R1) / SP \times 100$

PR2..... Percent Recovery of MSD; $(MSD-R1) / SP \times 100$

RPD..... Relative Percent Difference; $((MS-MSD)/(MS+MSD)/2) \times 100$

004543

QC DATA REPORT

DATE: 12/1/93

SAMPLE # CK03092

METHOD Metals
 Instrument: ICP
 Matrix: WATER

Analyte

	R1	SP	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Calcium	6772	1000	7681	7677	91%	91%	0.1%	91%
Magnesium	1689	1000	2738	2678	105%	99%	2.2%	102%

R1..... Result of Sample Analysis
 Sp..... Spike Concentration Added to Sample
 MS..... Matrix Spike Result
 MSD..... Matrix Spike Duplicate Result
 PR1..... Percent Recovery of MS; $(MS-R1) / SP \times 100$
 PR2..... Percent Recovery of MSD; $(MSD-R1) / SP \times 100$
 RPD..... Relative Percent Difference; $((MS-MSD)/(MS+MSD)/2) \times 100$

004544

QC DATA REPORT

DATE: 12/1/93

METHOD Metals
 Instrument: ICP
 Matrix: WATER

SAMPLE # CK03092

Analyte

	R1	SP	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Potassium	3637	10000	13756	13655	101%	100%	0.7%	101%

R1..... Result of Sample Analysis
 Sp..... Spike Concentration Added to Sample
 MS..... Matrix Spike Result
 MSD..... Matrix Spike Duplicate Result
 PR1..... Percent Recovery of MS; $(MS-R1) / SP \times 100$
 PR2..... Percent Recovery of MSD; $((MSD-R1) / SP \times 100$
 RPD..... Relative Percent Difference; $((MS-MSD)/(MS + MSD)/2)) \times 100$



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16525 Sherman Way, Suite C-11, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843

QC DATA REPORT

DATE: 12/1/93
SAMPLE # CK03092

METHOD Metals
Instrument: ICP
Matrix: WATER

Analyte	R1	SP	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Sodium	2600	1000	3503	3617	90%	102%	3.2%	96%

R1..... Result of Sample Analysis
Sp..... Spike Concentration Added to Sample
MS..... Matrix Spike Result
MSD..... Matrix Spike Duplicate Result
PR1..... Percent Recovery of MS; $(MS-R1) / SP \times 100$
PR2..... Percent Recovery of MSD; $(MSD-R1) / SP \times 100$
RPD..... Relative Percent Difference; $((MS-MSD)/(MS+MSD)/2) \times 100$

004546

801 Western Avenue
Sausalito, CA 94061
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Fax: 818/247-9797

LOG NO: G93-11-378

Received: 30 NOV 93
Mailed : 15 DEC 93

Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES					DATE SAMPLED
11-378-1	GW-2					30 NOV 93
11-378-2	GW-3					30 NOV 93
11-378-3	GW-4					30 NOV 93
11-378-4	GW-5					30 NOV 93
11-378-5	GW-6					30 NOV 93
PARAMETER	11-378-1	11-378-2	11-378-3	11-378-4	11-378-5	
Anions by IC (Cl-300.0), mg/L	31	27	26	26	32	
Anions by IC (SO4-300.0), mg/L	56	50	52	56	54	
Nitrate as NO3 (300.0), mg/L	61	57	51	45	63	
Nitrite (by IC), mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Ammonia (350.1), mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Turbidity (180.1), NTU	4.4	4.7	1.1	20	34	
Filterable Residue, TDS (160.1), mg/L	460	500	500	450	700	
Alkalinity (310.1)						
Carbonate Alk (as CaCO3), mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alk (as CaCO3), mg/L	280	210	210	220	260	
Hydroxide Alk (as CaCO3), mg/L	<1	<1	<1	<1	<1	
Total Alkalinity (as CaCO3), mg/L	280	210	210	220	260	
Calcium (6010), mg/L	86	82	80	83	97	
Magnesium (6010), mg/L	19	18	17	18	21	
Potassium (6010), mg/L	3.3	3.6	3.3	3.2	3.6	
Sodium (6010), mg/L	24	24	23	23	23	
Digestion (3010), Date	12/08/93	12/08/93	12/08/93	12/08/93	12/08/93	

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LOG NO: G93-11-378

Received: 30 NOV 93
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Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-378-1	GW-2	30 NOV 93
11-378-2	GW-3	30 NOV 93
11-378-3	GW-4	30 NOV 93
11-378-4	GW-5	30 NOV 93
11-378-5	GW-6	30 NOV 93

PARAMETER	11-378-1	11-378-2	11-378-3	11-378-4	11-378-5
TPH (8015M)					
Date Analyzed	12/07/93	12/07/93	12/07/93	12/07/93	12/07/93
Date Extracted	12/07/93	12/07/93	12/07/93	12/07/93	12/07/93
Dilution Factor, Times	1	1	1	1	1
TPH (total), mg/L	<1	<1	<1	<1	<1
Other TPH (8015M)	---	---	---	---	---

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LOG NO: G93-11-378

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Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-378-1	GW-2	30 NOV 93
11-378-2	GW-3	30 NOV 93
11-378-3	GW-4	30 NOV 93
11-378-4	GW-5	30 NOV 93
11-378-5	GW-6	30 NOV 93

PARAMETER	11-378-1	11-378-2	11-378-3	11-378-4	11-378-5
E524.2/VOC					
Date Analyzed	12/03/93	12/06/93	12/06/93	12/03/93	12/06/93
Dilution Factor, Times	1	1	1	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,1-Trichloroethane, ug/L	0.37	0.6	<0.2	<0.2	<0.2
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene, ug/L	<0.2	0.4	<0.2	<0.2	<0.2
1,1-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	0.25	0.3
1,2,3-Trichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	0.3
1,2,4-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dibromo-3-chloropropane, ug/L	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
1,4-Dichlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2

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LOG NO: G93-11-378

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Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES					DATE SAMPLED
11-378-1	GW-2					30 NOV 93
11-378-2	GW-3					30 NOV 93
11-378-3	GW-4					30 NOV 93
11-378-4	GW-5					30 NOV 93
11-378-5	GW-6					30 NOV 93
PARAMETER	11-378-1	11-378-2	11-378-3	11-378-4	11-378-5	
2,2-Dichloropropane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
2-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
4-Chlorotoluene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Bromobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Bromochloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Bromodichloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Bromomethane, ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Bromoform, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Chlorobenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Carbon Tetrachloride, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Chloroethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Chloroform, ug/L	0.33	0.3	0.3	0.37	0.4	
Chloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Dibromochloromethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Dibromomethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Ethylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Freon 113, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Hexachlorobutadiene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Isopropylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Methylene chloride, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
N-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	
N-Propylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	



004550

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LOG NO: G93-11-378

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Mailed : 15 DEC 93

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Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-378-1	GW-2	30 NOV 93
11-378-2	GW-3	30 NOV 93
11-378-3	GW-4	30 NOV 93
11-378-4	GW-5	30 NOV 93
11-378-5	GW-6	30 NOV 93

PARAMETER	11-378-1	11-378-2	11-378-3	11-378-4	11-378-5
Naphthalene, ug/L	<0.2	<0.2	<0.2	0.45	0.4
Styrene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene, ug/L	29	15	0.6	0.78	1.2
Trichlorofluoromethane, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene, ug/L	<0.2	0.2	<0.2	<0.2	<0.2
Tetrachloroethene, ug/L	1.7	1.6	0.3	0.97	1.2
Vinyl chloride, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene, ug/L	0.40	<0.2	<0.2	0.63	0.4
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
m- and p-Xylene Isomers, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
o-Xylene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
p-Isopropyl toluene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
sec-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
tert-Butylbenzene, ug/L	<0.2	<0.2	<0.2	<0.2	<0.2
Other E524.2/VOC	---	---	---	---	---

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LOG NO: G93-11-378

Received: 30 NOV 93
Mailed : 15 DEC 93

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Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 6

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
11-378-6	Equipment Blank	30 NOV 93
PARAMETER	11-378-6	
Anions by IC (C1-300.0), mg/L	<0.05	
Anions by IC (S04-300.0), mg/L	<0.1	
Nitrate as NO3 (300.0), mg/L	<0.1	
Chloride (by IC), mg/L	<0.1	
Ammonia (350.1), mg/L	<0.1	
Turbidity (180.1), NTU	0.60	
Filterable Residue, TDS (160.1), mg/L	54	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	<10	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	<10	
Calcium (6010), mg/L	<0.5	
Magnesium (6010), mg/L	<0.1	
Potassium (6010), mg/L	<0.5	
Sodium (6010), mg/L	<0.5	
Digestion (3010), Date	12/08/93	
TPH (8015M)		
Date Analyzed	12/07/93	
Date Extracted	12/07/93	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

BC Analytical

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Sausalito, CA 94965
415/456-5737
Fax: 415/456-9797

LOG NO: G93-11-378

Received: 30 NOV 93
Mailed : 15 DEC 93

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Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 7

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
11-378-6	Equipment Blank	30 NOV 93
PARAMETER	11-378-6	
E524.2/VOC		
Date Analyzed	12/06/93	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.2	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

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3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 8

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
11-378-6	Equipment Blank	30 NOV 93
PARAMETER	11-378-6	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.2	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	<0.2	
Chloromethane, ug/L	<0.2	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<0.2	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	<0.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	<0.2	
Vinyl chloride, ug/L	<0.2	
cis-1,2-Dichloroethene, ug/L	<0.2	

BC Analytical

Western Avenue
ndale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-378

Received: 30 NOV 93
Mailed : 15 DEC 93

Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 9

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
11-378-6	Equipment Blank	30 NOV 93
PARAMETER	11-378-6	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
o-Xylene, ug/L	<0.2	
Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	

BC Analytical

Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-378

Received: 30 NOV 93
Mailed : 15 DEC 93

Mr. Greg Vogelpohl
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San Luis Obispo, California 93401

Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 10

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
11-378-7	Trip Blank	
PARAMETER	11-378-7	
TPH (8015M)		
Date Analyzed	12/07/93	
te Extracted	12/07/93	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	

BC Analytical

Western Avenue
Oakland, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-378

Received: 30 NOV 93

Mailed : 15 DEC 93

Mr. Greg Vogelpohl
SEACOR
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San Luis Obispo, California 93401

Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 11

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
11-378-7	Trip Blank	
PARAMETER	11-378-7	
E524.2/VOC		
Date Analyzed	12/06/93	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	<0.2	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	<0.2	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.2	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	

BC Analytical

Western Avenue
ndale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-378

Received: 30 NOV 93
Mailed : 15 DEC 93

Mr. Greg Vogelpohl
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3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 12

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
11-378-7	Trip Blank	
PARAMETER	11-378-7	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.2	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	<0.2	
Chloromethane, ug/L	<0.2	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<0.2	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	<0.2	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	<0.2	
Tetrachloroethene, ug/L	<0.2	
Vinyl chloride, ug/L	<0.2	
cis-1,2-Dichloroethene, ug/L	<0.2	

BC Analytical

Western Avenue
ndale, CA 91201
818/247-5737
Fax: 818/247-9797

LOG NO: G93-11-378

Received: 30 NOV 93
Mailed : 15 DEC 93

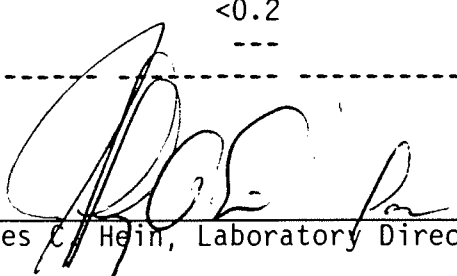
Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 13

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
11-378-7	Trip Blank	
PARAMETER	11-378-7	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	
-Xylene, ug/L	<0.2	
-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	


James C. Hein, Laboratory Director

Analytical Report

ANALYTICAL REPORT

LOG NO: G93-12-066

Received: 07 DEC 93

Mailed: DEC 22 1993

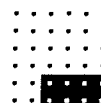
Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
12-066-1	GW-1	07 DEC 93
PARAMETER	12-066-1	
Anions by IC (Cl-300.0), mg/L	25	
Anions by IC (SO4-300.0), mg/L	56	
Nitrate as NO3 (300.0), mg/L	36	
Nitrite (by IC), mg/L	<0.1	
Ammonia (350.1), mg/L	0.38	
Turbidity (180.1), NTU	1.42	
Filterable Residue, TDS (160.1), mg/L	410	
Alkalinity (310.1)		
Carbonate Alk (as CaCO3), mg/L	<1	
Bicarbonate Alk (as CaCO3), mg/L	200	
Hydroxide Alk (as CaCO3), mg/L	<1	
Total Alkalinity (as CaCO3), mg/L	200	
Calcium (6010), mg/L	91	
Magnesium (6010), mg/L	19	
Potassium (6010), mg/L	3.8	
Sodium (6010), mg/L	27	
Digestion (3010), Date	12/21/93	
TPH (8015M)		
Date Analyzed	12/09/93	
Date Extracted	12/09/93	
Dilution Factor, Times	1	
TPH (total), mg/L	<1	
Other TPH (8015M)	---	



Analytical Report

LOG NO: G93-12-066

Received: 07 DEC 93

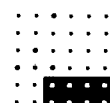
Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
12-066-1	GW-1	07 DEC 93
PARAMETER	12-066-1	
E524.2/VOC		
Date Analyzed	12/14/93	
Dilution Factor, Times	1	
1,1,1,2-Tetrachloroethane, ug/L	<0.2	
1,1,1-Trichloroethane, ug/L	0.3	
1,1,2,2-Tetrachloroethane, ug/L	<0.2	
1,1,2-Trichloroethane, ug/L	<0.2	
1,1-Dichloroethane, ug/L	0.3	
1,1-Dichloroethene, ug/L	<0.2	
1,1-Dichloropropene, ug/L	<0.2	
1,2,3-Trichlorobenzene, ug/L	<0.2	
1,2,3-Trichloropropane, ug/L	<0.2	
1,2,4-Trichlorobenzene, ug/L	<0.2	
1,2,4-Trimethylbenzene, ug/L	<0.2	
1,2-Dibromo-3-chloropropane, ug/L	<0.5	
1,2-Dibromoethane, ug/L	<0.2	
1,2-Dichloroethane, ug/L	<0.2	
1,2-Dichlorobenzene, ug/L	<0.2	
1,2-Dichloropropane, ug/L	<0.2	
1,3,5-Trimethylbenzene, ug/L	<0.2	
1,3-Dichlorobenzene, ug/L	<0.2	
1,3-Dichloropropane, ug/L	<0.2	
1,4-Dichlorobenzene, ug/L	<0.2	
2,2-Dichloropropane, ug/L	<0.2	
2-Chlorotoluene, ug/L	<0.2	
4-Chlorotoluene, ug/L	<0.2	
Bromobenzene, ug/L	<0.2	



Analytical Report

LOG NO: G93-12-066

Received: 07 DEC 93

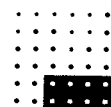
Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
12-066-1	GW-1	07 DEC 93
PARAMETER	12-066-1	
Bromochloromethane, ug/L	<0.2	
Bromodichloromethane, ug/L	<0.2	
Bromomethane, ug/L	<0.5	
Benzene, ug/L	<0.2	
Bromoform, ug/L	<0.2	
Chlorobenzene, ug/L	<0.2	
Carbon Tetrachloride, ug/L	<0.2	
Chloroethane, ug/L	<0.2	
Chloroform, ug/L	0.3	
Chloromethane, ug/L	<0.2	
Dibromochloromethane, ug/L	<0.2	
Dibromomethane, ug/L	<0.2	
Ethylbenzene, ug/L	<0.2	
Freon 113, ug/L	<0.2	
Hexachlorobutadiene, ug/L	<0.2	
Isopropylbenzene, ug/L	<0.2	
Methylene chloride, ug/L	<0.2	
N-Butylbenzene, ug/L	<0.2	
N-Propylbenzene, ug/L	<0.2	
Naphthalene, ug/L	<0.2	
Styrene, ug/L	<0.2	
Trichloroethene, ug/L	4.4	
Trichlorofluoromethane, ug/L	<0.2	
Toluene, ug/L	0.3	
Tetrachloroethene, ug/L	2.6	
Vinyl chloride, ug/L	<0.2	
cis-1,2-Dichloroethene, ug/L	2.1	



Analytical Report

LOG NO: G93-12-066

Received: 07 DEC 93

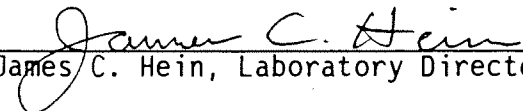
Mr. Greg Vogelpohl
SEACOR
3485 Sacramento Drive, Suite A
San Luis Obispo, California 93401

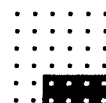
Project: A0057-001-02

REPORT OF ANALYTICAL RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
12-066-1	GW-1	07 DEC 93
PARAMETER	12-066-1	
cis-1,3-Dichloropropene, ug/L	<0.2	
m- and p-Xylene Isomers, ug/L	0.3	
Xylene, ug/L	<0.2	
p-Isopropyl toluene, ug/L	<0.2	
sec-Butylbenzene, ug/L	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	
tert-Butylbenzene, ug/L	<0.2	
Other E524.2/VOC	---	


James C. Hein, Laboratory Director



APPENDIX C
CHAIN OF CUSTODY DOCUMENTS

Chain-of-Custody Number: A 9667

SEACOR Chain-of-Custody Record

Chain-of-Custody Number: A 9666

Address

Project # 10057 Date 2 Task # 01
Project Manager [Signature]
Laboratory [Signature]
Turn-around time: 4 days TAT
Sampler's Name: [Signature]
Sampler's Signature: [Signature]

Project Name All and Segonal

Analysis Request

TPHg/BTEX
8015 (modified)/8020
TPHd
8015 (modified)
TPH 418.1
Aromatic Volatiles
602/8020
Volatile Organics
624/8240 (GC/MS)
Halogenated Volatiles
601/8010
Semi-volatile Organics
625/8270 (GC/MS)
Pesticides/PCB's
608/8080
Total Lead
7421
Priority Pollutant
Metals (13)
TCLP Metals
TPH 8015.1
EPA 524.2

Comments/
Instructions

Number of Containers

Special Instructions/Comments:

TAT

Relinquished by:

Sign [Signature]
Print [Signature]
Company [Signature]
Time 3:45 Date 11/29/13

Received by:

Sign [Signature]
Print [Signature]
Company [Signature]
Time 15:41 Date 11/29/13

Sample Receipt

Total no. of containers
Chain of custody seals:
Rec'd good condition/cold:
Conforms to record:

Client:

Client Contact:

004565

REVISED WORKPLAN
Amending Revised Remedial Investigation
Workplan Dated June 2003

Honeywell North Hollywood
11600 Sherman Way
North Hollywood, California

PREPARED FOR:

Honeywell

HONEYWELL
2525 West 190th Street
Torrance, California

PREPARED BY:

PARSONS
100 West Walnut Street
Pasadena, California 91124
(626) 440-4000 Fax (626) 440-6200

 **PARSONS**

JULY 23, 2004

SIGNATURE PAGE

For

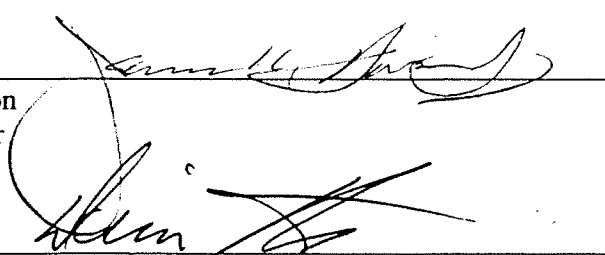
REVISED WORKPLAN
Amending Revised Remedial Investigation
Workplan Dated June 2003

Honeywell North Hollywood
11600 Sherman Way
North Hollywood, California

July 23, 2004

Approved by

James M. Hanlon
Project Manager



Date

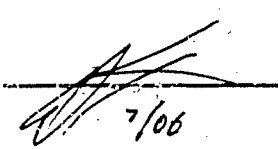
7/23/04

Devin Thor, R.G.
Technical Reviewer



Date

7/23/04



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Mr. Ron Newquist
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Mr. A.J. Blanco, Assistant Manager
Home Depot
11600 Sherman Way
North Hollywood, California 91605

Mr. Barry Dunzer, Project Manager
Public Storage
11620 Sherman Way
North Hollywood, California 91605

File

Parsons, is submitting this revised workplan, on behalf of Honeywell International, Inc. (Honeywell), in response to the Regional Water Quality Control Board, Los Angeles Region's (RWQCB's) request at the meeting on June 15, 2004 regarding the Honeywell North Hollywood site at 11600 Sherman Way, North Hollywood, California (Site). This workplan presents further details regarding the plan and schedule for the installation of off-Site groundwater monitoring wells, and amends the *Revised Remedial Investigation (RI) Workplan* prepared by Parsons, dated June 2003 (Workplan). We have reviewed the issues raised by RWQCB during the recent meeting. Namely, the planned off-Site wells must correlate with wells previously installed by United States Environmental Protection Agency (EPA) in proximity to the southern boundary of the Site.

BACKGROUND

Three proposed off-site wells, referred to as GW-11, GW-12, and GW-13, were originally proposed within the Union Pacific Railroad right-of-way that lies south of the site. Details for installation of these three wells were previously presented in the RWQCB-approved workplan dated 1994 (Hydrologue, 1994a and 1994c). Any revision to the three proposed wells (GW-11, GW-12, and GW-13) requires concurrence by the USEPA and State of California. Section G of Part V of the Consent Agreement signed between Honeywell (formerly AlliedSignal, Inc.) and the USEPA/State of California identifies installation of these monitoring wells as "Additional Obligations of AlliedSignal, Inc." under the Consent Agreement, per previously approved workplan. Upon Regional Board obtaining USEPA/State of California concurrence for the deviations described below, Honeywell will be prepared to install these wells.

As discussed during the June 15, 2004 meeting, an access agreement with the Union Pacific Railroad has now been signed and the access agreement for the wells south of the railroad (KVK Properties) is near. However, we have since learned that the Union Pacific has subdivided the right-of-way and sold the southern portion, where the tracks are, to the Metropolitan Transportation Authority (MTA). Union Pacific has delegated control of all access to the right-of-way to Metrolink, a subsidiary of MTA. Metrolink has extensive engineering and safety reviews that it must complete before access to the right-of-way will be granted. Further, Union Pacific has allowed fiber-optic cables to be installed in the right-of-way that it still owns, which is where the proposed wells would be installed. All of these factors portend a significant delay in starting the installation of wells GW-11, GW-12, and GW-13.

Therefore, Honeywell has prepared an alternate plan that will allow us to immediately move forward with installation of all off-Site wells. Attachments 1 and 2 illustrate the existing and proposed monitoring well locations for the Site. The proposed wells identified as GW-11, GW-12, and GW-13 are wells Honeywell previously agreed to install within the railroad right-of-way. These have been relocated to adjacent properties where railroad involvement will not be an issue. The planned wells GW-16, and GW-17 were considered for installation south of the railroad right-of-way in replacement of GW-11, GW-12, and GW-13 when it did not appear as if an access agreement for the railroad right-of-way could be reached. GW-16 and GW-17 are now added to the plan to provide data further down gradient from the Site.

The original workplan (Hydrologue, Inc 1994) included multi-depth soil vapor monitoring probes installed in the annulus of wells GW-11, GW-12, and GW-13. However, since that time Honeywell has installed and operated a soil vapor extraction (SVE) system for remediation of deep soils within the southern portion of the Kaiser property. Therefore, Honeywell now proposes to include the multi-depth soil vapor monitoring probes in the annulus of the groundwater monitoring well located closest to the existing SVE system, GW-12, to monitor its performance, and to exclude soil vapor monitoring probes from the remaining wells, GW-11 and GW-13.

Installation of the off-Site groundwater monitoring wells (GW-11, GW-12, GW-13, GW-16, and GW-17) will assist in defining the down gradient hexavalent chromium concentrations in groundwater. Furthermore, as discussed in the meeting, a Remedial Action Plan (RAP) to initiate on-Site soil and interim groundwater remediation of hexavalent chromium is being prepared. In anticipation of the proposed cleanup project, Honeywell will use the off-Site groundwater wells to monitor remediation efforts.

WELL INSTALLATION PROGRAM

Parsons will implement the off-Site well installation program. The first step will be to drill a pilot hole at the location of GW-12 to determine the screened interval(s) by depth-specific groundwater sample collection using the SimulProbe method. Grab groundwater samples will be collected at ten-foot intervals starting at approximately 280 feet (depth to the current groundwater) below ground surface (bgs) and extending to 350 feet bgs. (The original depth proposed in the 1994 workplan was 310 feet.) The intent is to assess the vertical extent of chromium-impacted groundwater near the Site boundary down gradient of the source area. Samples will be analyzed for hexavalent chromium by EPA Method 7199, on a 24-hour turn-around time. In addition, a HACH field test kit will be used, to develop a correlation between field and laboratory data for chromium concentrations.

A paired well will be designed based on laboratory analytical results of SimulProbe samples so that one monitoring well, GW-12A, is screened in the shallow depth interval where highest chromium concentrations are reported; and an adjacent monitoring well, GW-12B, is screened in a deeper interval where low to nondetectable concentrations of chromium are reported. The pilot borehole will be backfilled with a bentonite seal from the total depth of approximately 350 feet bgs to an appropriate depth for construction of a well with a screened interval designed as described above. The second well of the pair will be constructed within a separate borehole drilled adjacent to the pilot borehole. It is important from a remediation perspective to monitor specifically the current chromium-impacted depth interval of the aquifer and avoid dilution effects associated with wells screened over longer intervals that include clean portions of the aquifer. Therefore, the minimum well screen interval will be selected based on results of depth discrete sampling. It is anticipated that the saturated well screen intervals will not exceed approximately 25 feet. The original workplan called for 145 foot screen intervals. The goal of paired wells will be to monitor the current depth zone of chromium impact and a lower zone that is presently not impacted. The deeper well will serve as a sentry well establishing the vertical limit of chromium migration at the present time, but also will allow for monitoring of

groundwater at a deeper interval should water table decline occur prior to completion of remedial measures for chromium in groundwater.

Soil samples will be collected from the pilot borehole constructed as monitoring well GW-12B on ten-foot intervals from the surface to the water table and analyzed for hexavalent chromium by EPA 7199 and for VOCs by EPA 8260B. For future soil vapor monitoring for VOCs, multi-depth vapor probes will be installed in the annulus of the borehole of one of the wells in this well pair. The proposed depth of the probes are 50, 100, 150, and 200 feet bgs are the same as originally proposed in 1994.

The second well location to be drilled will be GW-11, which will be a single-depth monitoring well. This location is important to define the lateral extent of chromium to the west of the Site, and also because facilities that used hexavalent chromium existed to the west of the Site. Regional groundwater pumping in the vicinity could have caused hexavalent chromium-impacted groundwater from these potential sources to migrate towards the Site. As with GW-12, soil samples will be collected at ten-foot intervals in the vadose zone. Depth-specific groundwater samples will also be collected using the SimulProbe method in a pilot borehole that will be constructed as monitoring well GW-11, at ten-foot intervals starting at approximately 280 feet bgs and extending to approximately 350 feet bgs. Samples will be checked in the field with a HACH test kit and analyzed in the laboratory for hexavalent chromium by EPA Method 7199, on a 24-hour turn-around time. Based on the results of the analyses, a single depth monitoring well will be designed with a screened interval that targets the primary zone of hexavalent chromium-impacted groundwater. The pilot borehole will be backfilled with a bentonite seal from the total depth of approximately 350 feet bgs to an appropriate depth for construction of the well as designed.

Following installation of GW-11, to further delineate potential downgradient hexavalent chromium concentrations, Honeywell will next install groundwater monitoring wells GW-16 and GW-17. These wells will include soil samples at ten-foot intervals as with GW-11 and GW-12. During drilling, Honeywell will collect depth-specific groundwater samples using the SimulProbe method. Sample depths will be adjusted as needed based on the results of similar sampling at GW-11 and GW-12. Samples will be checked in the field with a HACH test kit and analyzed in the laboratory for hexavalent chromium by EPA Method 7199, on a 24-hour turn-around time. Based on the results of the analyses, a single depth monitoring well will be installed at each of these locations with screened intervals that target the primary zone of hexavalent chromium concentrations in each case. The wells will be constructed in the pilot boreholes as described below.

The construction of the proposed off-site wells will be largely based on the RWQCB-approved 1994 workplan (Hydrologue, 1994a,b) and modifications noted below. In order to prevent the possibility of metals leaching from the casing, PVC screen will be used instead of stainless steel screen as specified in the 1994 workplan. Wells will be constructed with new, decontaminated, flush-jointed and threaded, 4-inch, Schedule 80 polyvinyl chloride (PVC) casing and screen. The proposed slot size for screened intervals will be 0.020 inch, as opposed to the 0.030-inch slot specified in the 1994 workplan, to prevent potential siltation, which has been observed in some existing wells with 0.030-inch slot. The filter packs will be composed of Lonestar #2-16 silica

sand or equivalent. If differences in lithology are found during drilling, modifications to the proposed screen intervals, screen slot size, and filter pack specifications may need to be made in the field.

The proposed air rotary casing hammer drilling method is consistent with the original workplan and will use a tri-cone bit for drilling and compressed air to remove soil cuttings from the drill casing. In this method, air is directed through the hollow drilling rod down to the drill bit, where soil cuttings and entrained groundwater are blown up the drill casing. The drill casing (11-3/4" diameter) will be advanced behind the tri-cone bit as the borehole is being drilled. Then the drill cuttings are brought up inside the inner drive tube into a cyclone at the surface. The cyclone slows the movement of the soil and water and drops them into a roll-off type dump box. Water that accumulates in the drums and bins will be pumped off to a portable water tank for offsite disposal. In order to collect soil samples a split-spoon sampler will be inserted through the hollow center of the drill stem and hammered out beyond the end of the lead auger drill bit into undisturbed sediments at ten-foot intervals. These samples will be retrieved by the driller and handed to the on-site geologist who will log the stratigraphy.

Wells GW-11, GW-12A, GW-12B, GW-16, and GW-17 will be developed and sampled as described in the Parsons' RI Workplan (Parsons June 30, 2003) and following standard sampling protocols. After reviewing the data obtained from this first groundwater sampling event, Honeywell will then determine the optimum location for well GW-13 adjacent to the railroad right-of-way. Currently this well location is expected to be moved to the southeast to define the eastern limit of chromium impact leaving the Site. Honeywell will also evaluate whether or not to install well GW-18. If well GW-18 is installed, it is likely that it will be installed southwest of its current proposed location at the approximate midpoint between the currently highest concentrations in groundwater on-Site (GW-10 and GW-15) and NHOU#2. Screened intervals for GW-13 and GW-18 will be based on the depth discrete data collected at GW-11, -12, -16, and -17.

SAMPLING PROCEDURES

Standard procedures will be utilized for purging and sampling groundwater monitoring wells. In addition to the samples collected for laboratory analyses, field parameters will be measured. The general groundwater-indicator parameters, pH, temperature, electrical conductivity, and turbidity will be measured during each sampling event. Some of the parameters will be measured with a direct-reading meter, while others will be measured using a Hach® portable colorimeter in accordance with specific Hach® analytical procedures.

Qualified field personnel trained in the conduct of groundwater sampling, record documentation, and COC procedures will perform all sampling activities. In addition, sampling personnel will have thoroughly reviewed this workplan prior to sample acquisition and will have a copy of these procedures available onsite for reference.

The following paragraphs present the procedures to be followed for groundwater sample collection from groundwater monitoring wells. Exceptions to these procedures will be noted in the field logbook or on the groundwater sampling record.

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GROUNDWATER MONITORING PROCEDURES

In general, groundwater sampling will include:

- (1) water level measurements;
- (2) calculation of proper purge volume and well purging;
- (3) collection of a groundwater sample;
- (4) proper field documentation; and
- (5) proper delivery of chilled samples under chain-of-custody (COC) to the laboratory.

All equipment to be used for sampling will be assembled, decontaminated, and calibrated (if required) prior to arriving in the field. All non-dedicated sampling and test equipment that will contact groundwater will be decontaminated before each use. This includes the water-level probe and cable, test equipment for onsite use, and other equipment that will contact the samples. The decontamination protocol will be:

- Wash with potable water and phosphate-free laboratory detergent;
- Rinse with potable water;
- Rinse with distilled or deionized water; and
- Air dry.

Procedures will be documented in the field notebook and on the groundwater sampling record forms.

Laboratory-supplied sample containers and lids will be new and sealed by the laboratory prior to receipt by Parsons. The project laboratory will add any necessary chemical preservatives to sample containers prior to shipping the containers to Parsons. The type of container provided and the method of container decontamination will be documented in the project laboratory's permanent record of the sampling event.

As required, field analytical equipment will be calibrated according to the manufacturers' specifications prior to field use. This applies to equipment used for onsite measurements of dissolved oxygen (DO), pH, conductivity, and temperature. Prior to removing water from the monitoring well, an electronic water-level indicator will be used to measure the static water level to the nearest 0.01 feet. Additionally, the depth to the bottom of the well will be measured by slowly lowering the water-level probe to the bottom and taking the measurement to the nearest 0.01 foot.

A portable Grundfos® Redi-Flo II® will be used for purging the monitoring wells. The volume of water contained within the well casing at the time of sampling will be calculated, and at least three times the calculated well casing volume will be removed from the well. If a well is evacuated to a dry state during purging, the well will be allowed to recharge to 80 percent of static water level, and then a sample will be collected. The pump intake will be placed as close as possible to the top of water column to ensure all stagnant water is removed.

After purging, with groundwater pH, temperature, and conductivity measurements stabilized to within 10 percent during three consecutive readings taken at least five minutes apart, samples will be collected from disposable bailers. The water will be carefully poured down the inner walls of the laboratory-supplied sample containers to minimize aeration of the sample. Excess

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water collected during sampling will be disposed of in the same manner as purge water. Field quality assurance and quality control protocols are discussed in Section 4.4.

In order to provide complete documentation of the sampling event, records will be maintained by field personnel in a field logbook (Section 4.3.1). In addition, the following information will be recorded on the well sampling log:

- Sample location (facility name),
- Sample identification,
- Date and time of sampling,
- Sampling/purge method,
- Field observations of sample appearance and color,
- Weather conditions,
- Water level prior to purging,
- Total monitoring well depth,
- Purge volume,
- Monitoring well condition,
- Sampler's identification,
- Field measurements of pH, temperature, specific conductivity, and DO; and

Any other relevant information.

GROUNDWATER PARAMETER MEASUREMENT

Some groundwater chemical parameters will be measured onsite. Some of the measurements will be made with direct-reading meters, while others will be made using a Hach® portable colorimeter in accordance with specific Hach® analytical procedures. These procedures are described in the following subsections.

All glassware or plasticware used in the Hach® analyses will have been cleaned prior to sample collection by thoroughly washing with a solution of laboratory-grade, phosphate-free detergent and water, and rinsing with isopropyl alcohol and deionized water to prevent interference or cross-contamination between measurements. If concentrations of an analyte are above the range detectable by the titrametric or colorimetric methods, the analysis will be repeated by diluting the groundwater sample with distilled water until the analyte concentration falls to a level within the range of the method. All rinseate and sample reagents accumulated during groundwater analysis will be collected, labeled, and carefully stored for proper disposal.

pH, Temperature, and Conductivity: Because the pH, temperature, and conductivity of a groundwater sample can change significantly within a short time following sample acquisition, these parameters will be measured in the field in unfiltered, unpreserved, "fresh" water. The measurements will be made at regular intervals during purging in a flow-through cell or a clean container separate from those intended for laboratory analysis. The wells will be purged until the readings stabilize to within $\pm 10\%$ of consecutive readings. The measured values will be recorded in the groundwater sampling record.

Work will be conducted according to the following standard field protocols:

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All field activity information will be recorded in a permanently bound notebook with sequentially numbered pages. The date and initials will be recorded at the top of each page. Minimum information required for each entry includes:

- Time (recorded in the column under the date);
- Weather conditions during previous 24 hours;
- Persons performing the drilling, sampling, testing, or other activity;
- Drilling and well construction information;
- Sample location map or detailed sketch,
- Site identification;
- Photograph numbers and description;
- Equipment decontaminated and procedures utilized;
- Equipment serial numbers;
- Calibrations;
- Field measurements not recorded on other data sheets;
- Records of pertinent conversations;
- Names, titles, and organization of any visitors entering the site; and
- Comments (suitable for reconstructing incident without memory).

All entries will be made in waterproof ink. Any errors will be corrected by drawing a single line through the mistake, and all corrections will be initialed and dated. Blank spaces will be crossed out and initialed and dated.

All samples collected will be labeled in a clear and precise way for proper identification in the field and for tracking in the laboratory. The samples will have preassigned, identifiable, and unique numbers.

- Project location/name;
- Sample identification number;
- Sampling date;
- Sampling time;
- Preservatives added;
- Sample collector's initials; and
- Analyses requested.

After the samples are sealed and labeled, they will be packaged for shipment to the project laboratory. Every effort will be made to protect the samples against shipment breakage. All glass sample bottles will be wrapped in bubble pack and taped. The cooler will be filled with double-bagged ice, to maintain a maximum shipping temperature of 4°C.

After the cooler has been filled with samples and bagged ice, any remaining space will be filled with bubble pack. This will help prevent sample movement during shipment. The lid and the drain port will be taped shut. The cooler will then be taped closed by taping around the cooler at least twice on each side of the cooler. Samples will be either shipped via an overnight service to the project laboratory or picked up by courier and delivered the same day.

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Chain-of-custody forms will be completed in the field and will accompany all samples during shipment. The forms will be placed in a locking plastic bag and taped to the inside lid of the shipping cooler.

The chain-of-custody form will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is either in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorized personnel. Until the samples are shipped, the custody of the samples will be the responsibility of Parsons. The site leader or designee will sign the chain-of-custody form.

As a check on field sampling, quality assurance/quality control (QA/QC) samples will be collected. Definitions for field QA/QC samples are presented below.

Field duplicate samples will be collected and analyzed to evaluate sampling and analytical precision. A field duplicate is defined as two or more samples collected independently at the same sampling location during a single act of sampling. The laboratory will be unable to distinguish which samples are field duplicates. Each of the field duplicates will be uniquely identified with a coded identifier, which will be in the same format as other sample identifiers. Duplicate sample results are used to assess the precision of the sample collection process. Field duplicates will be collected from ten percent of all samples. Field duplicate analysis is not required for geochemical parameters.

Equipment rinseate blanks (field blanks) are used to measure contamination introduced to a sample set from improperly decontaminated sampling equipment. Equipment rinseate blanks consist of ASTM Type II water (or equivalent) poured into or pumped through the sampling device following decontamination. The rinseate is transferred to a sample bottle appropriate for the analysis and transported to the laboratory for analysis. One equipment rinseate sample will be collected per sampling event for each type of sampling equipment used (disposable bailers excluded). The equipment rinseate samples are analyzed for the same laboratory parameters as the site samples. Equipment rinseate blanks need not be analyzed for geochemical parameters.

Other QA/QC samples including trip blanks, matrix spike and matrix spike duplicates, and method blanks will be used to confirm the quality of the laboratory data. The trip blank, consisting of 40-milliliter glass vial filled with analyte-free reagent-grade water (ASTM Type II or equivalent) is used to indicate potential contamination by VOCs during sample shipping and handling. The blank accompanies the empty sample bottles to the field and is placed in a cooler returning to the laboratory that contains water or soil matrix VOC samples. The trip blank is not opened until it is analyzed along with the corresponding site samples.

Method blanks are designed to detect contamination of the field samples in the laboratory environment. Method blanks verify that interferences caused by contaminants in solvents, reagents, glassware, or in other sample processing hardware are known and minimized.

Matrix spike (MS) samples are designed to check the accuracy of the analytical procedures for the sample matrix by analyzing a field sample spiked at the laboratory with a known standard solution containing all the target analytes. A matrix spike duplicate (MSD) is the second of a pair of laboratory matrix spike samples. The MSDs are designed to check the precision and accuracy of analytical procedures by sample matrix.

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INVESTIGATION-DERIVED WASTE

In the process of conducting subsurface investigations, well installation, and groundwater monitoring various types of potentially contaminated investigation-derived waste (IDW) will be generated. Possible IDW includes:

- Used personal protective equipment (PPE);
- Purge water;
- Disposable sampling equipment;
- Decontamination fluids; and
- Soil cuttings from soil borings.

Used PPE and disposable equipment will be double bagged and placed in a municipal refuse dumpster on site. These wastes are not considered hazardous and may be sent to a municipal landfill. Any waste PPE and disposable equipment which can still be reused will be rendered inoperable before disposal in the refuse dumpster.

Soil cuttings generated during the subsurface sampling will be stored in 55-gal drums or bins on site. Profiling of soil cuttings will be done to ensure appropriate disposal. Purge water and decontamination fluids will be stored in 55-gal drums or a polyethylene tank on-site until they can be profiled and disposed of properly.

SITE SPECIFIC HEALTH AND SAFETY PLAN

All remedial investigations will be conducted in accordance with the provisions of the site-specific health and safety plan for the North Hollywood site (Parsons, 2001). After this workplan is approved by the RWQCB, the site-specific health and safety plan will be updated to include all the elements of the planned work.

SCHEDULE

Installation of GW-12 is tentatively scheduled begin on August 16, with the other wells following in succession as outlined above. Achieving this schedule is dependent on several factors and approvals that are beyond Honeywell's control.

- The access agreement with KVK Properties must be completed and signed. Honeywell and its attorneys are actively pursuing this goal but, obviously, success is dependent on timeliness and cooperation from KVK and its attorneys. An on-site meeting was held with the property owner and his attorney to address well locations and other concerns, but the agreement has not been finalized. The relocation of GW-11 onto KVK property is a new issue that has not been dealt with as yet. A preliminary utility clearance has also been completed for all proposed well locations.
- Receipt of well installation permits from Los Angeles County. The permit applications are being prepared by Parsons and will be ready by July 23.
- Approval of this workplan by the RWQCB. RWQCB approved the draft version of this workplan by email on Tuesday, July 20. The changes since have been cosmetic in nature or additions for the purpose of clarification.

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- Approval by USEPA of well relocations and workplan alterations relative to plan presented in 1994. The EPA has been contacted and furnished copies of the workplan amendments for their approval.
- Availability of drilling contractor. Contractor has been placed on notice for an August 16 start date.

CLOSING

Honeywell is aware of the importance of obtaining these data and is working to implement the off-Site well installation program as quickly as possible. Please call Mr. Benny DeHghi at (310) 512-2296, Mr. Noori Alavi at (310) 512-1060, or Mr. James Hanlon at (626) 440-6340 if you have any questions.

ATTACHMENTS

Attachment 1 Figure 1 - Existing onsite and proposed offsite well locations Aerial View
 Attachment 2 Figure 2 - Existing onsite and proposed offsite well locations Assessor Map
 Attachment 3 Well construction diagram. (GW-11, as typical for all wells)

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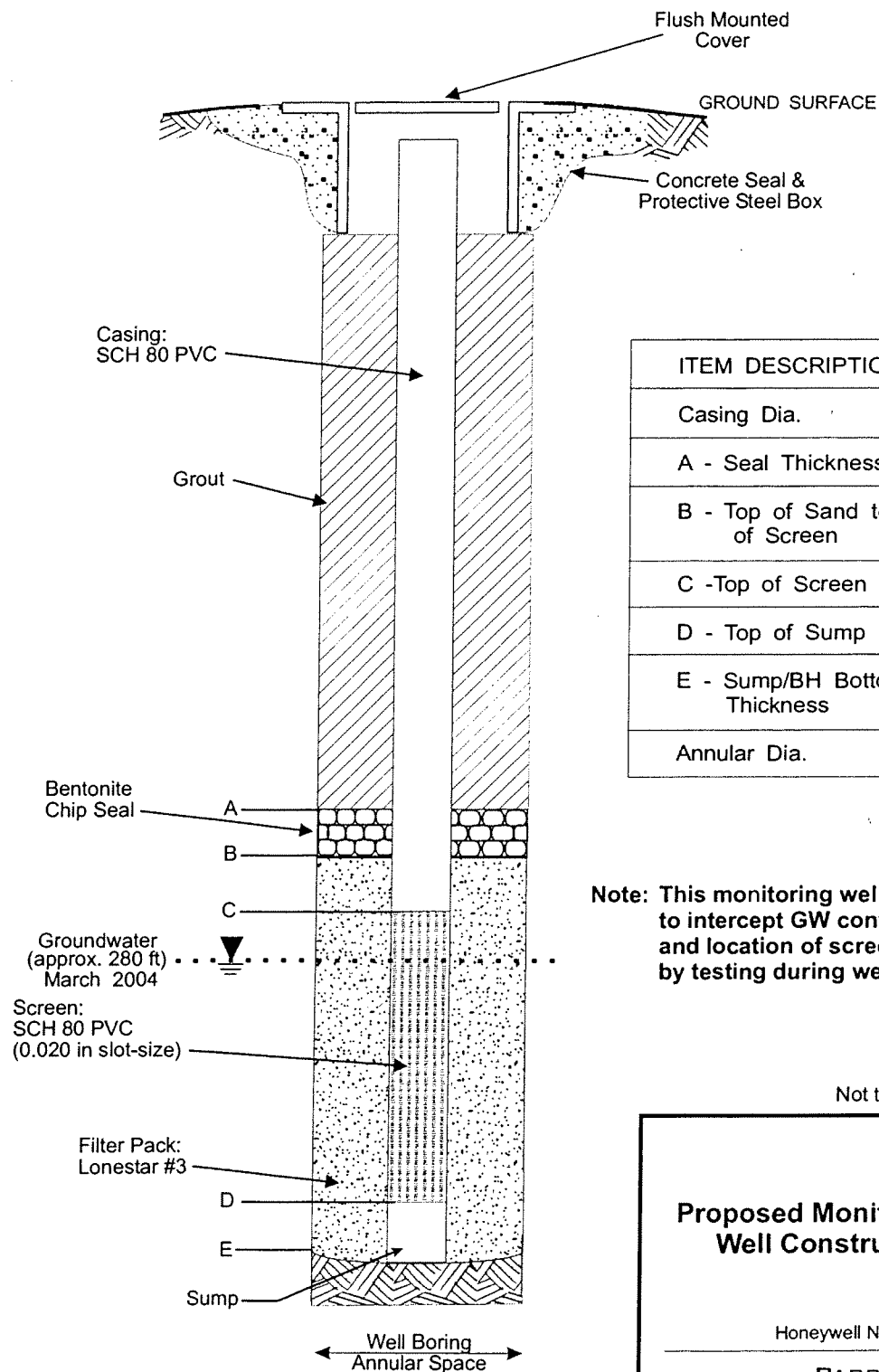
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K:\DEPTS\DEPT48\Honeywell\North Hollywood\Chrome\Off site access\GW-11\Prop Mon Well Diagram - GW-11.cdr



ITEM DESCRIPTION	GW-11
Casing Dia.	4 in
A - Seal Thickness	5 ft
B - Top of Sand to Top of Screen	5 ft
C -Top of Screen	TBD*
D - Top of Sump	TBD*
E - Sump/BH Bottom Thickness	5 ft
Annular Dia.	12 in

Note: This monitoring well will be screened to intercept GW contamination. Depth and location of screen to be determined by testing during well installation.

Not to Scale

Proposed Monitoring Well GW-11 Well Construction Diagram

Honeywell North Hollywood

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Pasadena, CA

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April 30, 2005

Mr. Mohammad Zaidi
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Re: Soil Vapor Extraction Performance Report, Honeywell North Hollywood Site, First Quarter 2005 (RWQCB File No. 111.0180)

Dear Mr. Zaidi:

Enclosed please find three copies of the above-referenced Soil Vapor Extraction Performance Report for the First Quarter 2005. As you review the report, call me at (626) 440-6161 if you have any questions.

Sincerely,

PARSONS



Shala Craig
Project Manager

Enclosure

cc: Benny DeHghi (Honeywell)
Ron Newquist (Kaiser Permanente)
Dixon Oriola (RWQCB, without attachment)
Project File



004583

**SOIL VAPOR EXTRACTION
PERFORMANCE REPORT
First Quarter 2005**

**Honeywell North Hollywood
11668 Sherman Way
North Hollywood, California**

PREPARED FOR:

Honeywell

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Torrance, California

PREPARED BY:

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APRIL 30, 2005

004584

SIGNATURE PAGE

for

**SOIL VAPOR EXTRACTION PERFORMANCE
REPORT
First Quarter 2005**

**Honeywell North Hollywood
11668 Sherman Way
North Hollywood, California**

April 30, 2005

Approved by

Melissa Ward

Melissa Ward
Task Manager

4/30/05
Date

Shala Craig

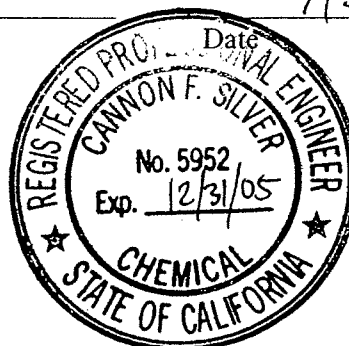
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Project Manager

4/30/05
Date

Cannon Silver

Cannon Silver, P.E.
Technical Reviewer

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DISTRIBUTION LIST

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File

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A	VOC Mass Removal Calculations
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ACRONYMS AND ABBREVIATIONS

ft bgs	feet below ground surface
ft ³ /min	cubic feet per minute
GAC	granular activated carbon
GC/MS	gas chromatograph/mass spectrometry
lb	pound
µg/L	micrograms per liter
PID	photoionization detector
ppmv	parts per million by volume
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SVE	soil vapor extraction
TCE	trichloroethene
VOC	volatile organic compound
USEPA	U.S. Environmental Protection Agency

SECTION 1

INTRODUCTION AND BACKGROUND

The following report documents the soil vapor extraction (SVE) remediation of volatile organic compounds (VOCs) in soil at the former Honeywell North Hollywood facility for the First Quarter 2005. The site, which is currently occupied by Kaiser Permanente, is located at 11668 Sherman Way, North Hollywood, California. In addition to discussing remedial performance data for the First Quarter 2005, the report includes an overview of the operation, maintenance, and monitoring of the SVE system since its startup in early October 2001 (Parsons, 2005).

1.1 SITE DESCRIPTION

Figure 1 illustrates the site layout and the immediate vicinity. The site is located in the eastern portion of the San Fernando Valley at an approximate elevation of 740 feet above mean sea level. The area undergoing SVE remediation lies under the former parking lot of the AlliedSignal/Bendix Electrodynamics Division (subsequently Honeywell) facility, which was built in 1941 and was used for the manufacture of hydraulic and pneumatic valves. Manufacturing operations continued until the plant was shut down in February 1992. The plant was demolished the following year and the west part of the facility was sold to Kaiser Permanente in the early 1990s.

The SVE system discussed in this report is located in the south parking lot of the present-day Kaiser Permanente facility. The Kaiser property is bordered by Sherman Way to the north, by the Southern Pacific Railroad right-of-way to the south, and by Lankershim Boulevard to the west. A commercial storage facility owned and operated by the Public Storage Corporation lies immediately east of the Kaiser property.

1.2 SVE REMEDIATION BACKGROUND

The SVE remediation has targeted VOCs that are present in vadose zone soils beneath the southern portion of the Kaiser property. These VOCs include trichloroethene (TCE), whose measured vapor-phase concentrations have been as high as 26,000 micrograms per liter ($\mu\text{g/L}$). Prior to system construction and startup, the goals and planned actions for SVE remediation were presented in a Remedial Action Work Plan (Parsons, 1999) that was subsequently approved by the Regional Water Quality Control Board – Los Angeles Region (RWQCB) (RWQCB, 1999). SVE remediation also satisfies the requirement for unsaturated zone VOC cleanup as prescribed by RWQCB Cleanup and Abatement Order No. R4-2003-0037 (RWQCB, 2003).

After evaluating several different cleanup methods/technologies, SVE was selected as the preferred remedial alternative. SVE is an in-situ treatment process that is proven to be effective in remediating soils impacted by VOCs, including TCE. Physical site constraints, such as the depth of VOC-impacted soils and the ongoing commercial activities at the Kaiser property, were also considered when choosing the most appropriate cleanup technology.

The SVE system includes a nested SVE well (EW-1) with four separate extraction zones that are screened in the following intervals: 50 to 70 ft bgs, 90 to 110 ft bgs, 140 to 160 ft bgs, and 180 to 200 ft bgs. For reference, the vadose zone beneath the site is typified by coarse-grained clastic deposits, including sand and gravelly sand, which extends to depths of approximately 275 ft bgs (based on recent water table measurements). The SVE system uses a trailer-mounted blower assembly to extract vapors from the screened intervals through underground piping that leads to an aboveground manifold. The extracted vapors are then routed through three 1,000-lb granular activated carbon (GAC) vessels arranged in series. The GAC vessels are used to absorb VOCs from the extracted vapors prior to discharge to the atmosphere. To prevent tampering and ensure the safety of site workers, the treatment equipment is located in a secured, fenced compound. Figure 2 presents the location of the extraction well and monitoring points and Figure 3 presents a block flow diagram for the vapor extraction system.

SECTION 2

SYSTEM OPERATION, MAINTENANCE, AND MONITORING

SVE system operation commenced on October 11, 2001. The system was operated in an essentially continuous manner until early October 2002, when it was temporarily shut down while a new, fixed-location, permit was processed by the South Coast Air Quality Management District (SCAQMD). System operation resumed on January 22, 2003 once the permit was finalized. A third 1,000-pound (lb) carbon vessel was added to the treatment train at the time to expand the system treatment capacity. Operation and maintenance activities for the First Quarter 2005 are discussed in the following subsections.

2.1 PROCESS MONITORING

Since its startup, the SVE system has operated with approximately 75% uptime, excluding the temporary shutdown discussed above. During the First Quarter 2005, occasional interruptions in operation were due to carbon changeouts, power failure, and liquid generation in the knockout due to the heavy rainfall. During the First Quarter 2005, the primary carbon vessel was replenished with fresh carbon three times, and the secondary vessel carbon was replaced two times (Table 1). In each instance, the changeout was necessary to maintain compliance with the treated effluent limits prescribed in the SCAQMD permit, which restrict VOC concentrations at the outlet of the secondary adsorber to no more than 50 parts per million by volume (ppmv) (as hexane). During a typical changeout, the carbon in the primary vessel was replenished, after which, the vessel sequence was reconfigured such that the freshly-filled vessel (i.e. the old primary vessel) was connected as the tertiary vessel, the former secondary vessel was set up as the primary vessel, and the former tertiary vessel became the secondary vessel. In this way, the freshest carbon provided final polishing prior to discharge to the atmosphere. Routine maintenance was performed in accordance with the system manufacturer's recommendations.

2.2 COMPLIANCE MONITORING

During the First Quarter 2005, the SVE system was operated under the following SCAQMD permit requirements:

- Flow rate through the oxidizer did not exceed 200 cubic feet per minute (ft³/min).
- The first carbon vessel was changed out when VOC concentrations exceeded 50 ppmv as hexane at the effluent of the second vessel.

During the new permit start-up period in January and February 2003, grab inlet and outlet samples were collected and analyzed by an off-site laboratory using United States Environmental Protection Agency (USEPA) Method TO-14, which detects VOCs by gas chromatography/mass spectrometry (GC/MS). After these initial laboratory analyses, influent and effluent gases have been quantified in the field using a photoionization detector (PID) calibrated to hexane as prescribed by the SCAQMD fixed-location permit.

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The SVE system was inspected periodically to monitor compliance with the above-referenced permit requirements and optimize system performance. During routine site visits, the extraction flow rate was checked and adjusted. Influent and effluent concentrations also were measured with a calibrated PID and/or sampled for laboratory analysis to confirm compliance with the permit requirements. Before each use, the PID was calibrated with hexane. During the First Quarter 2004, side-by-side measurements were taken with the PID calibrated to both 50 ppmv hexane and 100 ppmv hexane, to evaluate the potential effect of calibration gas concentration on these field measurements. The readings using both calibration gases were consistent. During 2003, for quality control purposes, side-by-side influent and effluent concentration measurements were taken using two independently calibrated PIDs. Both instruments showed consistent readings.

During routine inspections, the hours of operation, temperature, and extraction vacuum were documented and water was drained from the knockout pot as necessary. Table 1 presents an operational summary for the system, including relevant activities for the First Quarter 2005. During this quarter extraction was limited to the bottom (180 to 200 ft bgs) and second (90 to 110 ft bgs) interval of the extraction well to focus remediation on the most impacted zones.

2.3 PERFORMANCE MONITORING

Based on the performance monitoring data gathered, the cumulative amount of VOCs removed from soil and the VOC mass removal rate for the First Quarter 2005 was re-calculated. The mass removal rate was estimated based on the monitoring data summarized in Table 2 and the calculations described in Appendix A. As of the end of the First Quarter 2005 (i.e., March 30, 2005), after approximately 19,500 hours of operation, the SVE system had removed approximately 19,870 pounds of VOCs from the subsurface (Figure 4). Remediation during the First Quarter 2005 involved approximately 1,075 hours of operation and accounted for roughly 425 pounds of extracted VOCs. As depicted in Figure 5, the mass removal rate decreased somewhat during the First Quarter 2005, due to decreasing vadose zone concentrations of VOCs and shutdowns related to significant rainfall.

Longer-term trends in influent concentration are shown on Figure 5 and discussed below. Shortly after system startup, the high initial concentrations declined as VOCs were removed and system adjustments were made. Between late November 2001 and late February 2002, the recirculation and dilution air valves were readjusted to maintain an influent concentration between 1,000 and 2,000 ppmv and to increase flow. Beginning March 2002, the system was adjusted to further enhance vacuum and maximize the VOC removal rate. In response, the influent concentrations increased to greater than 10,000 ppmv before they began to decline in June 2002. This overall pattern of declining concentrations continued through calendar year 2003 and 2004. During 2004, with the exception of a brief period during August, typical concentrations ranged from 1,000 to 2,000 ppmv. During the First Quarter 2005 influent concentrations remained near or below 1,000 ppmv. In recent months, the rate of decrease in influent VOC concentrations has slowed, possibly signaling the onset of asymptotic conditions for this operational parameter.

Soil gas sampling events, the most recent of which took place in early July 2004, have been performed periodically to assess changes in vapor-phase VOC concentrations in subsurface soils (Table 3). As shown on Figure 6, the concentration of TCE in the various soil gas monitoring points and the extraction well intervals has decreased significantly since system operation began.

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In several instances, the concentration of TCE has declined more than two orders of magnitude. Following the permit-related shutdown in late 2002 and early 2003, only modest rebound effects were observed in most monitoring points. In general, the post-rebound concentrations of TCE remained one to two orders of magnitude lower than pre-remediation concentrations. Soil gas sampling at the end of the Second Quarter 2003 showed that VOC concentrations continued to decrease in most monitoring points during the first two quarters of 2003. Soil gas monitoring conducted on July 7, 2004 was performed after an approximate two week shut-down to allow for equilibration of the soil concentrations without the effects of the extraction system. Soil gas concentrations were within the same general range as those seen during the Second Quarter 2003 event. Concentrations increased in some of the monitoring points most notably the deeper intervals of MLG-1. This increase may be due to rebound effects (due to the two week shut-down).

SECTION 3

CONCLUSIONS

With the exception of temporary shutdowns for carbon changeouts, liquid generation in the knockout, occasional power outages, and issuance of a new SCAQMD permit, the SVE system has been in essentially continuous operation since its startup in October 2001. The system has been monitored regularly to optimize its performance and ensure SCAQMD permit compliance. Conclusions for the First Quarter 2005 are summarized below:

- The results to date indicate that the SVE system is successfully removing VOCs and steadily reducing their concentrations in soil.
- As of March 31, 2005, approximately 19,870 pounds of VOCs have been removed by the SVE system, 425 pounds of which were extracted and treated during the First Quarter 2005.
- Results of the soil gas surveys performed during the period from July 2001 through July 2004 confirm that the concentration of TCE in soil gas has decreased significantly since system startup, in many cases by one or two orders of magnitude.
- During the First Quarter 2005, the rate of decrease in the influent VOC concentration diminished somewhat, as did the VOC mass removal rate. Typical influent concentrations at the end of the quarter were below 1,000 ppmv and the mass removal rate was less than 200 pounds per month.

SECTION 4

REFERENCES

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Tables

Table 1
Operational Summary
Honeywell North Hollywood

Date	Hours of Operation	Milestone
10/11/01	0	System startup (extracting from all intervals)
10/20/01	124	Carbon changeout of first vessel
10/20/01	124	Began extracting from only 90-110 ft bgs
10/25/01	196	Carbon changeout of first vessel
11/27/01	791	Carbon changeout of first vessel
11/28/01	815	Began extracting from 90-110 and 140-160 ft bgs
12/03/01	958	Began extracting from 90-110, 140-160, and 180-200 ft bgs
12/19/01	1,314	December 2001 soil gas monitoring event
01/16/02	1,776	Carbon changeout of first vessel
02/23/02	2,306	Carbon changeout of first vessel
03/05/02	2,550	Replaced second vessel with a new vessel
03/11/02	2,594	Carbon changeout of first vessel
03/12/02	3,594	Closed dilution air valve further to increase vacuum
03/25/02	2,758	March 2002 soil gas monitoring event
03/28/02	2,764	Carbon changeout of both vessels
04/03/02	2,862	Carbon changeout of first vessel
04/12/02	3,023	Carbon changeout of both vessels
04/22/02	3,142	Carbon changeout of first vessel
05/01/02	3,327	Carbon changeout of both vessels
05/10/02	3,496	Carbon changeout of both vessels
05/17/02	3,639	Carbon changeout of first vessel
05/28/02	3,760	Carbon changeout of both vessels
06/07/02	3,926	Carbon changeout of both vessels
06/07/02	3,927	Dilution air valve fully closed to increase vacuum
06/14/02	4,077	Carbon changeout of both vessels
06/18/02	4,172	June 2002 soil gas monitoring event
06/21/02	4,179	Carbon changeout of first vessel
06/27/02	4,327	Carbon changeout of both vessels
07/03/02	4,470	Carbon changeout of first vessel
07/10/02	4,632	Carbon changeout of first vessel
07/18/02	4,826	Carbon changeout of both vessels
07/30/02	5,069	Carbon changeout of both vessels
08/06/02	5,255	Carbon changeout of first vessel
08/15/02	5,425	Carbon changeout of both vessels
08/23/02	5,591	Carbon changeout of first vessel
08/30/02	5,759	Carbon changeout of first vessel
09/06/02	5,927	Carbon changeout of first vessel
09/13/02	6,097	Carbon changeout of both vessels
09/20/02	6,261	Carbon changeout of first vessel
09/27/02	6,429	Carbon changeout of first vessel
10/04/02	6,594	Carbon changeout of first vessel
10/10/02	6,740	October 2002 soil gas monitoring event
10/10/02	6,744	Shutoff system for preliminary rebound testing
12/09/02	6,744	December 2002 soil gas monitoring event
01/22/03	6,744	System re-started
02/05/03	6,970	Carbon changeout of first vessel (reconfigured to be last)
02/18/03	7,108	Carbon changeout of first vessel (reconfigured to be last)
02/24/03	7,182	Carbon changeout of first and second vessel (reconfigured to be last)

Table 1
Operational Summary
Honeywell North Hollywood

Date	Hours of Operation	Milestone
03/04/03	7,367	Carbon changeout of first vessel (reconfigured to be last)
03/17/03	7,539	Carbon changeout of first vessel (reconfigured to be last)
03/24/03	7,708	March 2003 soil gas monitoring event
03/25/03	7,732	Carbon changeout of first vessel (reconfigured to be last)
03/26/03	7,734	Carbon changeout of first vessel (reconfigured to be last)
04/14/03	7,916	Carbon changeout of first vessel (reconfigured to be last)
04/23/03	8,112	Carbon changeout of first vessel (reconfigured to be last)
05/01/03	8,277	Carbon changeout of first and second vessel (reconfigured to be last)
05/09/03	8,421	Carbon changeout of first vessel (reconfigured to be last)
05/16/03	8,583	Carbon changeout of first vessel (reconfigured to be last)
05/23/03	8,742	Carbon changeout of first vessel (reconfigured to be last)
05/30/03	8,910	Carbon changeout of first vessel (reconfigured to be last)
06/06/03	9,074	Carbon changeout of first and second vessel (reconfigured to be last)
06/16/03	9,271	Carbon changeout of first vessel (reconfigured to be last)
06/25/03	9,486	Carbon changeout of first and second vessel (reconfigured to be last)
06/26/03	9,500	June 2003 soil gas monitoring event
07/03/03	9,673	Carbon changeout of first vessel (reconfigured to be last)
07/10/03	9,844	Carbon changeout of first vessel (reconfigured to be last)
07/21/03	10,070	Carbon changeout of first and second vessel (reconfigured to be last)
08/01/03	10,329	Carbon changeout of first vessel (reconfigured to be last)
08/12/03	10,592	Carbon changeout of first vessel (reconfigured to be last)
08/29/03	11,002	Carbon changeout of first vessel (reconfigured to be last)
10/03/03	11,477	Carbon changeout of first and second vessel (reconfigured to be last)
11/07/03	12,224	Carbon changeout of first and second vessel (reconfigured to be last)
11/21/03	12,558	Carbon changeout of first vessel (reconfigured to be last)
01/09/04	13,119	Carbon changeout of first vessel (reconfigured to be last)
01/27/04	13,272	Carbon changeout of first and second vessel (reconfigured to be last)
02/19/04	13,680	Carbon changeout of first vessel (reconfigured to be last)
02/25/04	13,919	Carbon changeout of first vessel (reconfigured to be last)
03/15/04	14,203	Carbon changeout of first and second vessel (reconfigured to be last)
04/02/04	14,433	Carbon changeout of first and second vessel (reconfigured to be last)
04/26/04	14,883	Carbon changeout of first vessel (reconfigured to be last)
05/14/04	15,234	Carbon changeout of first vessel (reconfigured to be last)
06/11/04	15,543	Carbon changeout of first vessel (reconfigured to be last)
06/23/04	15,661	Carbon changeout of first vessel (reconfigured to be last)
06/24/04	15,686	System turned off to allow for stabilization prior to soil gas sampling
07/07/04	15,686	Carbon changeout of first vessel (reconfigured to be last)
07/07/04	15,686	Soil gas monitoring event and system re-start
08/03/04	16,191	Carbon changeout of first vessel (reconfigured to be last)
08/19/04	16,508	Carbon changeout of first and second vessel (reconfigured to be last)
08/30/04	16,770	Began extracting from only 90-110 and 180-200 ft bgs
09/01/04	16,771	Carbon changeout of first and second vessel (reconfigured to be last)
09/21/04	17,086	Carbon changeout of first and second vessel (reconfigured to be last)
10/22/04	17,638	Carbon changeout of first and second vessel (reconfigured to be last)
11/15/04	17,942	Carbon changeout of first and second vessel (reconfigured to be last)
12/03/04	18,097	Carbon changeout of first vessel (reconfigured to be last)
12/29/04	18,433	Carbon changeout of first vessel (reconfigured to be last)
01/20/05	18,635	Carbon changeout of first and second vessel (reconfigured to be last)
02/09/05	18,991	Carbon changeout of first vessel (reconfigured to be last)
03/25/05	19,495	Carbon changeout of first and second vessel (reconfigured to be last)

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H ₂ O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
10/11/2001 9:43	0.0	178	84		4,700	4.7		1.6	2.11	0	0
10/12/2001 9:07	23.4	190	80		4,252	3.8		3.2	2.04	49	49
10/16/2001 13:34	123.9	186	95	2.5	4,782	1,620		3.1	2.24	215	264
10/20/2001 10:15	124.4	122	69	3.2	1,870	4.1		1.0	0.58	0.7	264
10/21/2001 15:05	153.4	120	83	3	1,871	1.2		0.9	0.57	17	281
10/22/2001 17:51	180.0	103	81	2.8	1,800	44.9		1.1	0.47	14	295
10/23/2001 9:30	195.7	109	68	2.85	1,450	83.0		1.0	0.40	6.8	301
10/25/2001 16:20	195.7	109	78	2.5	1,320	-		1.0	0.36	0.0	301
10/29/2001 8:09	284.4	108	66	2.85	1,160	0.1		0.1	0.32	30	331
10/31/2001 17:15	341.5	103	73		450	0.5		0.4	0.12	12	344
11/5/2001 16:55	461.1	103	76	1.5	253	9.6		1.8	0.07	11	355
11/13/2001 18:00	599.3	107	65	1.5	110	39.1		0.1	0.03	6.6	361
11/19/2001 12:15	791.1	115	78	2.5	101	78.4		0.2	0.03	5.7	367
11/28/2001 13:20	815.1	183	63	1	263	1.6		0.7	0.12	1.8	369
11/30/2001 10:30	860.2	179	67	3	106	-		-	0.05	3.8	373
12/3/2001 11:45	957.5	176	68	6	2,760	1.6		1.2	1.22	62	435
12/12/2001 13:30	1,151.4	170	68	3	1,020	1.5		1.0	0.44	161	596
12/19/2001 8:22	1,313.7	184	51	11	178	0.0		0.0	0.08	42	638
12/20/2001 14:55	1,344.2	188	70	4.5	3,052	9.7		1.2	1.45	23	661
1/7/2002 14:40	1,776.4	195	71	5.5	150	150		0.1	0.07	329	990
1/18/2002 13:10	1,826.4	200	70	5	285	0.3		0.0	0.14	5.4	995
1/18/2002 14:05	1,827.3	199	70	5.5	1,857	0.3		0.0	0.93	0.5	996
1/24/2002 12:30	1,970.2	197	71	8	85.5	0.7		0.6	0.04	70	1,065
1/24/2002 15:45	1,973.0	188	70	7	1,702	0.8		0.5	0.81	1.2	1,066
1/31/2002 11:50	2,138.0	183	65	5.7	405	0.5		0.8	0.19	82	1,148
1/31/2002 15:30	2,141.7	150	66	2.4	1,667	12.1		8.9	0.63	1.5	1,150
2/7/2002 12:35	2,305.9	144	80	3.5	166	502		2.0	0.06	57	1,207
2/25/2002 14:43	2,357.6	139	85	6.25	234	8.9		2.5	0.08	3.7	1,210
2/25/2002 17:05	2,360.0	170	85	13.5	1,685	40.2		9.4	0.72	1.0	1,211
2/27/2002 12:25	2,403.7	177	92	8	2,678	1.6		1.4	1.20	42	1,253
2/27/2002 14:30	2,405.7	190	92	10	2,724	7.4		17.6	1.30	2.5	1,256
3/7/2002 12:15	2,594.1	184	82	8	1,849	1,513		6.0	0.86	204	1,459
3/12/2002 15:45	2,594.7	185	77	8	1,530	3.4		3.4	0.71	0.5	1,460
3/12/2002 17:45	2,596.4	175	78	13	4,800	-		-	2.12	2.4	1,462
3/19/2002 13:15	2,618.8	182	79	13.2	2,400	3.7		4.2	1.10	36	1,498
3/19/2002 14:05	2,619.5	167	82	18.5	6,500	8.5		9.2	2.74	1.3	1,500
3/25/2002 14:20	2,763.9	170	76	18	>10,000	>10,000		4,100	4.29	507	2,007
3/28/2002 14:56	2,764.1	192	63	17.5	>10,000	-		-	4.84	0.9	2,008
3/28/2002 15:33	2,764.7	192	63		8,034	14.2		13.8	3.89	2.6	2,010
3/28/2002 15:49	2,764.9	184	76	12	7,116	-		-	3.30	0.7	2,011
4/1/2002 16:00	2,861.4	191	82	11.5	5,876	3,785		20.7	2.83	296	2,307
4/3/2002 15:16	2,861.8	174	72	13	3,895	4.2		10.1	1.71	0.9	2,308
4/10/2002 9:06	3,022.7	174	74	13.5	5,902	4,737		546	2.59	346	2,653
4/12/2002 18:05	3,023.1	176	71	12.5	6,597	4.5		2.5	2.93	1.1	2,655
4/17/2002 17:11	3,142.2	170	78	12.25	6,123	3,173		5.2	2.62	331	2,985
4/22/2002 16:05	3,143.4	165	91	11.5	8,567	5.4		6.0	3.56	3.7	2,989
4/30/2002 7:05	3,326.4	169	68	12.5	6,468	3,842		433	2.76	578	3,567
5/1/2002 9:43	3,327.2	159	76	11.5	4,747	-		-	1.90	1.9	3,569
5/1/2002 9:52	3,327.3	182	81	16	6,979	3.7		4.0	3.20	0.3	3,569
5/8/2002 10:18	3,495.8	178	81	15.5	>2,000 ^b	1,900		550	-	-	-
5/10/2002 10:51	3,496.2	163	81	15	4,543	-		-	1.87	428	3,997
5/10/2002 11:16	3,496.6	168	92	21.75	8,618	6.2		3.5	3.65	1.1	3,999

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H2O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
5/10/2002 14:11	3,498.7	184	99	22.5	7,684	6.2		8.2	3.56	7.6	4,006
5/16/2002 10:15	3,638.5	177	81	24	>10,000	>10,000		18.2	4.46	561	4,567
5/17/2002 15:00	3,639.0	176	91	22	9,956	3.3		12.2	4.42	2.2	4,569
5/22/2002 16:17	3,760.3	179	77	24	8,341	4,594		1,424	3.76	496	5,066
5/28/2002 15:50	3,760.7	180	89	23	5,772	1.5		1.3	2.62	1.3	5,067
6/4/2002 12:41	3,925.5	170	95	24.5	4,731	6,808		38.4	2.03	383	5,450
6/7/2002 12:38	3,925.9	180	87	24	4,768	-		-	2.16	0.8	5,451
6/7/2002 13:40	3,927.0	181	100	27	6,938	5.3		4.4	3.17	2.9	5,454
6/13/2002 7:35	4,076.8	184	78	28	>10,000	4,322		151	4.64	585	6,038
6/14/2002 10:24	4,077.5	183	96	28	5,760	2.4		2.0	2.66	2.6	6,041
6/18/2002 16:15	4,179.3	165	91	26	9,241	2,600		39.1	3.84	331	6,372
6/21/2002 9:25	4,179.9	178	73	27	5,361	0.7		0.0	2.41	1.9	6,374
6/28/2002 11:33	4,348.4	164	97	26	4,783	5.0		4.6	1.98	369	6,743
7/3/2002 13:57	4,470.8	162	95	25	4,209	2,053		6.6	1.72	226	6,969
7/10/2002 8:15	4,631.5	166	87	26	3,620	2,340		11.5	1.52	260	7,229
7/10/2002 9:42	4,632.2	193	90	29	3,806	9.1		8.9	1.85	1.2	7,230
7/29/2002 11:04	5,068.8	190	-	-	3,465	3,117		1292	1.66	767	7,997
7/30/2002 12:45	5,089.0	189	93	28	3,090	4.2		4.1	1.47	32	8,029
8/6/2002 11:33	5,255.6	169	97	27	3,039	331		14.1	1.29	231	8,259
8/6/2002 12:26	5,256.1	170	101	25	2,949	7.2		8.2	1.26	0.6	8,260
8/14/2002 13:06	5,424.7	169	97	26	3,168	1,895		51	1.35	220	8,480
8/15/2002 10:00	5,424.9	175	82	28	2,660	0.2		0.3	1.17	0.3	8,480
8/23/2002 8:00	5,591.2	176	79	28	3,017	1,277		5.4	1.34	209	8,689
8/23/2002 9:22	5,591.9	174	82	27	3,313	5.4		4.7	1.45	1.0	8,690
8/30/2002 8:11	5,758.7	172	79	28	3,339	2,789		18.7	1.45	242	8,932
8/30/2002 9:03	5,758.9	171	71	27	3,062	1.5		16	1.32	0.3	8,932
9/6/2002 8:11	5,926.7	173	80	27	2,088	1,501		27.5	0.91	187	9,120
9/6/2002 9:15	5,926.8	171	87	26	2,241	0.5		20.1	0.97	0.1	9,120
9/13/2002 11:06	6,096.6	167	95	-	2,272	1,378		116	0.96	163	9,283
9/13/2002 13:35	6,097.1	186	98	28	2,272	-		-	1.07	0.5	9,284
9/20/2002 8:39	6,260.6	162	-	28	2,130	1,576		15	0.87	158	9,442
9/20/2002 10:00	6,260.8	158	89	26	2,028	1.5		0.9	0.81	0.2	9,442
9/27/2002 10:40	6,428.6	150	81	27	1,587	1,360		5.6	0.60	118	9,560
9/27/2002 11:55	6,429.9	178	82	28	1,914	4.0		2.0	0.86	0.9	9,561
10/4/2002 8:50	6,594.7	172	-	28	2,017	1,276		14.3	0.87	143	9,704
10/10/2002 14:00	6,744.0	180	87	30	204	108		64.9	0.09	72	9,776
1/22/2003 10:45	6,813.5	182	72	28.5	2,120	1,007	7.5	1.7	0.97	37	9,813
1/23/2003 10:10	6,836.3	178	77	27	2,326	468	17.2	4.7	1.04	23	9,836
1/24/2003 11:01	6,861.2	181	85	27	2,340	625	27	17.2	1.07	26	9,862
1/24/2003 15:47	6,866.0	189	84	28	2,940	650	9.9	13.2	1.40	5.9	9,868
1/27/2003 10:50	6,866.6	192	75	27	2,850	584	5.5	13.6	1.38	0.8	9,869
1/28/2003 12:30	6,892.5	186	87	27	1,975	540	3.5	5.9	0.93	30	9,899
1/29/2003 11:35	6,915.3	185	84	28	1,948	890	3.2	6.8	0.91	21	9,920
1/30/2003 18:55	6,934.7	192	66	28	2,448	1,260	16.5	10.8	1.19	20	9,940
1/31/2003 18:00	6,970.0	190	83	28	3,280	1,221	65.2	8.5	1.57	49	9,989
2/5/2003 12:10	6,970.4	187	72	28	2,350	21.8	9.3	4.2	1.11	0.5	9,989
2/6/2003 13:20	6,995.6	189	87	28	2,597	104	29.2	23.8	1.24	30	10,019
2/7/2003 16:30	7,022.8	188	78	29	2,280	358	8.6	14.6	1.08	32	10,050
2/10/2003 5:45	7,023.3	188	50	28	2,225	232	7.9	0.0	1.05	0.5	10,051
2/11/2003 16:00	7,057.7	185	74	28	2,320	310	7.6	2.2	1.08	37	10,088
2/13/2003 17:45	7,107.3	189	74	27	2,353	981	95.1	30.2	1.12	55	10,142
2/21/2003 16:25	7,181.3	185	85	28	2,750	783	164	13.6	1.28	89	10,231

004600

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H ₂ O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
2/24/2003 13:45	7,182.5	193	65	28	2,366	31.6	16.5	10.2	1.15	1.5	10,233
2/27/2003 11:30	7,251.8	190	75	30	2,742	41.5	30.5	15.1	1.31	85	10,318
3/3/2003 17:30	7,354.0	185	73	28	1,755	752	19.5	12.3	0.82	109	10,427
3/11/2003 13:40	7,539.0	189	88	29	2,978	1,518	169	26.4	1.42	207	10,634
3/17/2003 11:50	7,539.9	187	73	22	3,572	46.9	7.5	3.5	1.68	1.4	10,636
3/25/2003 12:27	7,732.5	196	100	20	>10,000	4,500	500	105	4.94	638	11,274
3/26/2003 13:45	7,734.3	187	92	22	1,750	47.0	8.1	3.4	0.83	5.2	11,279
4/1/2003 12:45	7,749.1	188	85		2,582	29.8	10.1	5.7	1.22	15	11,294
4/8/2003 12:15	7,915.5	187	99	28	3,150	1322	51.8	6.6	1.49	225	11,519
4/15/2003 12:00	7,951.6	185		29	2,219	110	34.1	7.5	1.04	45	11,565
4/24/2003 13:45	8,112.0	208		26.6	1,760	266	41.9	3.7	0.92	157	11,722
5/1/2003 11:45	8,277.9	200	83	22.5	1,580	935	308	110	0.80	143	11,865
5/7/2003 12:00	8,420.8	185		27	1,434	272	65.2	23.3	0.67	105	11,969
5/9/2003 13:30	8,421.4	190	80	29	1,658	62.6	28.5	3.2	0.79	0.4	11,970
5/16/2003 7:40	8,583.7	189	77	21.5	3,500	1180	230	100	1.67	200	12,169
5/23/2003 10:00	8,742.5	195	90	27	1,950	46.5	10.7	3.5	0.96	209	12,378
5/30/2003 12:45	8,910.8	186	90	27	1,740	0.5	39.9	0	0.82	149	12,527
6/6/2003 8:05	9,074.2	196	77	22.5	1,829	535	220	105	0.90	141	12,668
6/16/2003 14:40	9,271.3	173	109	20	2,950	45.1	0	0	1.29	216	12,884
6/25/2003 14:00	9,485.9	166	106	20	1,583	13.6	9.4	7.7	0.66	209	13,093
7/3/2003 9:40	9,673.4	167	97	19.5	2,119	113	3.4	2.5	0.89	146	13,239
7/10/2003 13:15	9,843.9	175	105	19	2,858	246	38.7	3.8	1.26	184	13,422
7/21/2003 10:30	10,068.9	175	101	21	3,028	129	2.3	17.8	1.34	292	13,714
7/21/2003 13:00	10,069.9	177	104	20	3,258	11.7	8.6	7.3	1.45	1.4	13,716
8/1/2003 9:15	10,329.4	172	91	20.5	4,263	34.8	0	15.4	1.85	429	14,144
8/12/2003 8:00	10,592.2	153	88	21	2,517	782	8.6	9.2	0.97	371	14,515
8/12/2003 9:10	10,592.6	170	90	25	2,330	6.9	6	5.4	1.00	0.4	14,515
8/19/2003 13:55	10,765.2	165	104	21	1,431	318	5.9	5.3	0.60	138	14,653
8/29/2003 12:05	11,002.6	153	99	20	1,493	1.7	8.2	0	0.58	139	14,792
9/29/2003 16:00	11,477.2	194	85	22.5	2,454	2211	315	175	1.20	422	15,213
10/3/2003 15:25	11,477.5	170	78	22	1,296	47.6	1.4	0.7	0.56	0.3	15,214
10/6/2003 9:30	11,544.0	168	81	21	1,309	577	22.3	18.1	0.55	36.9	15,250
10/17/2003 15:40	11,813.8	171	85	21	932	287	32.8	8.1	0.40	129.0	15,379
10/24/2003 10:45	11,976.9	161	79	22	986	357	24.5	12.8	0.40	65.4	15,445
11/3/2003 17:15	12,224.3	191	63	23	1,863	690	435	244	0.90	160.5	15,605
11/7/2003 14:45	12,224.7	171	73	23	983	39.5	1.0	0.1	0.42	0.3	15,606
11/13/2003 13:40	12,367.6	175	84	22.5	3,626	1222	41.3	3	1.60	144.6	15,750
11/21/2003 11:50	12,558.8	173	77	23	1,364	312	8.4	0	0.59	209.8	15,960
12/8/2003 14:30	12,573.7	174	7.1	24	1,062	170	7.3	3.3	0.47	7.9	15,968
12/19/2003 11:15	12,672.8	175 ^c	67	24.5	927	245	11.5	3.5	0.41	43.4	16,011
1/6/2004 13:00	12,954.3	175 ^c	55	21	1,988	1201	69.1	30.3	0.88	181.0	16,192
1/16/2004 11:00	13,118.8	175 ^c	71	24	1,108	249	22.8	31.7	0.49	112.4	16,305
1/22/2004 15:30	13,267.4	175 ^c	71	22	1,236	414	254	152	0.55	76.8	16,382
1/27/2004 15:25	13,272.3	175 ^c	81	23	838	77.1	22.8	1.8	0.37	2.2	16,384
2/6/2004 14:15	13,511.3	175 ^c	77	23	930	377	31.2	4.4	0.41	93.2	16,477
2/13/2004 15:15	13,680.1	175	70	22	1,141	554	120	23.8	0.50	77.1	16,554
2/23/2004 15:15	13,918.7	169	72	21	928	345	175	6.4	0.40	107.2	16,661
3/4/2004 14:30	13,993.7	169	85	21	1,101	373	10.6	15.3	0.47	32.4	16,694
3/11/2004 15:45	14,162.9	178	85	19	1,997	1353	118	46.3	0.90	115.5	16,809
3/17/2004 6:45	14,202.9	186	74	22	969	14.9	10.9	1.1	0.45	27.0	16,836
3/26/2004 14:55	14,426.7	181	85	21	1,046	486	80.1	75.2	0.48	104.3	16,941

004601

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H ₂ O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
4/2/2004 15:25	14,433.4	163	88	19	1,309	3.5	4.6	4.2	0.54	3.4	16,944
4/9/2004 12:00	14,597.1	165	93	20	973	368	39.2	33.1	0.40	77.2	17,021
4/21/2004 8:00	14,883.0	175	75	20	817	413	112	12.9	0.36	109.4	17,131
5/11/2004 9:00	15,233.9	178	93	19.5	1,335	1240	78.8	22.3	0.60	168.4	17,299
5/20/2004 8:20	15,376.0	185	78	21	1,074	384	39.5	4.2	0.50	78.2	17,377
5/27/2004 8:40	15,543.0	182		21.5	1,166	743	337	21.5	0.54	86.5	17,464
6/11/2004 11:00	15,543.0	180	92	20	914	205	34.1	6.5	0.41	0.0	17,464
6/16/2004 10:20	15,660.8	178	80	20.5	1,214	443	60.8	8.4	0.54	56.5	17,520
6/24/2004 10:40	15,686.0	171	109	18.75	1,218	127	62.7	12.9	0.53	13.5	17,534
7/28/2004 14:45	16,188.4	174	99	20	1,920	1142	139	9.3	0.84	343.5	17,877
8/10/2004 9:30	16,359.4	154	98	18.5	3,346	715	25.9	0	1.30	183.1	18,060
8/10/2004 9:30	16,359.4	180	98	18.5	3,346	715	25.9	0	1.52	0.0	18,060
8/16/2004 14:27	16,508.3	175	100	20.25	4,657	6757	1816	108.1	2.05	266.0	18,326
8/19/2004 12:35	16,508.8	175	100	21.5	1,131	276	9.8	5.8	0.50	0.6	18,327
8/30/2004 11:30	16,771.2	179	98	21	1,303	1207	680	244	0.59	142.6	18,469
9/1/2004 10:45	16,771.2	173	105		1,084	150		5.9	0.47	0.0	18,469
9/14/2004 12:50	17,086.3	155	101	39	1,318	714	177	88.6	0.52	155.6	18,625
9/17/2004 0:00	17,086.3	180	101	35	1,300			0	0.59	0.0	18,625
9/27/2004 0:00	17,157.9	180	109	39	888			<1.0	0.40	35.5	18,661
10/22/2004 0:00	17,638.1	187	101	50	1,810			52	0.85	301.7	18,962
10/22/2004 14:00	17,639.7	183	89	45	1,225	59.6	30.2	0.0	0.57	1.1	18,963
11/8/2004 9:00	17,942.7	183	83	45	1,800	715	200	50.8	0.83	211.5	19,175
11/23/2004 11:45	18,096.7	172	78	45	1,850	1653	70.2	12.2	0.80	125.7	19,301
12/3/2004 7:55	18,097.4	182	53	45	805	11.9	9.8	2.0	0.37	0.4	19,301
12/17/2004 14:00	18,433.1	140	69	40	1,388	628	204	28.5	0.49	144.2	19,445
12/29/2004 9:00	18,433.1	176	62	46	1,037	-	-	4.6	0.46	0.0	19,445
1/14/2005 15:00	18,635.3	140	73	40	792	509	218	62.1	0.28	74.8	19,520
1/20/2005 12:30	18,635.8	191	70	46	565	58.6	17	7.1	0.27	0.1	19,520
2/4/2005 8:30	18,991.0	151	62	41	990	506	215	38.6	0.38	115.3	19,635
2/9/2005 9:30	18,991.6	176	72	46	886	104	6.6	3.3	0.39	0.2	19,636
2/28/2005 15:00	18,993.1	180	71	46	1,127	234	28.1	4.6	0.51	0.7	19,636
3/22/2005 14:00	19,494.6	159	65	27	1,033	677	-	77.3	0.41	232.1	19,868
3/25/2005 10:00	19,494.6	175	69	46	997	63.2	12	2.4	0.44	0.0	19,868

- = Not Measured

^a = As measured with a PID calibrated to Hexane

^b = A PID with a lower range was used. Influent concentrations may be underrepresented. This data was not used to calculate

^c = Flow readings could not be taken due to a malfunction with the flow meter the flow is assumed to remain constant.

Table 3
Soil Gas Analytical Summary
Honeywell North Hollywood

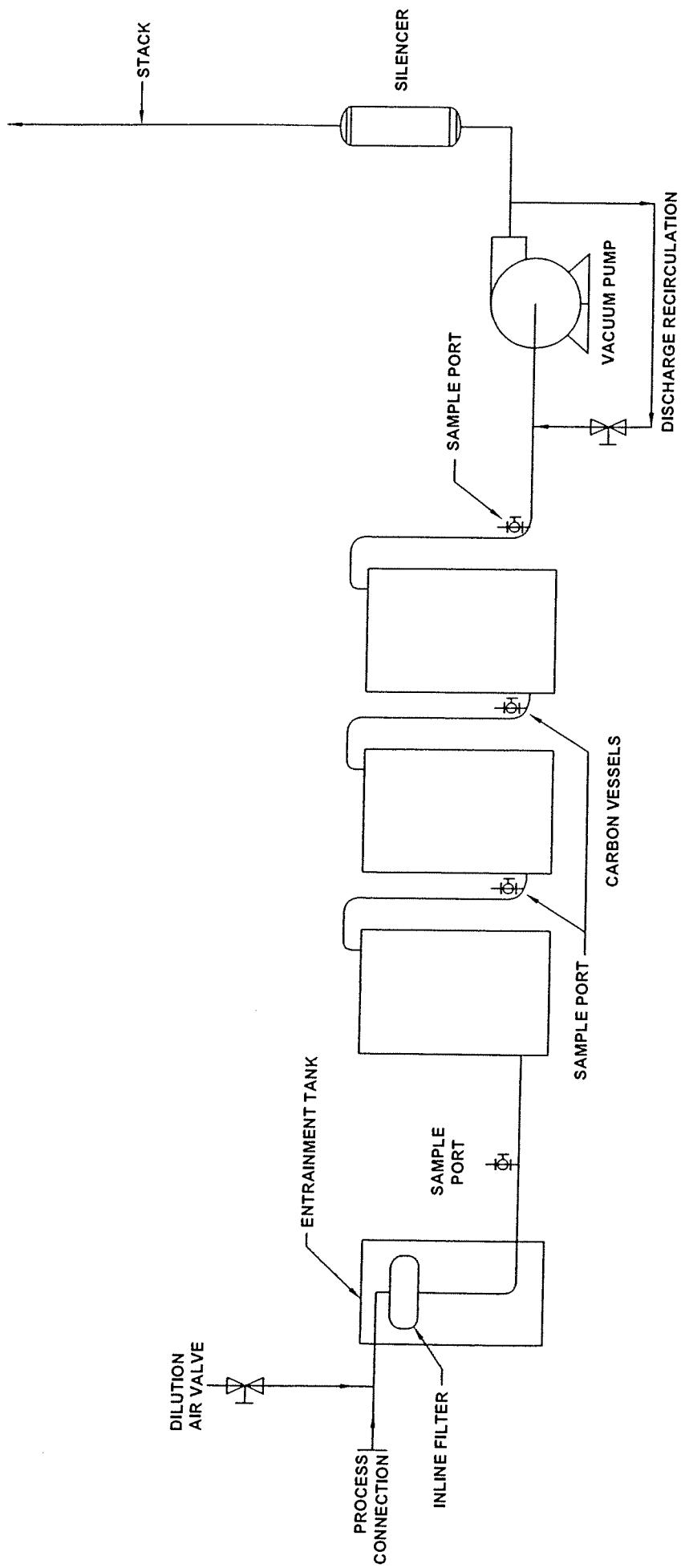
Well Interval	TCE (µg/L)									PCE (µg/L)								
	7/13/01	12/19/01	3/15/02	6/18/02	10/10/02	12/9/02	3/24/03	6/26/03	7/7/04	7/13/01	12/19/01	3/15/02	6/18/02	10/10/02	12/9/02	3/24/03	6/26/03	7/7/04
GW-7-50	96	42	25	14	2.3	13	1.7	8.7	4.8	2.7	2.0	<1	1.1	<1	1.4	<1	<1	<0.2
GW-7-150	500	250	60	26	13	14	5.8	11	5.4	<5	15	<2.5	16	15	22	5.3	8.2	2.4
GW-10-50	280	28	28	17	<1	3.7	<1	18	29	2.2	1.6	<1	1.1	<1	<1	<1	2.0	2.6
GW-10-150	3,100	1,300	590	52	8	16	6.9	NS	19	<80	<50	<25	<1	<1	<1	<1	NS	10
EW-1-70	130	52	31	22	4.7	27	9.1	18	9.0	11	7.4	7.2	6.6	1.3	12	3.3	7.1	8.8
EW-1-110	6,600	3,700	2,700	130	180	270	120	190	250	<200	<100	<50	3.6	3.3	7.0	1.4	3.7	11
EW-1-160	10,000	5,300	2,700	840	160	170	140	200	110	<200	<100	<50	<20	<10	3.1	21	17	4.0
EW-1-200	2,000	2,800	1,300	400	140	109	39	250	200	<200	<50	<50	58	27	3.0	6.6	43	6.5
MLG-1-50	11	4.4	75	3.7	51	6.5	10	4.5	15	<1	<1	<1	<1	2	<1	<1	<1	<0.2
MLG-1-100	8,600	5,900	5,000	370	36	270	88	39	56	<200	<100	<50	4.9	<2.5	8.8	<2.5	2.9	3.6
MLG-1-150	10,000	7,300	6,800	850	77	590	53	41	64	<200	<100	<100	<40	<2.5	24	<10	11	6.3
MLG-1-200	6,400	2,800	2,400	2,000	380	670	710	750	860	<80	<100	<50	250	<50	88	10	15	30

Note: All samples were analyzed by GC/MS.

Note: All samples were analyzed by a mobile laboratory in the field
Jul-01 sample data reflects pre-remediation baseline.
Dec-02 sample data reflects initial rebound testing (system turned off 10/10/02)
Data are plotted graphically on Figure 6

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Figures



NOT TO SCALE

Figure 3

SVE Process Flow Diagram

Honeywell North Hollywood

PARSONS

Pasadena, CA

Appendix A
VOC Mass Removal
Calculations

APPENDIX A

VOC MASS REMOVAL CALCULATIONS

$$\frac{\text{ppmv VOCs in influent}^a}{10^6} \times \frac{\text{extraction flow rate (cfm)}}{\text{cfm}} \times \frac{60 \text{ minutes}}{\text{hour}} \times \frac{28.3 \text{ L}}{\text{ft}^3} \times \frac{1 \text{ mol}}{24.5 \text{ L}} \times \frac{0.1314 \text{ kg}}{\text{mol of VOCs}^b} \times \frac{2.2046 \text{ lb}}{1 \text{ kg}} \times \frac{\text{correction factor hexane to TCE}}{(0.126)}$$

= pounds of VOCs extracted per hour (extraction rate)

$$\frac{\text{Extraction rate @ time T1} + \text{extraction rate @ time T2}}{2} \times (T2 - T1) = \text{VOCs extracted between T1 and T2}$$

Thus, find the amount of VOCs extracted between each consecutive site visit and the sum to date provides the cumulative total VOCs extracted.

^aAs measured with a PID calibrated to hexane.

^bMolecular weight of TCE (131.4 g/mol).

**GROUNDWATER MONITORING REPORT
FIRST QUARTER 2005
HONEYWELL NORTH HOLLYWOOD SITE
11600 SHERMAN WAY, NORTH HOLLYWOOD, CALIFORNIA**

Prepared For

**HONEYWELL INTERNATIONAL INC.
2525 West 190th Street
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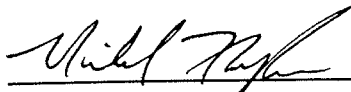
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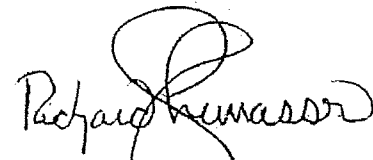
April 15, 2005

Prepared by

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Richard M. Thomasser, P.G.
Principal Hydrogeologist

004608

Groundwater Monitoring Report Honeywell North Hollywood Site

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ACRONYMS AND ABBREVIATIONS

CAO	Cleanup and Abatement Order
cis-DCA	cis-Dichloroethane
DCA	Dichloroethane
DCE	Dichloroethene
DO	Dissolved oxygen
EC	Electrical conductivity
ft msl	Feet above mean sea level
GSA	Geological Survey of America
Honeywell	Honeywell International, Inc.
Hydrologue	Hydrologue Inc.
IGRAP	Interim Groundwater Remedial Action Plan
IRM	Interim Remedial Measures
Kaiser	Kaiser Permanente
MCL	Maximum contaminant level
MS/MSD	Matrix spike/matrix spike duplicate
mg/kg	Milligram per kilogram
µg/L	Microgram per liter
MWH	MWH Americas, Inc.
NHOU	North Hollywood Operable Unit
ORP	Oxidation-reduction potential
PCE	Tetrachloroethene
RAP	Remedial Action Plan
RWQCB	Regional Water Quality Control Board, Los Angeles Region
SIGRAP	Soil and Interim Ground Water Remedial Action Plan
SVE	Soil vapor extraction
TCE	Trichloroethene
USEPA	U.S. Environmental Protection Agency
VOCs	Volatile organic compounds

SECTION 1.0

INTRODUCTION AND BACKGROUND

This report presents details of the quarterly groundwater monitoring activities conducted at the Honeywell North Hollywood site (Site), located at 11600 Sherman Way, North Hollywood, California (Figure 1). This First Quarter 2005 Groundwater Report was prepared by MWH Americas, Inc. (MWH) on behalf of Honeywell International, Inc. (Honeywell). The purpose of groundwater monitoring at the Site is to periodically evaluate the concentrations of chromium, volatile organic compounds (VOCs), and other “emerging chemicals” in groundwater. Field work and related laboratory analyses followed methods and protocols outlined in Appendix A and the June 30, 2003 Revised Remedial Investigation Workplan for Chromium and Emerging Chemicals (Parsons 2003b) and were intended to meet the requirements of the Regional Water Quality Control Board (RWQCB) Cleanup and Abatement Order (CAO) No. R4-2003-037 (RWQCB 2003a).

1.1 SITE DESCRIPTION

The Site is located in the eastern part of the San Fernando Valley and is bordered by Sherman Way to the north, Union Pacific Railroad right-of-way to the south, Lankershim Boulevard to the West, and commercial buildings to the East (Figures 1 and 2). From 1941 through 1992, Bendix Corporation and later AlliedSignal/Bendix Electrodynamics (Bendix was purchased by AlliedSignal, Inc., now known as Honeywell International, Inc.) used the Site for manufacturing hydraulic and pneumatic valves. The former manufacturing facility consisted of two complexes, Plant 1 (which occupied the central portion of the Site) and Plant 2 (which occupied the eastern portion of the Site). During the 1990s, all of the buildings and parking areas were removed from the Site. The Site was then subdivided and re-developed as three separate parcels; the western most parcel (known as the ‘Kaiser Property’) is occupied by Kaiser Permanente, the middle parcel (known as the ‘Western Parcel’) is occupied by Public Storage, Inc., and the eastern most parcel (known as the ‘Eastern Parcel’) is occupied by Home Depot, Inc. Figure 2 shows the current layout, as well as the approximate location of former Plants 1 and 2.

1.2 PREVIOUS INVESTIGATIONS, REMEDIATION, AND REGULATORY HISTORY

Since the late 1980s, phased investigation and soil remediation efforts at the Site have been conducted in coordination with the RWQCB, the lead regulatory agency. The early investigations focused on evaluating the nature and extent of VOCs and metals in the subsurface at the Site.

For many years, VOC-impacted groundwater in the San Fernando Valley Basin has been monitored as part of investigation activities associated with the San Fernando Valley Superfund site. The Honeywell Site is located within the North Hollywood Operable Unit (NHOU). At the request of the RWQCB in a letter dated September 21, 2004, VOCs were

TRANSMITTAL



3050 Saturn Street, Suite 205
Brea, California 92821

Date: April 14, 2005

Tel: 714-646-2020

Fax: 714-986-9834

To: Ms. Rachel Lofton (USEPA)
Mr. Dixon Oriola and Alex Lapostol (CRWQCB)
Mr. Benny DeHghi (Honeywell Inc.)
Mr. John Lindquist (CH2M Hill)
Mr. Ron Newquist (Kaiser Permanente)
Mr. Joe Cox (Home Depot)
Ms. Nergus Choudry (Public Storage)

Re: North Hollywood
Site

From: Lisa Hall/Michael Flaughner

A handwritten signature in a circle, likely belonging to Michael Flaughner.

The following items are:

<input type="checkbox"/>	Requested	<input type="checkbox"/>	Enclosed
<input checked="" type="checkbox"/>	Report	<input type="checkbox"/>	Specification
<input type="checkbox"/>	Test Result	<input type="checkbox"/>	Prints

No. of Copies	Description
1	First Quarter 2005 Groundwater Monitoring Report, Honeywell North Hollywood Site (hard copy)

This data is submitted:

<input type="checkbox"/>	At your request	<input type="checkbox"/>	For your action
<input type="checkbox"/>	For your approval	<input checked="" type="checkbox"/>	For your files
<input type="checkbox"/>	For your review	<input type="checkbox"/>	For your information

General Remarks:

004614

required to be analyzed in all wells in future quarterly groundwater monitoring events (RWQCB 2004).

A Site-wide chromium investigation was conducted in June and July 1993. Approximately 120 cubic yards of chromium-impacted soil was excavated and removed from the former Plant 2 area in October 1994 (Hydrologue Inc. [Hydrologue] 1995). Additional chromium-impacted soil was removed using a bucket auger in 1997 at 'hot spot' areas beneath former Plant 1 area (Earth Tech 1997) to fulfill a RWQCB soil closure requirement. RWQCB granted soil closure for the Eastern and Western Parcels in August 1997 (RWQCB 1997a and 1997b). An additional 230 tons of chromium-impacted soil was removed from the former Plant 1 area from December 1999 to March 2000 during the construction of the present-day Public Storage facility.

Groundwater assessment commenced with the installation of six groundwater monitoring wells (GW-1 through -6) in the Eastern and Western Parcels in 1991. Four additional wells (GW-7 through -10) were installed in the adjacent Kaiser Property in 1993. In July 1997 and February 1998, groundwater samples were analyzed for both total and hexavalent chromium in wells GW-3 and GW-4. Follow-on monitoring for total and hexavalent chromium continued on all wells in July 1998, July 1999, and February 2001.

In 2001, the RWQCB requested the preparation and submittal of a technical report containing, among other things, a summary of all available chromium analytical data at the Site (RWQCB 2001a). In response, Honeywell submitted a Technical Report and Remedial Investigation (RI) Workplan for Chromium to the RWQCB on December 7, 2001 (Parsons 2001). The document provided the requested summary and set forth a proposed program of chromium assessment for soil and groundwater. Additionally in late 2001, a soil vapor extraction (SVE) system was installed in the south parking lot of the Kaiser property to address vadose zone VOCs.

In late February 2003, the RWQCB issued CAO No. R4-2003-0037 (RWQCB 2003a), which required the assessment of emerging chemicals and heavy metals (including total and hexavalent chromium) in the unsaturated and saturated zones beneath the Site. Because the previously submitted RI Workplan addressed many of the assessment requirements contained in the CAO, an Assessment Workplan Addendum that addressed the Board's new requirements was prepared and submitted on March 31, 2003 (Parsons 2003a). The RWQCB provided comments on the December 7, 2001 RI Workplan and the March 31, 2003 Assessment Addendum Workplan in a letter dated May 27, 2003 (RWQCB 2003b). In its letter, the RWQCB required an expanded assessment of soil and groundwater and the preparation and submittal of a revised RI Workplan and an interim groundwater Remedial Action Plan (RAP).

In response to the request for an expanded assessment for soil, Honeywell submitted the Revised Remedial Investigation Workplan for Chromium and Emerging Chemicals, dated June 30, 2003 (Parsons 2003b). On October 23, 2003, the RWQCB approved the Revised Workplan with some modifications (RWQCB 2003b). This Revised Workplan included drilling of 12 soil borings and the installation of a well pair (GW-14A and GW-14B). The

work was executed in 2003 and the results were provided in the report *Remedial Investigation Report for Chromium and Emerging Chemicals*, dated February 27, 2004 (Parsons 2004a).

To address the RWQCB requirement for groundwater interim actions, Honeywell submitted the Interim Groundwater Remedial Action Plan for Chromium (IGWRAP), dated June 30, 2003 (Parsons 2003c). This IGWRAP called for groundwater treatment by *in-situ* methods at the source area and temporary hydraulic containment along the Site boundary. Honeywell also submitted an Interim Remedial Measures (IRM) Workplan for Soil on April 15, 2004 (Parsons 2004c). A Soil and Interim Ground Water Remedial Action Plan (SIGRAP) was submitted on July 30, 2004 (MWH 2004a). This combined SIGRAP supercedes the previously submitted IGWRAP and IRM Workplan for Soil.

In November 2004, Honeywell commenced installation of 4 offsite monitoring wells to the south and southeast of the site. The Revised Workplan for offsite well installations (Parsons 2004d), as amended by the Revised Amendment to Off-Site Groundwater Monitoring Well Installation Workplan and Response to Amended RWQCB CAO No. R4-2003-0037 (MWH 2005) was approved by both the RWQCB and the EPA. All four of the wells will be completed as multi-screened wells with Barcad samplers to allow for discrete vertical groundwater sampling. As of the date of this report, two wells GW-12 and GW-17 have been completed and wells GW-16 and GW-11 are being developed and having the Barcad samplers installed. Figure 2 shows the locations of the four new offsite wells. Data from well drilling, development, and initial well sampling will be reported in a well completion report no later than June 30, 2005. These wells will be added to the routine groundwater monitoring program during Second Quarter 2005.

SECTION 2.0

GEOLOGY AND HYDROGEOLOGY

The Site is located in the San Fernando Valley, a physiographic basin that is bounded by the San Gabriel Mountains to the north and the Santa Monica Mountains to the south. From a geologic perspective, the valley is underlain by a Holocene-age sedimentary basin that covers nearly 20 square miles. Much of the basin consists of recent alluvium with local thickness that approaches approximately 1,000 feet. The Site is located in the eastern part of the basin, where coarse sandy and gravelly alluvium was deposited by braided streams that originated in the nearby San Gabriel Mountains (Geological Survey of America [GSA] 1986). Previous drilling and logging indicates alluvium beneath the Site varies in composition and texture, as expected in this type of depositional environment. In general, the alluvium is dominated by interbedded sand, gravelly sand, sandy gravel, and gravel.

The Site is hydrogeologically situated in the San Fernando Groundwater Basin, part of the water management area known as the Upper Los Angeles River Area. Water rights in the basin were adjudicated by court decree in 1968 and subsequent extraction by water rights holders have been administered by a basin watermaster. Throughout the basin, significant amounts of groundwater are extracted for the purposes of dewatering, groundwater supply wells, and groundwater remediation. Water supply wells, such as the wells that comprise the various City of Los Angeles well fields, form an important source of drinking water in the area. A basin-wide groundwater remediation program relies on extraction and aboveground treatment to address widespread groundwater contamination due to VOC, nitrate, and chromium.

The general direction of groundwater flow in the basin is east-southeast. Groundwater extraction associated with the municipal well field(s) locally influence, and in some instances, reverse the otherwise natural direction of groundwater flow. The North Hollywood Well Field, a northwest-southeast array of 29 water supply wells located approximately west and south of the Site, has a combined extraction capacity of approximately 20,000 acre-feet per year. The Rinaldi-Toluca Well Field, located approximately northwest of the Site, has an extraction capacity of approximately 30,000 acre-feet per year. Appendix B provides hydrographs for Site monitoring wells. Figure B-1 illustrates the combined hydrographs for monitoring wells GW-1 through GW-10, GW-14A, and GW-14B from July 1991 through February 2005. Table 1 presents well construction details for all on-site wells. During the period 1991 through 2005, the water table elevation lowered by as much as 60 feet. These fluctuations in the water table beneath the Site are attributed to extraction from the well fields.

SECTION 3.0

GROUNDWATER FIELD ACTIVITIES AND RESULTS

Field activities for the First Quarter 2005 monitoring event were performed between February 22 and 25, 2005. These activities included groundwater depth measurements, purging, and sampling of the 13 onsite wells that comprise the current monitoring network at the Site (Figure 2). As discussed in Section 1.2, four new offsite wells are under construction. These wells were not fully completed for incorporation into the First Quarter 2005 monitoring event. However, these wells will be added to routine sampling during Second Quarter 2005. A report detailing well construction, development, and initial sampling results of the 4 new offsite wells will be submitted on or before June 30, 2005.

All field activities were conducted in accordance with field sampling protocols outlined in Appendix A, the Site-Specific Health and Safety Plan for Remediation and Groundwater Monitoring Activities (MWH 2004b), and under the direct supervision of a California-licensed professional geologist.

3.1 GROUNDWATER DEPTH MEASUREMENTS

Depth to groundwater was measured and recorded on February 22, 2005. The data collected is consistent with measurements collected from previous monitoring events. Table 2 presents depth to water and groundwater elevation data. A summary of water level data since First Quarter 2003 is presented on Table C-1 in Appendix C.

3.2 GROUNDWATER LEVEL RESULTS

During the First Quarter 2005 monitoring event, groundwater elevations ranged from 467.07 feet above mean sea level (ft msl) in well GW-6 to 468.72 ft msl in well GW-9. Groundwater elevations were consistently higher than the previous elevations measured in November 2004 by an average of 5.7 feet. Present elevations are within the historical range at the Site (Figure B-1 in Appendix B). Groundwater at the Site exhibited an average horizontal hydraulic gradient of 0.001 feet per foot with a flow direction to the northeast (Figure 3).

Figure 3 is a groundwater elevation contour map based upon the February 2005 measurements. The interpreted groundwater flow direction has remained the same since the Fourth Quarter 2004 sampling event. By contrast, the inferred flow direction during the Third Quarter 2004 was to the southwest. Flow directions have fluctuated in the past as indicated in previous quarterly monitoring events. These changes could be due to fluctuations in pumping well activity in the vicinity of the Site and/or seasonal recharge.

A comparison of water levels in adjacent shallow deep well pair GW-14A and GW-14B in February 2005 shows a 0.25 foot difference in water levels, which equals a 0.013 feet per foot upward gradient calculated by vertical distances between the centers of the screened

intervals. Previously measured water level elevations have shown both upward and downward gradients between these two wells. This variation in water levels could be due to seasonal recharge and production well activities in the vicinity of the Site.

3.2.1 Groundwater Level Transducers

As discussed in the Fourth Quarter 2004 Groundwater Monitoring Report, Honeywell installed water level transducers in each of the 13 onsite wells during First Quarter 2005. The transducers will record water levels (initial on an hourly bases) to evaluate water level trends. These data will be used for interpretation of the effects of nearby pumping wells on groundwater gradient.

This initial data set is being calibrated with survey data for the wells and validated by manual groundwater level measurements to ensure accuracy of the transducers. The results of water level recordings will be presented and discussed in the Second Quarter 2005 Monitoring Report to be submitted by July 15, 2005.

3.3 GROUNDWATER WELL PURGING AND SAMPLING

Purging and sampling activities were conducted from February 22 through 25, 2005. All 13 onsite wells were purged and sampled according to the field sampling protocols outlined in Appendix A. The data presented in tables of this report reflect a low flow purge approach, targeted at the upper portion of the saturated portion of each well screen (where the highest concentrations of constituents of concern would be expected). This purging approach has been utilized since the Third Quarter 2004. Other well purging approaches have been utilized during prior events. Appendix D presents the Groundwater Sampling Logs for First Quarter 2005. Following purging activities, groundwater samples were collected and analyzed in accordance with Table 3. In all, 13 groundwater samples, two duplicate groundwater samples, three trip blanks, and three equipment rinsate blanks were collected and analyzed during the First Quarter 2005 sampling event. Samples were submitted daily to Del Mar Analytical in Irvine, California, a State-certified environmental laboratory.

Due to the logistics of the two wells located in the Home Depot and the large volume of generated waste water as a result of purging activities, optimization of the well purging and sampling approach was evaluated during Fourth Quarter 2004. Based on the results, the methodology that was employed during Fourth Quarter 2004 as the standard method (Protocol B, see below, a low flow purge from a depth of 3 to 5 feet below the water table) was considered the most appropriate approach for future sampling. The only exception noted was at well GW-14A, where Protocols A and D resulted in notable higher concentrations (one order of magnitude) for chromium (VOCs showed no difference). Protocols A and D both employed the use of a bailer to collect water from the very top of the water column; however, Protocol A was to sample without any purging and Protocol D was to sample after three casing volumes. The observed higher concentrations may have represented the actual water table concentrations. Note that well GW-14A is the closest well to the source area, so higher water table concentrations likely occur in the area of GW-14A.

Based on the differences in chromium concentrations in GW-14A, further evaluation at GW-14A and GW-14B was conducted during First Quarter 2005. The purging and sampling protocols evaluated for wells GW-14A and -14B during this sampling event include:

- Protocol A No purge sample using a bailer from the top of the water column.
- Protocol B Purge 3 to 5 feet below top of water and sample through tube after stable parameters using modified low flow. (This is the standard protocol currently employed at the Site and used since Third Quarter 2004 sampling.)
- (Standard)
- Protocol C Purge 5 feet above bottom of casing and sample through tube after stable parameters using modified low flow.
- Protocol D Purge starting in the middle of screen, move pump up every so often until 3 to 5 feet below top of water. Sample after parameters and three casing volumes using modified low flow. Sample using a disposal bailer.

Tabulated data for each of the protocols above and analytical laboratory reports for alternate Protocols A, C, and D are included in Appendix E.

This quarters evaluation on GW-14A protocols resulted in similar concentrations for chromium for all protocols used. The elevated chromium concentrations from Fourth Quarter 2004 were likely a result of not purging the zone where the disposable bailer was submerged for sample collection using Protocols A and D. The final analysis of these protocols is that low flow purging from a depth of 3 to 5 feet below the water table is considered the most appropriate approach for future sampling.

3.4 ANALYTICAL RESULTS

The following section describes the results of laboratory analysis for RWQCB-specified analytes for the First Quarter 2005. Laboratory analytical reports are presented in Appendix F. Tables 4 through 7 summarize the analytical results and field parameters for groundwater samples collected during the First Quarter 2005 monitoring event. Tables C-2 through C-4 in Appendix C present historical analytical data summaries. Data validation is discussed in Section 3.4.6 below.

3.4.1 Field Parameters

Groundwater samples from all wells were measured in the field for pH, oxidation-reduction potential (ORP), electrical conductivity (EC), temperature, dissolved oxygen (DO), and turbidity using field instruments. Table 4 presents the results of the field parameters and are summarized below:

- pH ranged from 7.25 to 7.52.
- ORP ranged from 109.1 to 138 millivolts.
- EC ranged from 1,666,000 to 2,029,000 microseimens per centimeter.

- Temperature ranged from 19.27 to 23.66 degrees Centigrade.
- DO ranged from 1.49 to 11.20 milligrams per liter.
- Turbidity ranged from 0 to 27 nephelometric turbidity units.

The field parameters indicate that groundwater quality across the Site is consistent between Site wells.

3.4.2 Total and Hexavalent Chromium

Total chromium was detected in six of the 13 monitoring wells (Table 5). Detected concentrations of total chromium ranged from 0.05 (GW-14B) to 7.0 milligrams per liter (mg/L) (GW-15). Hexavalent chromium was detected in 8 of the 13 monitoring wells at concentrations ranging from 0.002 (GW-1) to 6.4 mg/L (GW-15). Total and hexavalent chromium concentrations decreased or remained about the same in all wells as compared to Fourth Quarter 2004 (see Tables C-2 and C-3 in Appendix C).

The distribution of chromium in groundwater is shown on Figure 4. Chromium concentrations in upgradient wells GW-2, GW-5, GW-6, GW-8, and GW-9 remain at or below laboratory method detection levels. Concentrations in wells GW-3, -7, -10, -14A, and -15 continue to exhibit the highest concentrations of chromium. These wells are all located in the south-central portion of the Site, downgradient of the Plant 1 source area (Figure 4). Chromium concentrations in wells GW-3, -7, -10, -14A, and -15 have fluctuated with time since quarterly monitoring began. Concentration changes in these wells may be linked to variations in the well purging approach used prior to sampling, as well as the groundwater level and gradient at the Site and pumping in nearby extraction well fields. During Third Quarter 2004 it was noted that over the previous seven quarters (nearly 2 full hydrologic cycles) of monitoring and sampling (March 2003 through September 2004), there was an apparent trend in chromium concentrations related to groundwater level fluctuations in certain wells. Concentration versus time and groundwater elevation graphs were prepared for wells with the highest hexavalent chromium concentrations (GW-3, GW-7, and GW-10) (Appendix B). Based on these graphs there was a general trend for decreases in hexavalent chromium concentration when the water level rises, and increases in concentration when the water level is lower. These trends were most apparent in the 2003 and 2004 data for wells GW-7 and GW-10. Other wells do not exhibit any notable trend. However, during Fourth Quarter 2004, this trend was not apparent, as groundwater levels declined slightly and chromium concentrations also declined in all site wells. Trends in concentration will continue to be evaluated for future groundwater sampling event results.

Total and hexavalent chromium concentrations were detected in well GW-14B at concentrations of 0.05 and 0.045 mg/L, respectively. Trends in water levels and concentrations will continue to be evaluated for future groundwater sampling events.

3.4.3 Title 22 Metals

Table 5 also presents the Fourth Quarter 2004 analytical results for the other Title 22 metals. Concentrations of antimony, beryllium, cadmium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc were non-detect in samples collected during the Fourth Quarter 2004 monitoring event. Arsenic was detected in five wells at concentrations ranging from 0.0066 to 0.0082 mg/L, below the MCL of 0.05 mg/L. Barium was detected in all samples at concentrations ranging from 0.26 mg/L to 0.51 mg/L; however, barium concentrations were below the corresponding maximum contaminant level (MCL) of 1,000 µg/L. Zinc was detected in 12 of 13 samples at concentrations of 0.023 mg/L (estimated) in GW-7 to 0.170 mg/L in GW-5.

3.4.4 Volatile Organic Compounds

VOCs were sampled, in accordance with the September 21, 2004 request from the RWQCB (RWQCB 2004). Table 6 presents the First Quarter 2005 analytical results for volatile organic compounds. Ten constituents were detected in groundwater samples collected during First Quarter 2005 and are summarized below:

- 1,1,1-Trichloroethane was detected in well GW-15 at a concentration of 4 µg/L, below the MCL of 200 µg/L.
- 1,1-Dichloroethane (1,1-DCA) was detected in all wells at concentrations ranging from 1.8 to 8 µg/L. Samples from wells GW-5, GW-7, and GW-15 exceeded the MCL of 5 µg/L.
- 1,1-dichloroethene (1,1-DCE) was detected in groundwater samples from GW-7 and -15 at concentrations of 2 and 8 µg/L, respectively. The MCL for 1,1-dichloroethene is 6 µg/L.
- 1,2-DCA was detected in all but one sample collected. Concentrations ranged from 0.64 to 1.9 µg/L, above the MCL of 0.5 µg/L.
- Carbon tetrachloride was detected in well GW-15 at a concentration of 1 µg/L, above the MCL of 0.5 µg/L.
- Chloroform was detected in GW-15 and the duplicate sample for GW-7 at a concentration of 2 and 1 µg/L, respectively.
- cis-1,2-Dichloroethene (cis-1,2-DCE) was detected in all groundwater samples at concentrations ranging from 14 to 37 µg/L, all above the MCL of 6 µg/L.
- Dichlorodifluoromethane was detected in all samples at concentrations ranging from 4.6 to 18 µg/L. All sample results were below the secondary MCL of 1,000 µg/L.

- Tetrachloroethene (PCE) was detected in all samples at concentrations ranging from 8.7 to 18 µg/L, all above the MCL of 5 µg/L.
- Trichloroethene (TCE) was detected in all wells at concentrations ranging from 8.6 to 160 µg/L. All sample results were above the MCL of 5 µg/L.

Figure 5 illustrates the concentrations of TCE and PCE in groundwater.

3.4.5 Emerging Chemicals

Six wells (GW-2, -3, -6, -7, -10, and -15) were analyzed for 1,4-dioxane and perchlorate with the consent of the RWQCB (Parsons 2004b). Except for GW-10, all wells analyzed contained detectable, low-level concentrations of 1,4-dioxane ranging from 4.1 µg/L (GW-2) to 16 µg/L (GW-15) (Table 7). Perchlorate was detected in one well, GW-15, at a concentration of 9 µg/L. Figure 6 illustrates the concentrations of emerging chemicals in groundwater.

3.4.6 Data Validation Summary

Results were reviewed in accordance with the appropriate methods listed above. In addition, the U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines for Organic (USEPA 1999) and Inorganic (USEPA 2002) Data Review were used to provide overall guidance for the validation process. The data review included an evaluation of the following quality control parameters based on standard performance criteria presented in these documents.

- Analytical Holding Times/Sample Preservation
- Method Blanks and Field Blanks
- Surrogate Percent Recovery
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Performance
- Field Duplicate Comparison
- Detection Limits

All data submitted for this project are of known and acceptable quality as qualified, based on laboratory-established control limits and the data quality objectives. These data are considered acceptable for their intended purposes. The Data Validation Report is included in Appendix G.

SECTION 4.0

CONCLUSIONS

Conclusions that can be made based on the results of the Fourth Quarter 2004 monitoring event are summarized below:

- Groundwater elevations in the unconfined aquifer on February 22, 2005 ranged from 467.07 to 468.72 ft msl. These elevations represent an approximate 5.7 feet increase in the water table when compared to Fourth Quarter 2004 (refer to Tables 2 and Table C-1 in Appendix C for details).
- Groundwater flow direction has not changed since the Third Quarter 2004. The First Quarter data indicates an average horizontal gradient of approximately 0.001 feet/foot and flow to the northeast. By contrast, the inferred flow direction during the Third Quarter 2004 was to the southwest. Flow directions have fluctuated in the past as indicated in previous quarterly monitoring events. A comparison of water levels in adjacent shallow/deep well pair GW-14A and GW-14B show a 0.013 feet per foot upward gradient.
- Detectable total chromium was present in six of the 13 wells at concentrations ranging from 0.05 mg/L (GW-14B) to 7 mg/L (GW-15).
- Hexavalent chromium was detected in 8 of the 13 wells at concentrations ranging from 0.002 mg/L (well GW-1) to 6.4 mg/L (GW-15).
- In general, total and hexavalent chromium concentrations decreased or remained about the same in all wells.
- Concentrations in wells GW-3 -7, -10, -14A, and -15 continue to exhibit the highest concentrations of chromium in all wells that are part of the sampling program, but remain within historical concentration ranges.
- VOCs were sampled for per RWQCB request. Ten VOCs were detected during the First Quarter 2005 sampling event. Of the ten, seven (1,1-DCA, 1,1-DCE, 1,2-DCA, carbon tetrachloride, cis-1,2-DCE, PCE, and TCE) were detected above MCLs.
- 1,4-Dioxane was detected in five of the six wells analyzed, at concentrations ranging from 4.1 µg/L (GW-2) to 16 µg/L (GW-15). In general, the levels of this emerging chemical are within the historical range at the Site.
- Perchlorate was detected only in well GW-15, at a concentration of 9 µg/L.

Honeywell has installed water level transducers in the 13 on-site wells during First Quarter 2005. Data recorded by the transducers will be discussed beginning in Second Quarter 2005. The next groundwater monitoring event is scheduled for the Second Quarter 2005 and a report documenting the results of that work will be submitted to the RWQCB by July 15, 2005.

SECTION 5.0

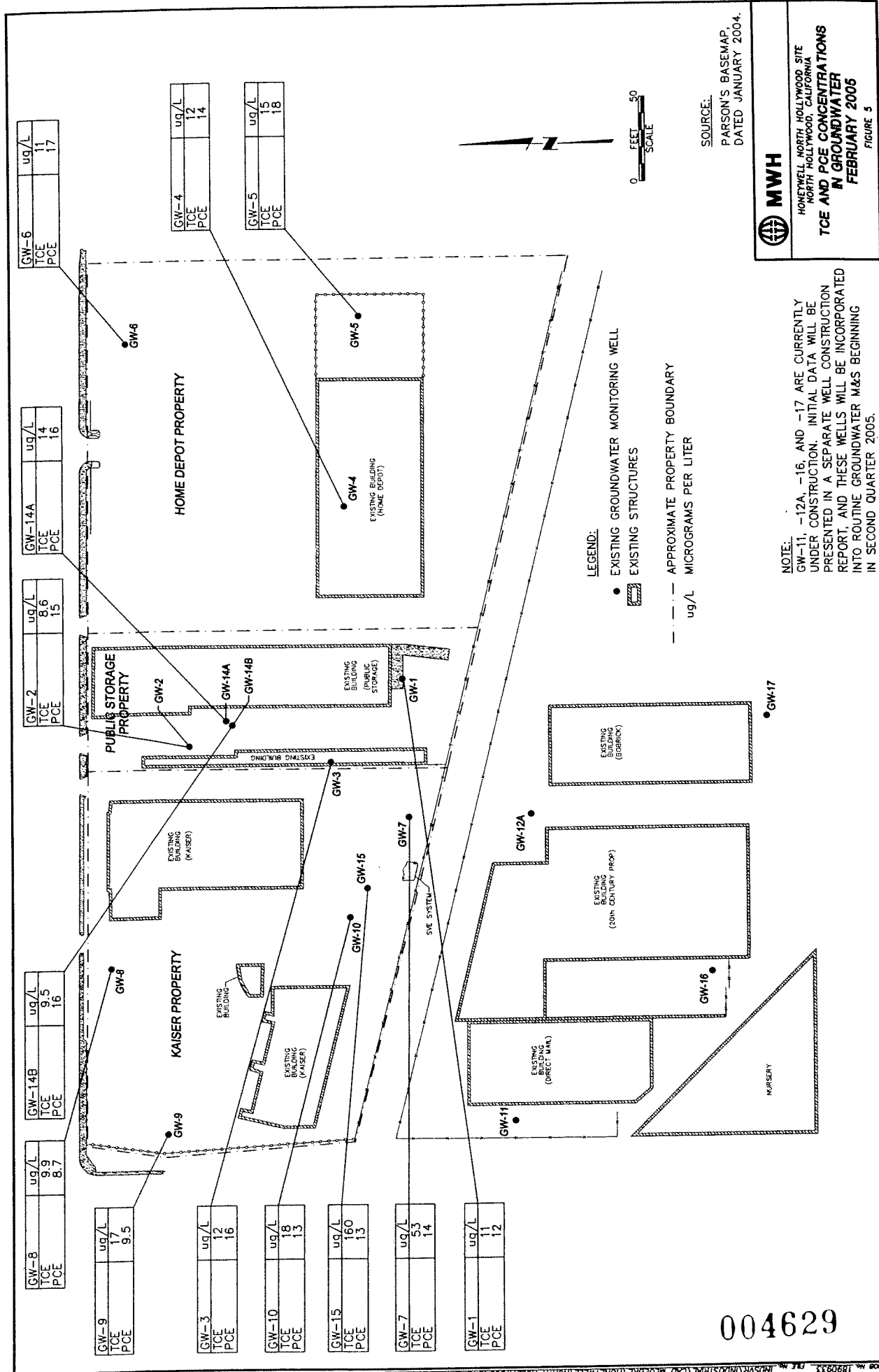
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FIGURES

004628



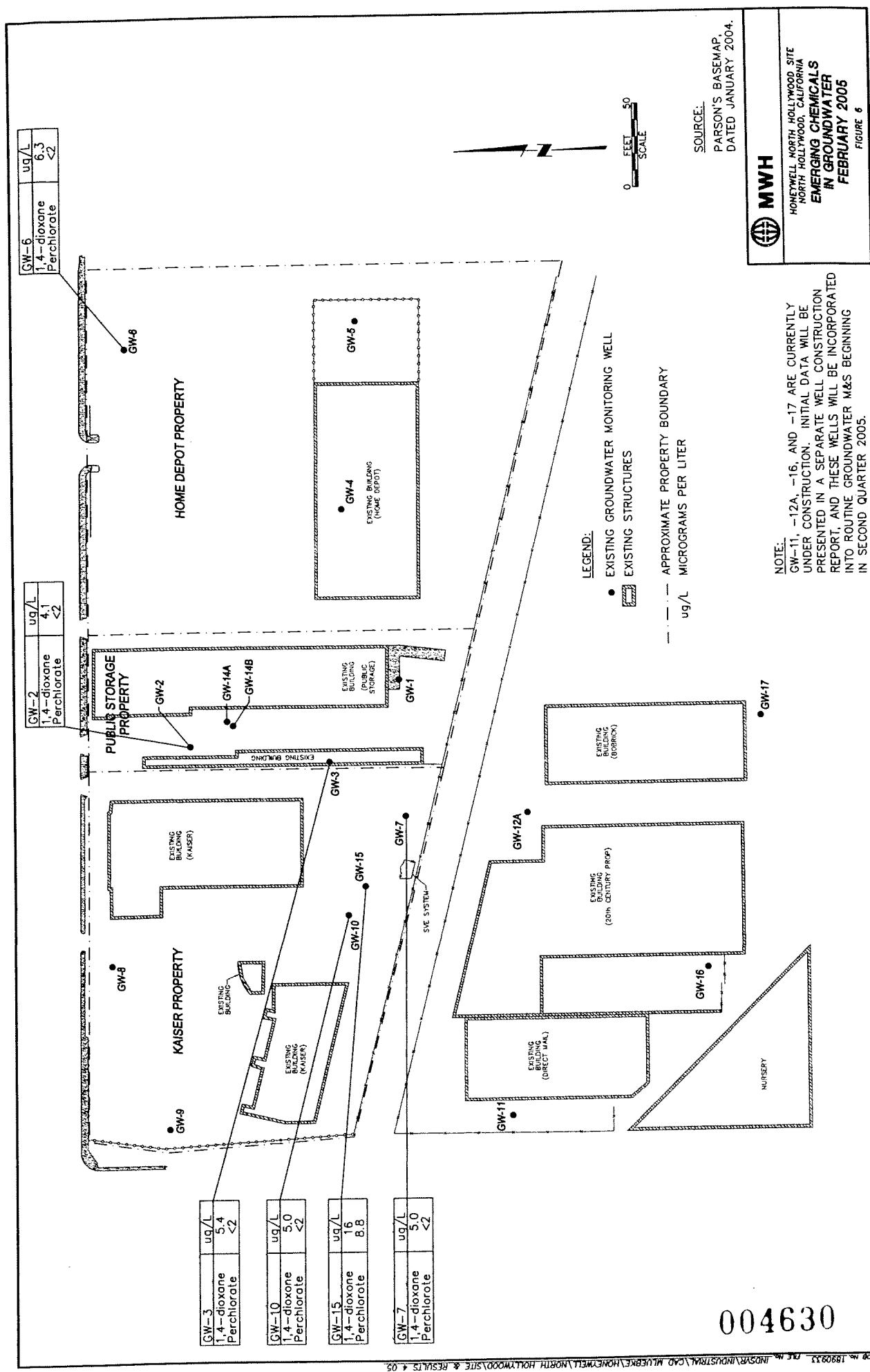
004629



**HONEYWELL NORTH HOLLYWOOD SITE
NORTH HOLLYWOOD, CALIFORNIA
TCE AND PCE CONCENTRATIONS
IN GROUNDWATER
FEBRUARY 2005**

FIGURE 5

NOTE: GW-11, -12A, -16, AND -17 ARE CURRENTLY UNDER CONSTRUCTION. INITIAL DATA WILL BE PRESENTED IN A SEPARATE WELL CONSTRUCTION REPORT, AND THESE WELLS WILL BE INCORPORATED INTO ROUTINE GROUNDWATER M&S BEGINNING IN SECOND QUARTER 2005.

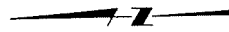


NOTE:
 GW-11, -12A, -16, AND -17 ARE CURRENTLY UNDER CONSTRUCTION. INITIAL DATA WILL BE PRESENTED IN A SEPARATE WELL CONSTRUCTION REPORT, AND THESE WELLS WILL BE INCORPORATED INTO ROUTINE GROUNDWATER M&S BEGINNING IN SECOND QUARTER 2005.



HONEYWELL NORTH HOLLYWOOD SITE
 NORTH HOLLYWOOD, CALIFORNIA
**EMERGING CHEMICALS
 IN GROUNDWATER**
FEBRUARY 2005
 FIGURE 6

SOURCE:
 PARSON'S BASEMAP,
 DATED JANUARY 2004.



004630

TABLES

TABLE 1
WELL CONSTRUCTION DETAILS
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Well Installation Date	Screen Length (feet)	Screen Interval (ft bgs)	Total Depth (ft bgs)	Well Diameter (inches)	Screen Slot Size (inches)	Screen Type
GW-1	07/12/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-2	07/01/91	60	241-301	301	4	0.030	Sch 80 PVC
GW-3	07/09/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-4	07/03/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-5	06/27/91	60	248-308	308	4	0.030	Sch 80 PVC
GW-6	07/16/91	60	245-305	305	4	0.030	Sch 80 PVC
GW-7	07/01/93	80	230-310	310	4	0.030	Stainless Steel
GW-8	07/19/93	80	225-305	305	4	0.030	Stainless Steel
GW-9	07/23/93	80	223-303	303	4	0.030	Stainless Steel
GW-10	07/12/93	80	230-310	310	4	0.030	Stainless Steel
GW-14A	12/04/03	30	255-285	285	4	0.020	Sch 80 PVC
GW-14B	12/12/03	27	285-312	312	6	0.020	Sch 80 PVC
GW-15	04/15/04	85	245-330	335	6	0.020	Stainless Steel

Notes:

ft bgs - Feet below ground surface

NA - Not available

PVC - Polyvinylchloride

Sch - Schedule

TABLE 2
GROUNDWATER ELEVATIONS - FIRST QUARTER 2005
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Date Measured	Top of Casing Elevation (ft msl) ¹	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
GW-1	02/22/05	741.90	273.98	467.92
GW-2	02/22/05	741.11	272.99	468.12
GW-3	02/22/05	738.99	270.76	468.23
GW-4	02/22/05	742.83 ²	274.91	467.92
GW-5	02/22/05	742.17 ²	274.34	467.83
GW-6	02/22/05	744.98 ²	277.91	467.07
GW-7	02/22/05	736.95	268.54	468.41
GW-8	02/22/05	744.28	275.69	468.59
GW-9	02/22/05	743.05	274.33	468.72
GW-10	02/22/05	739.91	271.31	468.60
GW-14A	02/22/05	741.59	273.41	468.18
GW-14B	02/22/05	741.13	272.70	468.43
GW-15	02/22/05	738.87 ²	270.33	468.54

Notes:

¹ Based on June 2003 survey, Calvada Surveying

² Based on December 2004 survey, Calvada Surveying

ft msl - Feet above mean sea level

ft btoc - Feet below top of casing

NA - Not available

NS - Not surveyed

-- - No information

TABLE 3
ANALYTICAL PROGRAM SUMMARY
FIRST QUARTER 2005
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Volatile Organic Compounds (EPA 8260B)	Title 22 Metals ^{1,2} (EPA 6010B)	Mercury ¹ (EPA 7470A)	Chromium ^{VI} (EPA 7199)	1,4-Dioxane (EPA 8270SIM)	Perchlorate (EPA 314)
GW-1	X	X	X	X		
GW-2	X	X	X	X	X	X
GW-3	X	X	X	X	X	X
GW-4	X	X	X	X		
GW-5	X	X	X	X		
GW-6	X	X	X	X	X	X
GW-7	X	X	X	X	X	X
GW-8	X	X	X	X		
GW-9	X	X	X	X		
GW-10	X	X	X	X	X	X
GW-14A	X	X	X	X		
GW-14B	X	X	X	X		
GW-15	X	X	X	X	X	X

Notes:

¹Filter samples in the field

²Samples were also analyzed using EPA Method 6020 for thallium

Collect groundwater duplicates (10% of total) and equipment blanks (1/day)

EPA - U.S. Environmental Protection Agency

TABLE 4
FIELD PARAMETERS - FIRST QUARTER 2005
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Date Measured	pH	ORP (mV)	Electrical Conductivity (μ S/cm)	Temperature (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
GW-1	02/23/05	7.39	131.1	1,802,000	20.02	5.47	1
GW-2	02/22/05	7.28	125.3	1,907,000	20.32	1.52	2
GW-3	02/23/05	7.33	130.9	1,789,000	19.27	3.43	1
GW-4	02/25/05	7.50	109.1	1,666,000	21.13	4.89	27
GW-5	02/25/05	7.38	119.5	1,965,000	19.73	3.38	2
GW-6	02/22/05	7.25	134.0	2,029,000	20.01	2.44	4
GW-7	02/24/05	7.40	124.6	1,716,000	20.59	4.82	2
GW-8	02/22/05	7.29	114.6	1,743,000	19.78	5.01	1
GW-9	02/22/05	7.27	124.0	1,776,000	19.80	5.57	2
GW-10	02/24/05	7.41	126.3	1,672,000	20.09	1.49	--
GW-14A	02/23/05	7.37	134.0	1,867,000	19.60	11.20	2
GW-14B	02/24/05	7.31	120.8	1,885,000	20.34	7.06	0
GW-15	02/25/05	7.52	138.0	1,810,000	23.66	8.80	4

Notes:

°C - Degrees Centigrade

μ S/cm - Microseimens per centimeter

mg/L - Milligrams per liter

mV - Millivolts

NTU - Nephelometric Turbidity Units

TABLE 5
GROUNDWATER ANALYTICAL DATA - INORGANICS
FIRST QUARTER 2005
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Total Chromium	Chromium ^{VI}	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
GW-1	02/23/05	<0.01	<0.012 UJ	0.37	<0.004	<0.005	<0.005	0.0018	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.055
GW-2	02/22/05	<0.01	<0.005	0.41	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.068
GW-3	02/23/05	<0.01	<0.0082 UJ	0.36	<0.004	<0.005	0.18	0.17	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.072
GW-4	02/25/05	<0.01	<0.005	0.51	<0.004	<0.005	<0.005	0.0012	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.10
GW-5	02/25/05	<0.01	0.0069	0.35	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.17
GW-6	02/22/05	<0.01	<0.005	0.32	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.032
GW-7	02/24/05	<0.01	0.0082	0.26 J	<0.004	<0.005	0.14	0.091 J	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.023 J
GW-7 (duplicate)	02/24/05	<0.01	<0.005	0.39	<0.004	<0.005	0.14	0.13	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.14
GW-8	02/22/05	<0.01	0.0066	0.45	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.11
GW-9	02/22/05	<0.01	0.0071	0.23	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
GW-10	02/25/05	<0.01	<0.005	0.26	<0.004	<0.005	0.20	0.17	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.024
GW-14A	02/23/05	<0.01	<0.005	0.36	<0.004	<0.005	0.82	0.72	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.058
GW-14B	02/24/05	<0.01	<0.005	0.48	<0.004	<0.005	0.05	0.045	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.12
GW-15	02/25/05	<0.01	0.0066	0.26 J	<0.004	<0.005	7.0	6.4	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.038
GW-15 (duplicate)	02/25/05	<0.01	<0.005	0.18	<0.004	<0.005	6.7	6.5	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02

Notes:

Samples were analyzed using EPA Method 6010B, except for chromium^{VI} (EPA Method 7199), mercury (EPA Method 7470A), and thallium (EPA Method 6020)

EPA - U.S. Environmental Protection Agency

J - Estimated

mg/L - Milligrams per liter

UJ - Result is non detected, however, the reporting limit is qualified as estimated

< - Less than listed reporting limit

TABLE 6
GROUNDWATER ANALYTICAL DATA - ORGANICS
FIRST QUARTER 2005
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	µg/L									
		1,1,1-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	Carbon Tetrachloride	Chloroform	cis-1,2-Dichloroethene	Dichlorodifluoromethane	Tetrachloroethene	Trichloroethene
GW-1	02/23/05	<1	3.1	<1	0.91	<0.5	<1	22	10	12	11
GW-2	02/22/05	<1	3.5	<1	1.9	<0.5	<1	29	15	15	8.6
GW-3	02/23/05	<1	3.8	<1	1.3	<0.5	<1	29	14	16	12
GW-4	02/25/05	<1	3.9	<1	1.0	<0.5	<1	27	14	14	12
GW-5	02/25/05	<1	5.6	<1	1.3	<0.5	<1	34	18	18	15
GW-6	02/22/05	<1	4.8	<1	1.3	<0.5	<1	28	14	17	11
GW-7	02/24/05	<1	5.2	1.5	1.0	<0.5	<1	27	11	14	53
GW-7 (duplicate)	02/24/05	<1	5.0	1.4	1.1	<0.5	1.0	25	11	13	51
GW-8	02/22/05	<1	1.8	<1	0.66	<0.5	<1	14	4.9	8.7	9.9
GW-9	02/22/05	<1	1.9	<1	0.64	<0.5	<1	14	4.6	9.5	17
GW-10	02/25/05	<1	2.6	<1	1.2	<0.5	<1	23	13	13	18
GW-14A	02/23/05	<1	3.9	<1	1.6	<0.5	<1	31	7.0	16	14
GW-14B	02/24/05	<1	4.3	<1	1.7	<0.5	<1	37	16	16	9.5
GW-15	02/25/05	4.0	8.0	7.6	1.2	0.51	2.2	26	8.2	13	160
GW-15 (duplicate)	02/25/05	3.9	7.8	7.4	1.2	<0.5	2.2	25	8.2	13	150
Trip Blank	02/22/05	<1	<1	<1	<0.5	<0.5	<1	<1	<2	<1	<1
	02/23/05	<1	<1	<1	<0.5	<0.5	<1	<1	<2	<1	<1
	02/24/05	<1	<1	<1	<0.5	<0.5	<1	<1	<2	<1	<1

Notes:

Samples were analyzed using EPA Method 8260

Only detected analytes are shown.

EPA - U.S. Environmental Protection Agency

µg/L - Micrograms per liter

< - Less than listed reporting limit

TABLE 7
GROUNDWATER ANALYTICAL DATA - EMERGING CHEMICALS
FIRST QUARTER 2005
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	µg/L			
		Perchlorate (EPA 314.0)	n-Nitrosodi- methylanine (EPA 1625)	1,4-Dioxane (EPA 8270SIM)	1,2,3-Trichloropropane (EPA 8260B)
GW-2	02/22/05	<2	NA	4.1	NA
GW-3	02/23/05	<2	NA	5.4	NA
GW-6	02/22/05	<2	NA	6.3	NA
GW-7	02/24/05	<2	NA	5.0	NA
GW-7 (duplicate)	02/24/05	<2	NA	5.1	NA
GW-10	02/25/05	<2	NA	<5	NA
GW-15	02/25/05	8.8	NA	16	NA
GW-15 (duplicate)	02/25/05	8.9	NA	14	NA

Notes:

EPA - U.S. Environmental Protection Agency

µg/L - Micrograms per liter

NA - Not Analyzed

< - Less than listed reporting limit

APPENDIX A
FIELD SAMPLING PROTOCOL

APPENDIX A

FIELD SAMPLING PROTOCOL

A.1 GROUNDWATER GAUGING

Prior to sampling, groundwater levels were measured with an electric water probe in all groundwater monitoring wells. Measurements were taken from a surveyed reference point marked on the top of the well casing. Water-level measurements were taken within 0.01 ft and recorded on field sampling sheets. The probe was decontaminated between groundwater monitoring wells.

A.2 GROUNDWATER PURGE AND SAMPLING PROCEDURES

Purging

Before sampling each groundwater monitoring well, an initial water level reading was recorded (see Appendix D of this report). A 2-inch diameter submersible Grundfos® Redi-Flo II® pump was used to purge groundwater from each well. The pump was equipped with a check valve to prevent backflow into the well. The pump was placed 3 feet below the top of the water column in all wells (except for one) to collect groundwater from the uppermost portion of the formation. The water table in all of these wells is located within the screened portion of the well casing. Prior evaluations of vertical dissolved chromium stratification in wells across the Site have indicated that the upper portion of the well screen contains the highest concentrations of inorganics. GW-14B is the only well with 10 feet of water above the screen; therefore the pump was placed at 3 feet below the top of screen to ensure purge water is from the formation. Well construction details are presented in Table 1 of this report.

During the purge cycle, groundwater quality parameters of pH, specific conductance (EC), temperature, dissolved oxygen, oxidation-reduction potential, turbidity, water levels, and visual observations were measured using a YSI 556 flow-through cell meter and recorded on MWH sampling data sheets to verify well stabilization (see Appendix D of this report). Instrument calibration was conducted at the beginning of each field day (and thereafter if suspect or erroneous readings were taken).

Wells were purged and sampled in order of lowest to highest hexavalent chromium concentration, to the extent as possible, with the exception of wells GW-4 and GW-5 located within the Home Depot building. Access for sampling these two wells was restricted during normal business hours. Wells were purged at a low flow rate (~1 gallon/minute) to not cause cavitation or significant drawdown (<0.5 feet), until three consecutive measurements (taken at least 5 minutes apart) of pH, temperature, and EC were stabilized to within $\pm 10\%$ of each other, and turbidity was as close to 5 nephelometric turbidity units as possible.

Sampling and Analysis

Once all of the parameters stabilized, indicating stable groundwater conditions, sampling activities commenced. Groundwater samples were collected into appropriate laboratory-provided sample containers via the purge water discharge tube. Samples for Title 22 analysis were filtered in the field. All samples were capped, labeled, sealed in plastic bags, placed in ice-chilled, insulated coolers to maintain a shipping temperature of 4 degrees Centigrade and transported under a chain-of-custody protocol to Del Mar Analytical, a California state-certified laboratory. Table 3 of this report presents the analytical program for First Quarter 2005.

A.3 DECONTAMINATION AND WASTE MANAGEMENT

All sampling equipment (submersible pump and discharge tubing) was cleaned through the tubing using a nonphosphate detergent, rinsed with tap water, and final-rinsed with deionized water before entering each well. Each of the steps in the three-step decontamination procedure was allowed to flow through the tubing for a minimum of 5 minutes each. The outside of the pump and tubing was cleaned using a nonphosphate detergent and rinsed using a steam-cleaner. All equipment was handled in a manner intended to prevent cross-contamination.

Purge water was temporarily contained in the subcontractors truck-mounted holding tank and later transferred to an on-site storage tank pending receipt of analytical certifications. The contents of the tank were profiled and transported by Onyx Environmental to an off-site, permitted disposal facility.

A.4 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

The overall QA/QC objective for field activities and laboratory analyses was to produce data of sufficient quality to support an evaluation of the environmental conditions. Standard operating procedures were conducted so that known and sufficient acceptable levels of accuracy, precision, completeness, representativeness, and comparability were achieved for the data. The QA/QC procedures are summarized in the following subsections.

A.3.1 Documentation

As a minimum, the following pertinent field information was recorded in ink onto field log forms:

- (1) Date and time of entries
- (2) Personnel on site (including subcontractors)
- (3) Activity and location
- (4) Field observation (i.e., soil descriptions, direct instrument readings, weather, unusual occurrences, water levels, volume, and types of materials used)

- (5) Sample information (time, depth, location, type of sample, container preservation, and analyses)
- (6) Equipment calibration records
- (7) Observations useful in reconstructing activities
- (8) Documentation of tailgate safety meetings

A.3.2 Field QA/QC Samples

To verify laboratory results, two duplicate samples were collected. One equipment rinsate sample was collected after each day in the field to verify decontamination procedures by pouring laboratory-grade, organic-free water on a decontaminated pump and into sample containers. One trip blank sample was sent to the lab for analysis in every cooler that contained samples for VOC analysis.

Quality control samples were documented and handled according to similar procedures noted in Section A.2. Equipment rinsate blanks were analyzed for the same analyses as groundwater samples.

A.3.3 Laboratory QA/QC

As a minimum, the U.S. Environmental Protection Agency sample holding times and preservation were observed. Specific requirements were followed, including field and reagent blanks, calibration check standards, matrix-spiked duplicates, total recoveries, and laboratory QC samples. The laboratory's QA/QC documentation was reported, and the analytical results indicated the concentrations of analytes detected along with the detection limits.

APPENDIX B
HYDROGRAPHS

004643

APPENDIX C
HISTORICAL DATA SUMMARIES

TABLE C-1

**HISTORICAL GROUNDWATER ELEVATIONS
FIRST QUARTER 2003 - FIRST QUARTER 2005**

**Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California**

Well ID	Date Measured	Top of Casing Elevation (ft msl) ¹	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
GW-1	03/24/03	741.90	272.73	469.17
	06/10/03	741.90	270.11	471.79
	08/01/03	741.90	274.09	467.81
	08/19/03	741.90	275.15	466.75
	09/16/03	741.90	276.70	465.20
	11/17/03	741.90	279.60	462.30
	12/08/03	741.90	280.02	461.88
	01/14/04	741.90	280.55	461.35
	03/15/04	741.90	279.93	461.97
	06/14/04	741.90	274.45	467.45
	09/08/04	741.90	278.38	463.52
	11/08/04	741.90	279.43	462.47
	02/22/05	741.90	273.98	467.92
	03/24/03	741.11	271.84	469.27
GW-2	06/10/03	741.11	268.86	472.25
	08/01/03	741.11	271.34	469.77
	08/19/03	741.11	273.90	467.21
	09/16/03	741.11	275.46	465.65
	11/17/03	741.11	278.31	462.80
	12/08/03	741.11	278.74	462.37
	01/14/04	741.11	279.23	461.88
	03/15/04	741.11	279.30	461.81
	06/14/04	741.11	273.42	467.69
	09/08/04	741.11	276.94	464.17
	11/08/04	741.11	278.63	462.48
	02/22/05	741.11	272.99	468.12
	03/24/03	738.99	269.33	469.66
	06/10/03	738.99	266.78	472.21
GW-3	08/01/03	738.99	270.10	468.89
	08/19/03	738.99	271.96	467.03
	09/16/03	738.99	273.57	465.42
	11/17/03	738.99	NA	NA
	12/08/03	738.99	276.56	462.43
	01/14/04	738.99	277.25	461.74
	03/15/04	738.99	276.87	462.12
	06/14/04	738.99	271.24	467.75
	09/08/04	738.99	275.13	463.86
	11/08/04	738.99	276.39	462.60
	02/22/05	738.99	270.76	468.23

TABLE C-1
HISTORICAL GROUNDWATER ELEVATIONS
FIRST QUARTER 2003 - FIRST QUARTER 2005
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Date Measured	Top of Casing Elevation (ft msl) ¹	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
GW-4	03/24/03	742.90	274.36	468.54
	06/10/03	742.90	271.86	471.04
	08/01/03	742.90	275.72	467.18
	08/19/03	742.90	276.89	466.01
	09/16/03	742.90	278.26	464.64
	11/17/03	742.90	281.08	461.82
	12/08/03	742.90	281.47	461.43
	01/14/04	742.90	281.83	461.07
	03/15/04	742.90	281.74	461.16
	06/14/04	742.90	276.41	466.49
	09/08/04	742.90	279.94	462.96
	11/08/04	742.83 ²	281.20	461.63
	02/22/05	742.83 ²	274.91	467.92
	03/24/03	742.23	273.54	468.69
GW-5	06/10/03	742.23	270.22	472.01
	08/01/03	742.23	273.90	468.33
	08/19/03	742.23	275.25	466.98
	09/16/03	742.23	276.23	466.00
	11/17/03	742.23	279.04	463.19
	12/08/03	742.23	279.40	462.83
	01/14/04	742.23	279.87	462.36
	03/15/04	742.23	279.65	462.58
	06/14/04	742.23	274.69	467.54
	09/08/04	742.23	278.07	464.16
	11/08/04	742.17 ²	279.24	462.93
	02/22/05	742.17 ²	274.34	467.83
	03/24/03	745.06	276.21	468.85
	06/10/03	745.06	273.71	471.35
GW-6	08/01/03	745.06	276.38	468.68
	08/19/03	745.06	277.68	467.38
	09/16/03	745.06	278.95	466.11
	11/17/03	745.06	281.60	463.46
	12/08/03	745.06	282.02	463.04
	01/14/04	745.06	282.80	462.26
	03/15/04	745.06	283.25	461.81
	06/14/04	745.06	278.42	466.64
	09/08/04	745.06	281.00	464.06
	11/08/04	744.98 ²	282.65	462.33
	02/22/05	744.98 ²	277.91	467.07

TABLE C-1

**HISTORICAL GROUNDWATER ELEVATIONS
FIRST QUARTER 2003 - FIRST QUARTER 2005
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California**

Well ID	Date Measured	Top of Casing Elevation (ft msl) ¹	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
GW-7	03/24/03	736.95	267.41	469.54
	06/10/03	736.95	264.72	472.23
	08/01/03	736.95	268.99	467.96
	08/19/03	736.95	270.25	466.70
	09/16/03	736.95	271.76	465.19
	11/17/03	736.95	274.61	462.34
	12/08/03	736.95	274.92	462.03
	01/14/04	736.95	274.41	462.54
	03/15/04	736.95	274.71	462.24
	06/14/04	736.95	269.09	467.86
	09/08/04	736.95	273.30	463.65
	11/08/04	736.95	274.25	462.70
	02/22/05	736.95	268.54	468.41
	03/24/03	744.28	275.00	469.28
GW-8	06/10/03	744.28	271.98	472.30
	08/01/03	744.28	276.36	467.92
	08/19/03	744.28	277.66	466.62
	09/16/03	744.28	279.22	465.06
	11/17/03	744.28	282.03	462.25
	12/08/03	744.28	282.35	461.93
	01/14/04	744.28	282.73	461.55
	03/15/04	744.28	282.58	461.70
	06/14/04	744.28	276.29	467.99
	09/08/04	744.28	280.38	463.90
	11/08/04	744.28	281.89	462.39
	02/22/05	744.28	275.69	468.59
	03/24/03	743.05	273.78	469.27
	06/10/03	743.05	270.77	472.28
GW-9	08/01/03	743.05	275.39	467.66
	08/19/03	743.05	276.80	466.25
	09/16/03	743.05	278.41	464.64
	11/17/03	743.05	281.28	461.77
	12/08/03	743.05	281.48	461.57
	01/14/04	743.05	281.96	461.09
	03/16/04	743.05	281.14	461.91
	06/14/04	743.05	274.96	468.09
	09/08/04	743.05	279.98	463.07
	11/08/04	743.05	280.90	462.15
	02/22/05	743.05	274.33	468.72

TABLE C-1

**HISTORICAL GROUNDWATER ELEVATIONS
FIRST QUARTER 2003 - FIRST QUARTER 2005**

**Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California**

Well ID	Date Measured	Top of Casing Elevation (ft msl) ¹	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
GW-10	03/24/03	739.91	270.39	469.52
	06/10/03	739.91	267.78	472.13
	08/01/03	739.91	272.18	467.73
	08/19/03	739.91	273.43	466.48
	09/16/03	739.91	274.97	464.94
	11/17/03	739.91	277.80	462.11
	12/08/03	739.91	278.10	461.81
	01/14/04	739.91	278.54	461.37
	03/15/04	739.91	277.83	462.08
	06/14/04	739.91	271.95	467.96
	09/08/04	739.91	276.40	463.51
	11/08/04	739.91	277.31	462.60
	02/22/05	739.91	271.31	468.60
GW-14A	01/14/04	741.59	279.71	461.88
	03/15/04	741.59	279.58	462.01
	06/14/04	741.59	273.86	467.73
	09/08/04	741.59	277.32	464.27
	11/08/04	741.59	279.04	462.55
	02/22/05	741.59	273.41	468.18
GW-14B	01/14/04	741.13	279.69	461.44
	03/15/04	741.13	278.83	462.30
	06/14/04	741.13	273.24	467.89
	09/08/04	741.13	277.27	463.86
	11/08/04	741.13	278.38	462.75
	02/22/05	741.13	272.70	468.43
GW-15	06/16/04	NS	270.96	--
	09/08/04	NS	275.37	--
	11/08/04	738.87 ²	276.35	462.52
	02/22/05	738.87 ²	270.33	468.54

Notes:

¹ Based on June 2003 survey, Calvada Surveying² Based on December 2004 survey, Calvada Surveying

ft msl - Feet above mean sea level

ft btoc - Feet below top of casing

NA - Not available

NS - Not surveyed

-- - No information

TABLE C-2

HISTORICAL GROUNDWATER ANALYTICAL DATA - CHROMIUM

Honeywell North Hollywood Site

11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	Sample type		mg/L	
				Total Chromium	Chromium VI
		Filtration	Collection		
GW-1	02/08/01	NF	Pump	0.174	0.151
	03/25/03	NF	Bailer	0.085	0.081
	03/25/03	NF	Bailer (Dup)	0.081	0.079
	06/16/03	NF	Bailer	0.26	0.22
	06/16/03	NF	Bailer (Dup)	0.23	0.23
	09/17/03	NF	Bailer	0.25	0.22
	12/09/03	NF	Bailer	0.021	0.019
	03/17/04	FFVI	Bailer	0.013	<0.001
	06/15/04	FFVI	Bailer	0.013	0.0035
	09/14/04	FF	Pump	0.26	0.23
	11/09/04	FF	Pump	<0.005	0.0035
	02/23/05	FFTC	Pump	<0.005	0.0018
GW-1-S*	12/09/03	NF	Pump	0.0054	0.0037
GW-1-M*	12/09/03	NF	Pump	<0.005	0.0023
GW-1-D*	12/09/03	NF	Pump	0.005	0.0032
GW-2	08/01/93	NF	NS	<0.010	NA
	02/08/01	NF	Pump	0.0129	<0.001
	03/25/03	NF	Bailer	0.0063	<0.001
	06/10/03	NF	Bailer	0.029	0.026
	09/16/03	NF	Bailer	<0.005	<0.001
	12/08/03	NF	Bailer	0.0063	<0.001
	03/16/04	FFVI	Bailer	0.018	<0.001
	06/14/04	FFVI	Bailer	<0.005	<0.001
	09/16/04	FF	Pump	<0.005	<0.001
	11/08/04	FF	Pump	<0.005	0.0011
	02/22/05	FFTC	Pump	<0.005	<0.001

TABLE C-2

HISTORICAL GROUNDWATER ANALYTICAL DATA - CHROMIUM

Honeywell North Hollywood Site

11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	Sample type		mg/L	
				Total Chromium	Chromium VI
		Filtration	Collection		
GW-3	08/01/93	NF	NS	0.012	NA
	07/30/97	NF	Bailer	1.4	<2.0
	07/30/97	NF	Bailer (Dup)	0.93	1.4
	07/28/98	FF	Bailer	1.1	1.4
	07/28/98	FF	Bailer (Dup)	1.7	1.7
	07/28/98	NF	Bailer	0.98	0.99
	07/28/98	NF	Bailer (Dup)	0.88	0.57
	07/28/98	LF	Pump	0.17	0.17
	07/28/98	NF	Pump	0.17	0.18
	07/23/99	FF	Bailer	1.9	1.8
	07/23/99	FF	Bailer (Dup)	2.0	2.0
	02/08/01	NF	Pump	5.81	4.61
	03/26/03	NF	Bailer	0.85	0.83
	06/11/03	NF	Bailer	3.8	3.8
	09/17/03	NF	Bailer	8.6	7.7
	12/10/03	NF	Bailer	3.7	3.4
	03/18/04	FFVI	Bailer	0.23	0.19
	06/15/04	FFVI	Bailer	0.12	0.12
	09/14/04	FF	Pump	2.5	2.4
	11/10/04	FF	Pump	0.600	0.630 J
	02/23/05	FFTC	Pump	0.18	0.17
GW-3-S*	12/10/03	NF	Pump	0.63	0.58
GW-3-M*	12/10/03	NF	Pump	0.26	0.22
GW-3-D*	06/11/03	NF	Pump	2.7	2.7
	12/10/03	NF	Pump	0.48	0.44
GW-4	02/27/98	NF	Bailer	0.043	0.048
	02/27/98	FF	Bailer	0.021	0.019
	03/27/03	NF	Bailer	0.008	0.0011
	06/13/03	NF	Bailer	<0.005	<0.001
	09/19/03	NF	Bailer	0.0052	0.0031
	12/12/03	NF	Bailer	0.0056	<0.001
	03/19/04	FFVI	Bailer	<0.005	0.0013
	06/18/04	FFVI	Bailer	<0.005	0.0024
	09/16/04	FF	Pump	<0.005	0.0012
	11/12/04	FF	Pump	<0.005	0.0013
	02/25/05	FFTC	Pump	<0.005	0.0012

TABLE C-2

HISTORICAL GROUNDWATER ANALYTICAL DATA - CHROMIUM

Honeywell North Hollywood Site

11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	Sample type		mg/L	
				Total Chromium	Chromium VI
		Filtration	Collection		
GW-5	03/24/03	NF	Bailer	0.009	<0.001
	06/13/03	NF	Bailer	0.027	0.022
	09/19/03	NF	Bailer	0.0077	0.0012
	12/12/03	NF	Bailer	0.0072	<0.001
	03/19/04	FFVI	Bailer	<0.005	<0.001
	06/18/04	FFVI	Bailer	<0.005	<0.001
	09/16/04	FF	Pump	<0.005	0.001
	11/12/04	FF	Pump	<0.005	0.0012
	02/25/05	FFTC	Pump	<0.005	<0.001
GW-6	08/01/93	NF	NS	<0.010	NA
	02/09/01	NF	Pump	0.0157	0.001
	03/25/03	NF	Bailer	0.013	0.0012
	06/10/03	NF	Bailer	<0.005	<0.001
	09/16/03	NF	Bailer	0.0063	0.0013
	12/08/03	NF	Bailer	0.0082	<0.001
	03/16/04	FFVI	Bailer	<0.005	0.0011
	06/14/04	FFVI	Bailer	<0.005	<0.001
	09/16/04	FF	Pump	<0.005	0.001
	11/08/04	FF	Pump	<0.005	0.0013
	02/22/05	FFTC	Pump	<0.005	<0.001
GW-7	02/09/01	NF	Pump	0.36	0.311
	03/26/03	NF	Bailer	0.44	0.17
	06/11/03	NF	Bailer	0.53	0.31
	09/17/03	NF	Bailer	2.6	2.4
	09/17/03	NF	Bailer (Dup)	2.7	2.6
	12/09/03	NF	Bailer	3.1	3.1
	03/17/04	FFVI	Bailer	0.33	0.27
	06/16/04	FFVI	Bailer	0.31	0.31
	09/14/04	FF	Pump	1.4	1.3
	09/14/04	FF	Pump (Dup)	1.3	1.3
	11/11/04	FF	Pump	0.260	0.280
	02/24/05	FFTC	Pump	0.14	0.091 J
	02/24/05	FFTC	Pump (Dup)	0.14	0.13
GW-7-S*	12/09/03	NF	Pump	2.7	2.7
GW-7-M*	12/09/03	NF	Pump	2.2	2.2

TABLE C-2

HISTORICAL GROUNDWATER ANALYTICAL DATA - CHROMIUM

Honeywell North Hollywood Site

11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	Sample type		mg/L	
				Total Chromium	Chromium VI
		Filtration	Collection		
GW-7-D*	06/11/03	NF	Pump	0.34	0.28
	12/09/03	NF	Pump	2.1	2.0
GW-8	02/09/01	NF	Pump	0.00614	0.001
	03/24/03	NF	Bailer	0.029	<0.001
	06/10/03	NF	Bailer	0.032	<0.001
	09/16/03	NF	Bailer	0.036	<0.001
	12/08/03	NF	Bailer	0.15	0.001
	03/16/04	FFVI	Bailer	0.033	<0.001
	03/16/04	FFVI	Bailer	0.028	<0.001
	06/14/04	FFVI	Bailer	0.013	0.0013
	06/14/04	FFVI	Bailer (Dup)	0.016	<0.001
	09/14/04	FF	Pump	<0.005	0.001
	11/08/04	FF	Pump	<0.005	0.0014
	02/22/05	FFTC	Pump	<0.005	<0.001
GW-9	02/09/01	NF	Pump	<0.005	0.001
	03/24/03	NF	Bailer	0.077	<0.001
	06/16/03	NF	Bailer	0.014	0.0013
	09/17/03	NF	Bailer	0.018	<0.001
	12/08/03	NF	Bailer	0.24	0.0011
	03/16/04	FFVI	Bailer	0.15	0.0011
	06/15/04	FFVI	Bailer	0.0051	0.001
	09/14/04	FF	Pump	<0.005	0.001
	11/08/04	FF	Pump	<0.005	<0.001
	02/22/05	FFTC	Pump	<0.005	<0.001

TABLE C-2

HISTORICAL GROUNDWATER ANALYTICAL DATA - CHROMIUM
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	Sample type		mg/L	
				Total Chromium	Chromium VI
		Filtration	Collection		
GW-10	02/09/01	NF	Pump	0.617	0.691
	03/26/03	NF	Bailer	0.17	0.041
	06/11/03	NF	Bailer	0.12	0.085
	09/17/03	NF	Bailer	7.9	7.5
	12/10/03	NF	Bailer	27	26
	12/10/03	NF	Bailer (Dup)	28	27
	03/17/04	FFVI	Bailer	1.9	1.7
	03/17/04	FFVI	Bailer (Dup)	1.9	1.7
	06/15/04	FFVI	Bailer	1.1	1.1
	06/15/04	FFVI	Bailer (Dup)	1.1	1.1
	09/15/04	FF	Pump	15	14
	11/11/04	FF	Pump	0.920	0.950
	11/11/04	FF	Pump (Dup)	0.880	0.940 J
	02/25/05	FFTC	Pump	0.2	0.17
GW-10-S*	12/10/03	NF	Pump	36	39
GW-10-M*	12/10/03	NF	Pump	37	35
GW-10-D*	06/11/03	NF	Pump	0.45	0.084
	12/10/03	NF	Pump	37	35
GW-14A	01/14/04	NF	Bailer	0.013	0.0012
	01/14/04	NF	Bailer (Dup)	0.014	0.0013
	03/17/04	FFVI	Bailer	0.1	0.056
	06/15/04	FFVI	Bailer	0.29	0.28
	09/14/04	FF	Pump	0.83	0.79
	11/09/04	FF	Pump	0.220	0.210
	02/23/05	FFTC	Pump	0.82	0.72
GW-14A-S*	01/13/04	NF	Pump	<0.005	0.0011
GW-14B	01/14/04	NF	Pump	<0.005	0.0011
	03/17/04	FFVI	Bailer	<0.005	<0.001
	06/15/04	FFVI	Bailer	<0.005	<0.001
	09/14/04	FF	Pump	0.32	0.30
	11/09/04	FF	Pump	0.300	0.280
	02/24/05	FFTC	Pump	0.05	0.045

TABLE C-2
HISTORICAL GROUNDWATER ANALYTICAL DATA - CHROMIUM
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	Sample type		mg/L	
				Total Chromium	Chromium VI
		Filtration	Collection		
GW-14B-S*	01/13/04	NF	Pump	<0.005	0.0011
GW-14B-M*	01/13/04	NF	Pump	0.0081	0.0011
GW-14B-D*	01/13/04	NF	Pump	<0.005	0.0012
GW-15	06/15/04	NF	Bailer	1.8	1.8
	09/15/04	FF	Pump	8.1	8.8
	09/15/04	FF	Pump	7.7	8.6
	11/10/04	FF	Pump	4.50	4.80
	11/10/04	FF	Pump (Dup)	4.70	4.80
	02/25/05	FFTC	Pump	7.0	6.4
	02/25/05	FFTC	Pump (Dup)	6.7	6.5

Notes:

Samples were analyzed using EPA Method 6010B for chromium and EPA Method 7199 for chromium^{VI}

Dup - Duplicate sample collected

EPA - U.S. Environmental Protection Agency

FF - Field-filtered

FFTC - Field-filtered for total chromium only

FFVI - Field-filtered for chromium^{VI} only

LF - Laboratory-filtered

mg/L - Milligrams per liter

NA - Not analyzed

NF - Not filtered

NS - Not specified

* Multi-depth samples designated as - S - Shallow; M - Middle; D - Deep

< - Less than listed reporting limit

TABLE C-3
HISTORICAL GROUNDWATER ANALYTICAL DATA - METALS
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	(mg/L)																	
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Total Chromium	Chromium VI	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
GW-1	06/16/03	<0.01	<0.005	0.13	<0.004	<0.005	0.26	0.22	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	06/16/03 DUP	<0.01	<0.005	0.13	<0.004	<0.005	0.23	0.23	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.044
	09/17/03	<0.01	<0.005	0.13	<0.004	<0.005	0.25	0.22	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	12/09/03	<0.01	<0.005	0.12	<0.004	<0.005	0.021	0.19	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	03/17/04	<0.01	<0.005	0.14	<0.004	<0.005	0.013	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.029
	06/15/04	<0.01	<0.005	0.13	<0.004	<0.005	0.013	0.0035	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	0.0076	<0.01	<0.02
	09/14/04	<0.01	<0.005	0.13	<0.004	<0.005	0.26	0.23	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	11/09/04	<0.01	<0.005	0.12	<0.004	<0.005	<0.005	<0.0035	<0.001	<0.004	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
	02/23/05	<0.01	<0.012 UJ	0.37	<0.004	<0.005	<0.005	0.0018	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.055
GW-2	06/10/03	<0.01	<0.005	0.12	<0.004	<0.005	0.029	0.026	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/16/03	<0.01	<0.005	0.14	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	12/08/03	<0.01	<0.005	0.13	<0.004	<0.005	0.0063	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	03/16/04	<0.01	<0.005	0.16	<0.004	<0.005	0.018	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	06/14/04	<0.01	<0.005	0.15	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/16/04	<0.01	<0.005	0.13	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	11/08/04	<0.01	<0.005	0.14	<0.004	<0.005	<0.005	0.0011	<0.001	0.001	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	02/22/05	<0.01	<0.005	0.41	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.068
	06/11/03	<0.01	<0.005	0.15	<0.004	<0.005	3.8	3.8	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
GW-3	09/17/03	<0.01	<0.005	0.14	<0.004	<0.005	8.6	7.7	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	12/10/03	<0.01	<0.005	0.12	<0.004	<0.005	3.7	3.4	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.025
	03/18/04	<0.01	<0.005	0.18	<0.004	<0.005	0.23	0.19	<0.01	<0.01	<0.005	<0.0002	<0.02	0.01	<0.005	<0.01	0.0055	<0.01	0.098
	06/15/04	<0.01	<0.005	0.12	<0.004	<0.005	0.12	0.12	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/14/04	<0.01	<0.005	0.12	<0.004	<0.005	2.5	2.4	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.15 UJ
	11/10/04	<0.01	<0.005	0.12	<0.004	<0.005	0.6	0.63 J	<0.001	<0.001	0.63	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.02
	02/23/05	<0.01	<0.0082 UJ	0.36	<0.004	<0.005	0.18	0.17	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.072
	06/11/03	<0.01	<0.005	0.10	<0.004	<0.005	2.7	2.7	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.005	<0.005	<0.01	<0.02
	GW-3-D*																		

TABLE C-3

HISTORICAL GROUNDWATER ANALYTICAL DATA - METALS
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Total Chromium	Chromium VI	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
GW-4	06/13/03	<0.01	<0.005	0.12	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/19/03	<0.01	<0.005	0.12	<0.004	<0.005	0.0052	0.0031	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	12/12/03	<0.01	<0.005	0.14	<0.004	<0.005	0.0056	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	03/19/04	<0.01	<0.005	0.14	<0.004	<0.005	<0.005	0.0013	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.033
	06/18/04	<0.01	<0.005	120	<0.004	<0.005	<0.005	0.0024	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.022
	09/16/04	<0.01	<0.005	0.13	<0.004	<0.005	<0.005	0.0012	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	11/12/04	<0.01	<0.005	0.12	<0.004	<0.005	<0.005	0.0013	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	02/25/05	<0.01	<0.005	0.51	<0.004	<0.005	<0.005	0.0012	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.1
	06/13/03	<0.01	<0.005	0.14	<0.004	<0.005	0.0077	0.0022	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/19/03	<0.01	<0.005	0.14	<0.004	<0.005	0.0072	0.0012	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
GW-5	12/12/03	<0.01	<0.005	0.13	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	03/19/04	<0.01	<0.005	0.13	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	06/18/04	<0.01	<0.005	0.15	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/16/04	<0.01	<0.005	0.13	<0.004	<0.005	<0.005	0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	11/12/04	<0.01	<0.005	0.12	<0.004	<0.005	<0.005	0.0012	<0.01	0.001	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	02/25/05	<0.01	0.0069	0.35	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.17
	06/10/03	<0.01	<0.005	0.15	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/16/03	<0.01	<0.005	0.19	<0.004	<0.005	0.0063	0.0013	<0.01	0.011	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	0.013	0.026
	12/08/03	<0.01	<0.005	0.18	<0.004	<0.005	0.0082	0.0013	<0.01	0.011	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	0.013	0.02
	03/16/04	<0.01	<0.005	0.15	<0.004	<0.005	<0.005	0.0011	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	0.013	0.02
GW-6	06/14/04	<0.01	<0.005	0.16	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/16/04	<0.01	<0.005	0.13	<0.004	<0.005	<0.005	0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	11/08/04	<0.01	<0.005	0.13	<0.004	<0.005	<0.005	0.001	<0.01	0.001	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	02/22/05	<0.01	<0.005	0.32	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.032
	06/11/03	<0.01	<0.005	0.14	<0.004	<0.005	0.53	0.31	<0.01	<0.01	<0.005	<0.0002	<0.02	0.016	<0.005	<0.01	<0.005	<0.01	<0.02
	09/17/03	<0.01	<0.005	0.16	<0.004	<0.005	2.6	2.4	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.028
	09/17/03 DUP	<0.01	<0.005	0.17	<0.004	<0.005	2.7	2.6	<0.01	0.011	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.036
	12/09/03	<0.01	0.0065	0.18	<0.004	<0.005	3.1	3.1	<0.01	0.015	<0.005	<0.0002	<0.02	0.010	<0.005	<0.01	<0.005	0.013	0.033
	03/17/04	<0.01	<0.005	0.18	<0.004	<0.005	0.33	0.27	<0.01	0.11	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.07
	06/16/04	<0.01	<0.005	0.17	<0.004	<0.005	0.31	0.31	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
GW-7	09/14/04	<0.01	<0.005	0.14	<0.004	<0.005	1.4	1.3	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.022 UJ
	09/14/04 DUP	<0.01	<0.005	0.14	<0.004	<0.005	1.3	1.3	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	11/11/04	<0.01	<0.005	0.14	<0.004	<0.005	0.26	0.28	<0.001	0.28	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	02/24/05	<0.01	0.0082	0.26 J	<0.004	<0.005	0.14	0.091 J	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.023 J
	02/24/05	<0.01	<0.005	0.39	<0.004	<0.005	0.14	0.13	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.14

004656

TABLE C-3
HISTORICAL GROUNDWATER ANALYTICAL DATA - METALS
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Total Chromium	Chromium VI	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
GW-7-D*	06/11/03	<0.01	<0.005	0.13	<0.004	<0.005	0.34	0.28	<0.01	<0.01	<0.005	<0.0002	<0.02	0.012	<0.005	<0.01	<0.005	<0.01	<0.02
	06/10/03	<0.01	<0.005	0.14	<0.004	<0.005	0.032	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/16/03	<0.01	<0.005	0.19	<0.004	<0.005	0.036	<0.001	<0.01	0.014	<0.005	<0.0002	<0.02	0.011	<0.005	<0.01	<0.005	0.014	0.026
	12/08/03	<0.01	<0.005	0.20	<0.004	<0.005	0.15	0.001	<0.01	0.015	<0.005	<0.0002	<0.02	0.030	<0.005	<0.01	<0.005	0.015	0.021
GW-8	03/16/04	<0.01	<0.005	0.15	<0.004	<0.005	0.033	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	0.013	<0.005	<0.01	<0.005	<0.01	<0.02
	03/16/04 ^{PUP}	<0.01	<0.005	0.15	<0.004	<0.005	0.028	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	0.013	<0.005	<0.01	<0.005	<0.01	<0.02
	06/14/04	<0.01	<0.005	0.15	<0.004	<0.005	0.013	0.0013	<0.01	<0.01	<0.005	<0.0002	<0.02	0.012	<0.005	<0.01	<0.005	<0.01	<0.02
	06/14/04 ^{PUP}	<0.01	<0.005	0.15	<0.004	<0.005	0.016	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	0.012	<0.005	<0.01	<0.005	<0.01	<0.02
	09/14/04	<0.01	<0.005	0.13	<0.004	<0.005	<0.005	0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	11/08/04	<0.01	<0.005	0.13	<0.004	<0.005	<0.005	0.001	<0.01	0.001	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
GW-9	02/22/05	<0.01	0.0066	0.45	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.11
	06/16/03	<0.01	<0.005	0.21	<0.004	<0.005	0.014	0.0013	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	0.016	0.028
	09/17/03	<0.01	<0.005	0.23	<0.004	<0.005	0.018	<0.001	<0.01	0.12	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	0.015	0.031
	12/08/03	<0.01	0.011	0.56	<0.004	<0.005	0.24	0.0011	0.020	0.077	0.021	0.0004	<0.02	0.052	<0.005	<0.01	<0.005	0.11	0.16
	03/16/04	<0.01	<0.005	0.32	<0.004	<0.005	0.15	0.0011	<0.01	0.025	0.0064	<0.0002	<0.02	0.033	<0.005	<0.01	<0.005	0.037	0.068
	06/15/04	<0.01	<0.005	0.16	<0.004	<0.005	0.0051	0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
GW-10	09/14/04	<0.01	<0.005	0.14	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	11/08/04	<0.01	<0.005	0.15	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	02/22/05	<0.01	0.0071	0.23	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
	06/11/03	<0.01	<0.005	0.14	<0.004	<0.005	0.12	0.085	<0.01	<0.01	<0.005	<0.0002	<0.02	0.010	<0.005	<0.01	<0.005	<0.01	0.021
	09/17/03	<0.01	<0.005	0.17	<0.004	<0.005	7.9	7.5	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	12/10/03	<0.03	<0.015	0.22	<0.012	<0.015	27.0	26.0	<0.03	<0.03	<0.015	<0.0002	<0.06	<0.03	<0.015	<0.03	<0.015	<0.03	<0.06
	12/10/03 ^{PUP}	<0.03	<0.015	0.23	<0.012	<0.015	28.0	27.0	<0.03	<0.03	<0.015	<0.0002	<0.06	<0.03	<0.015	<0.03	<0.015	<0.03	<0.06
	03/17/04	<0.01	<0.005	0.19	<0.004	<0.005	1.9	1.7	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	0.0065	<0.01	<0.02
	03/17/04 ^{PUP}	<0.01	<0.005	0.22	<0.004	<0.005	1.9	1.7	<0.01	<0.01	<0.005	<0.0002	<0.02	0.013	<0.005	<0.01	<0.005	0.01	<0.02
	06/16/04	<0.01	<0.005	0.13	<0.004	<0.005	1.1	1.1	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
GW-10	06/16/04 ^{PUP}	<0.01	<0.005	0.13	<0.004	<0.005	1.1	1.1	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/15/04	<0.02	0.009 J	0.14	<0.008	<0.010	15.0	14.0	<0.02	<0.02	<0.01	0.00014 J	0.013 J	<0.02	<0.01	<0.02	0.007 J	<0.02	<0.04 UJ
	11/11/04	<0.01	<0.005	0.12	<0.004	<0.005	0.92	0.95	<0.001	0.94	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
	11/11/04 ^{PUP}	<0.01	<0.005	0.11	<0.004	<0.005	0.88	0.94 J	<0.001	0.95	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
	02/25/05	<0.01	<0.005	0.26	<0.004	<0.005	0.20	0.17	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.024

TABLE C-3

HISTORICAL GROUNDWATER ANALYTICAL DATA - METALS
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Total Chromium ^{VI}	Chromium ^{VI}	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
GW-10-D*	06/11/03	<0.01	<0.005	0.16	<0.004	<0.005	0.45	0.084	<0.01	<0.01	<0.005	<0.0002	<0.02	0.058	<0.005	<0.01	<0.005	<0.01	<0.02
	01/14/04	<0.01	<0.005	0.10	<0.004	<0.005	0.013	0.0012	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	01/14/04 ^{DUP}	<0.01	<0.005	0.10	<0.004	<0.005	0.014	0.0013	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	03/17/04	<0.01	<0.005	0.13	<0.004	<0.005	0.10	0.056	<0.01	0.01	<0.005	<0.0002	<0.02	0.018	<0.005	<0.01	<0.005	0.015	0.22
GW-14A	06/15/04	<0.01	<0.005	0.098	<0.004	<0.005	0.29	0.028	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	09/14/04	<0.01	<0.005	0.11	<0.004	<0.005	0.83	0.079	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.06 UJ
	11/09/04	<0.01	<0.005	0.11	<0.004	<0.005	0.22	0.021	<0.001	0.21	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
	02/23/05	<0.01	<0.005	0.36	<0.004	<0.005	0.82	0.72	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.058
GW-14A-S*	01/13/04	<0.01	<0.005	0.088	<0.004	<0.005	<0.005	0.0011	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	01/14/04	<0.01	<0.005	0.11	<0.004	<0.005	<0.005	0.0011	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	0.0095	<0.01	<0.02
	03/17/04	<0.01	<0.005	0.14	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	06/15/04	<0.01	<0.005	0.12	<0.004	<0.005	<0.005	<0.001	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	0.031
GW-14B	09/14/04	<0.01	<0.005	0.12	<0.004	<0.005	0.32	0.30	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	11/09/04	<0.01	<0.005	0.13	<0.004	<0.005	0.30	0.28	<0.001	0.28	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
	02/24/05	<0.01	<0.005	0.48	<0.004	<0.005	0.05	0.045	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.12
	01/13/04	<0.01	<0.005	0.11	<0.004	<0.005	<0.005	0.0011	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
GW-14B-S*	01/13/04	<0.01	<0.005	0.12	<0.004	<0.005	0.0081	0.0011	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
GW-14B-M*	01/13/04	<0.01	<0.005	0.12	<0.004	<0.005	<0.005	0.0012	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
GW-14B-D*	01/13/04	<0.01	<0.005	0.094	<0.004	<0.005	1.8	1.8	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.02
	06/16/04	<0.01	<0.005	0.094	<0.004	<0.005	8.1	8.8	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	0.0052	<0.01	0.078 J
	09/15/04	<0.01	0.0056	0.12	<0.004	<0.005	7.7	8.6	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.005	<0.01	<0.021 UJ
	09/15/04 ^{DUP}	<0.01	<0.005	0.12	<0.004	<0.005	4.5	4.8	<0.001	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
GW-15	11/10/04	<0.01	<0.005	0.12	<0.004	<0.005	4.5	4.8	<0.001	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
	11/10/04 ^{DUP}	<0.01	<0.005	0.12	<0.004	<0.005	4.5	4.8	<0.001	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
	02/25/05	<0.01	0.0066	0.26 J	<0.004	<0.005	7.0	6.4	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.038
	02/25/05	<0.01	<0.005	0.18	<0.004	<0.005	6.7	6.5	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02

Notes:

Samples were analyzed using EPA Method 6010B, except for chromium^{VI} (EPA Method 7199) and mercury (EPA Method 7470A)

EPA - U.S. Environmental Protection Agency

DUP - Duplicate sample collected

J - Estimated

mg/L - Milligrams per liter

UJ - Result is non detected, however, the reporting limit is qualified as estimated

< - Less than listed reporting limit

*Sample from lower part of well screen interval.

TABLE C-4

HISTORICAL GROUNDWATER ANALYTICAL DATA - ORGANICS

Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	µg/L									
		1,1,1-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	Carbon Tetrachloride	Chloroform	cis-1,2-Dichloroethene	Dichlorodifluoromethane	Tetrachloroethene	Trichloroethene
GW-1	11/09/04	<1	1.5	2.3	<0.5	<0.5	<1	10	<2	5.6	13
	02/23/05	<1	3.1	<1	0.91	<0.5	<1	22	10	12	11
GW-2	11/08/04	<1	2.8	<1	0.93	<0.5	<1	20	4.7	10	14
	02/22/05	<1	3.5	<1	1.9	<0.5	<1	29	15	15	8.6
GW-3	06/11/03	6.9	12	8.8	1.20	0.58	2.0	24	7.2	15	200
	6/11/03 ^{DUP}	3.7	6.8	5.1	0.86	<0.28	1.2	18	<1.1	10	110
	11/10/04	<1	3.4	<1	0.86	<0.5	<1	23	6.0	14	21
	02/23/05	<1	3.8	<1	1.3	<0.5	<1	29	14	16	12
GW-4	11/12/04	<1	3.7	<1	1.10	<0.5	<1	23	13	15	12
	02/25/05	<1	3.9	<1	1.0	<0.5	<1	27	14	14	12
GW-5	11/12/04	<1	3.9	<1	0.88	<0.5	<1	21	9.3	17	11
	02/25/05	<1	5.6	<1	1.3	<0.5	<1	34	18	18	15
GW-6	11/08/04	<1	2.0	<1	0.51	<0.5	<1	13	<2	7.4	5.2
	02/22/05	<1	4.8	<1	1.3	<0.5	<1	28	14	17	11
GW-7	6/11/03 ^{DUP}	<0.6	6.7	2.5	1.00	<0.56	2.2	22	<2.2	12	170
	11/11/04	1.7	5.9	<2.5 UJ	0.68	<0.5	1.2	20	5.8	12	87
	02/24/05	<1	5.2	1.5	1.0	<0.5	<1	27	11	14	53
	2/24/05 ^{DUP}	<1	5.0	1.4	1.1	<0.5	1.0	25	11	13	51
GW-8	11/08/04	<1	1.5	<1	0.58	<0.5	<1	11	3.4	7.9	14
	02/22/05	<1	1.8	<1	0.66	<0.5	<1	14	4.9	8.7	9.9
GW-9	11/08/04	<1	1.6	<1	0.60	0.5	<1	12	2.6	7.3	21
	02/22/05	<1	1.9	<1	0.64	<0.5	<1	14	4.6	9.5	17
GW-10	06/11/03	4.6	<1.1	7.6	<1.1	<1.1	6.3	24	<4.4	20	610
	6/11/03 ^{DUP}	2.3	3.1	<0.64	<0.56	<0.56	2.8	17	<2.2	13	240
	11/11/04	<1	2.0	<1	0.84	<0.5	<1	16	9.5	12 J	25 J
	11/11/04 ^{DUP}	<1	2.0	<1.8 UJ	0.82	<0.5	1.1	17	9.3	16	130
GW-14A	02/25/05	<1	2.6	<1	1.2	<0.5	<1	23	13	13	18
	11/09/04	<1	2.1	1.8	0.50	<0.5	<1	11	<2	8.3	29
GW-14B	02/23/05	<1	3.9	<1	1.6	<0.5	<1	31	7.0	16	14
	11/09/04	<1	3.6	<1	1.30	<0.5	<1	28	7.0	15	15
GW-15	02/24/05	<1	4.3	<1	1.7	<0.5	<1	37	16	16	9.5
	05/13/04	<1	1.2	<1	<0.5	<0.5	<1	6	<5	2.3	14
	11/10/04	3.5	6.7	6.0	1.30	0.54	1.5	23	7.9	13	120
	11/10/04 ^{DUP}	3.5	6.5	6.2	1.20	0.57	1.5	22	8.1	12	120
	02/25/05	4.0	8.0	7.6	1.2	0.51	2.2	26	8.2	13	160
	2/25/05 ^{DUP}	3.9	7.8	7.4	1.2	<0.5	2.2	25	8.2	13	150

Notes:

Samples were analyzed using EPA Method 8260

Only detected analytes are shown.

DUP - Duplicate sample listed immediately below original sample

EPA - U.S. Environmental Protection Agency

J - Estimated

µg/L - Micrograms per liter

UJ - Result is non detect, however, the reporting limit is qualified as estimated

< - Less than listed reporting limit

TABLE C-5

HISTORICAL GROUNDWATER ANALYTICAL DATA - EMERGING CHEMICALS

Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	µg/L			
		Perchlorate (EPA 314.0)	n-Nitrosodi- methylamine (EPA 1625)	1,4-Dioxane (EPA 8270C)	1,2,3- Trichloropropane (EPA 8260B)
GW-1	03/25/03	<2.0	<0.002	4.4	<0.005
	03/25/03 ^{DUP}	<2.0	<0.002	3.9	0.0053
	06/16/03	<2.0	0.0022	4.6	0.007
	06/16/03 ^{DUP}	<2.0	0.0048	4.4	0.0056
	09/17/03	2.2	<0.002	3.1	<0.005
	12/09/03	<2.0	0.014	3.7	<0.005
GW-2	03/25/03	<2.0	<0.002	3.6	0.016
	06/10/03	<2.0	0.025	4.0	0.011
	09/16/03	<2.0	0.043 J	3.6	<0.005
	12/08/03	<2.0	0.011	5.5	<0.005
	03/16/04	<2.0	NA	5.5	NA
	06/14/04	<2.0	NA	5.1	NA
	09/16/04	<2	NA	4.2	NA
	11/08/04	<2	NA	5.0	NA
GW-3	02/22/05	<2	NA	4.1	NA
	03/26/03	2.0	<0.002	5.2	0.0083
	06/11/03	4.4	<0.002	20	0.0084
	09/17/03	17.0	<0.0023 J	30	<0.005
	12/10/03	8.4	0.021	14	<0.005
	03/18/04	<2.0	NA	5.9	NA
	06/15/04	<2.0	NA	6.4	NA
	09/14/04	5.3	NA	9.1	NA
	11/10/04	<2	NA	6.2	NA
GW-4	02/23/05	<2	NA	5.4	NA
	03/27/03	<2.0	<0.002	4.0	0.007
	06/13/03	<2.0	0.018	4.7	0.0069
	09/19/03	<2.0	<0.0068 J	3.5	0.0052
GW-5	12/12/03	<2.0	0.017	4.1	<0.005
	03/24/03	<2.0	<0.002	5.5	0.013
	06/13/03	<2.0	0.025	6.4	0.013
	09/19/03	<2.0	<0.002	27	<0.005
	12/12/03	<2.0	0.031	4.9	<0.005

TABLE C-5

HISTORICAL GROUNDWATER ANALYTICAL DATA - EMERGING CHEMICALS

Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	$\mu\text{g/L}$			
		Perchlorate	n-Nitrosodi- methylamine	1,4-Dioxane	1,2,3- Trichloropropane
GW-6	03/25/03	<2.0	0.003	3.5	<0.005
	06/10/03	<2.0	0.0032	5.2	0.0054
	09/16/03	<2.0	<0.0021 J	5.3	0.005
	12/08/03	<2.0	<0.002	4.9	0.0056
	03/16/04	<2.0	NA	5.0	NA
	06/14/04	<2.0	NA	5.8	NA
	09/16/04	<2	NA	4.1	NA
	11/08/04	<2	NA	3.8	NA
	02/22/05	<2	NA	6.3	NA
GW-7	03/26/03	<2.0	<0.002	4.9	0.010
	06/11/03	<2.0	<0.002	6.5	0.010
	09/17/03	8.9	<0.0028 J	32	<0.005
	09/17/03 ^{DUP}	9.2	<0.0026 J	35	<0.05
	12/09/03	10	0.034	23	<0.005
	03/17/04	<2.0	NA	5.2	NA
	06/16/04	2.1	NA	4.8	NA
	09/14/04	3.7	NA	11	NA
	09/14/04 ^{DUP}	3.9	NA	10	NA
	11/11/04	<2	NA	5.6	NA
	02/24/05	<2	NA	5.0	NA
	02/24/05	<2	NA	5.1	NA
GW-8	03/24/03	<2.0	0.0037	7.3	<0.005
	06/10/03	<2.0	<0.002	5.3	<0.005
	09/16/03	<2.0	<0.0064 J	4.1	<0.005
	12/08/03	<2.0	0.0031	4.2	<0.005
GW-9	03/24/03	<2.0	0.012	2.6	<0.005
	06/16/03	2.3	0.0096	1.2	<0.005
	09/17/03	2.7	<0.0044 J	1.0	<0.005
	12/08/03	<2.0	0.0049	1.5	<0.005

TABLE C-5

HISTORICAL GROUNDWATER ANALYTICAL DATA - EMERGING CHEMICALS

Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Sample Date	$\mu\text{g/L}$			
		Perchlorate	n-Nitrosodi- methylamine	1,4-Dioxane	1,2,3- Trichloropropane
GW-10	03/26/03	<2.0	<0.002	5.2	0.0063
	06/11/03	<2.0	<0.002	6.5	<0.005
	09/17/03	19	<0.0021 J	19	<0.005
	12/10/03	45	0.0043	37	<0.005
	12/10/03 ^{DUP}	38	0.0043	37	<0.005
	03/17/04	3.4	NA	6.6	NA
	03/17/04 ^{DUP}	<2.0	NA	5.4	NA
	06/16/04	3.1	NA	7.4	NA
	06/16/04 ^{DUP}	<2.0	NA	6.3	NA
	09/15/04	11	NA	17	NA
	11/11/04	<2	NA	4	NA
	11/11/04 ^{DUP}	<2	NA	4.1	NA
	02/25/05	<2	NA	<5	NA
	06/16/04	2.9	NA	8.1	NA
GW-15	09/15/04	13	NA	24	NA
	09/15/04 ^{DUP}	14	NA	23	NA
	11/10/04	6.7	NA	11	NA
	11/11/04 ^{DUP}	6.4	NA	9.2	NA
	02/25/05	8.8	NA	16	NA
	02/25/05	8.9	NA	14	NA

Notes:

DUP - Duplicate sample collected

EPA - U.S. Environmental Protection Agency

J - Estimated

 $\mu\text{g/L}$ - Micrograms per liter

NA - Not analyzed

< - Less than listed reporting limit

APPENDIX D
GROUNDWATER SAMPLING LOGS

004663

WELL GAUGING FORM

Client: Honeywell - North Hollywood

Site: 11600 Sherman Way, North Hollywood

Job Number: 1890933.0501

WELL ID	WATER LEVEL (ft)	WELL DEPTH (ft)	TAKEN FROM	WELL DIAMETER (in)	DATE	TIME (24hr)	COMMENTS/CONDITION OF WELL, WELL HEAD, ETC.
GW-5	278.34	308	TOC	4"	2/22/05	0515	
GW-4	274.91	305		4"		0535	Even installing transducer
GW-8	275.69	285		4"		0545	
GW-9	274.33	303		4"		0610	
GW-7	268.54	310		4"		0635	download transducer data
GW-10	271.31	310		4"		0652	download transducer data
GW-15	270.33	~300		6"		0715	
GW-6	277.91	305		4"		0735	
GW-2	272.99	301		4"		0800	
GW-1	273.98	305		4"		0815	download transducer data
GW-14A	273.41	285		4"		0825	
GW-14B	272.70	312		4"	↓	0827	
GW-3	270.76	305		4"	2/22/05	0905	
GW-12A-285	266.10	285		1"	2/23/05	1425	
GW-12A-320	265.95	320	↓	1"	↓	1430	
GW-12A-350	266.02	350	TOC	1"	2/23/05	1434	

NOTES:

* TOC - Top of Casing

GL - Ground Level

PC - Protective Casing

PAS: PFO/Admin/Standard MW Forms/GW Gauging and Sampling Log



MWH

MONTGOMERY WATSON HAFIZA

004664



GROUND WATER PURGING (LOW FLOW) FORM

Client: Honeywell - North Hollywood

Total well depth (ft): 305

Site: 11600 Sherman Way, North Hollywood

Well Diameter (in): 4

Job Number: 1890933.0501

Borehole Diameter (in): 4

Static water level (ft): 273.98

Development method: low-flow

Bailer ID:

Previous static water level (ft):

Purging method: _____

Sample Date: 2/23/05

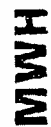
Standing water column (ft):

Sampling method: fvba

* All measurements taken from: ☒ Top of casing, ☐ Protective casing, ☐ Ground level

instrument = Y51 650 MDS

TIME	AMOUNT (LITERS)	ACF (msec)	pH	TEMP (°C)	TURBIDITY (NTU)	ORP (mV)	DO (mg/L)	COLIFORMS	WATER LEVEL (ft)
0812								start pumping	
0820	8 gal	1811	7.36	19.74	2	134.5	5.36		
0825	12 gal	1810	7.36	19.55	1	132.1	5.25		
0830	18 gal	1808	7.37	20.04	1	132.2	5.53		
0835	23 gal	1802	7.39	20.02	1	131.1	5.47	DTW = 272.99	
0845								collect GW-1-02/24/05	
								Decon 3 bucket method	



GROUND WATER PURGING (LOW FLOW) FORM

GW-2

Client: Honeywell - North Hollywood

Total well depth (ft): 301

2/22/05

Site: 11600 Sherman Way, North Hollywood

Job Number: 1890933.0501

Borehole Diameter (in):

I (R): 272.99

Development method: low flow

Bailer ID:

Previous static water level (ft): _____

Parking method: ↓

Sample Date: 2/22/05

Standing water column (ft):

Sampling method: Febe

* All measurements taken from: ☒ Top of casing, ☐ Protective casing, ☐ Ground level

TIME	AMOUNT PURGED (gal)	EC (mmhos/cm)	pH	TEMP (°C)	TURBIDITY (NTU)	ORP (mV)	DO (mg/L)	COLLECTOR COMMENTS	WATER LEVEL (ft bgs)
1210								start pumping	
1225	15	1896	7.27	20.16	1	126.5	1.63		
1230	20	1905	7.27	20.24	1	125.6	1.70		
1235	25	1905	7.27	20.23	1	125.3	1.56		
1240	30	1907	7.28	20.32	2	125.3	1.52	DTW = 272.99	
1250								collect - 6W-2-422605 decon > bucket method	



GROUND WATER PURGING (LOW FLOW) FORM

Client: Honeywell - North Hollywood

Total well depth (ft): 305

Site: 11600 Sherman Way, North Hollywood

Well Diameter (in): 4"

Job Number: 1890933.0501

Borehole Diameter (in):

Static water level (ft): 270.76

Development method: *lean flow*

Previous static water level (Ω):

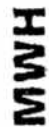
Purging method:

Standing water column (Ω):

Sampling method: tuba

* All measurements taken from: ☒ Top of casing, ☐ Protective casing, ☐ Ground level

TIME	AMOUNT INJECTED (gal)	EC (µmhos/cm)	pH	TEMP (°C)	TURBIDITY (NTU)	ORP (mV)	DO (mg/L)	COLOR/COMMENTS	WATER LEVEL (ft)
0945								start pumping	
0955	10 gal	1780	7.33	19.24	2	130.0	3.46		
1000	15 gal	1786	7.33	19.24	2	130.5	3.45		
1005	20 gal	1789	7.33	19.27	1	130.9	3.43	DTW = 270.76	
1015								collect GW-3-2/23/05 decon 3 basket method	



GROUND WATER PURGING (LOW FLOW) FORM

Client: Honeywell - North Hollywood

Purging Date: 2/25/05

Site: 11600 Sherman Way, North Hollywood

Job Number: 1890933.0501

Total well depth (ft): 305

Well Diameter (in):-

Borehole Diameter (in):

Gauging Date: 2/22/05

Static water level (ft): 274.91Development method: low flow

Bailer ID:

Previous static water level (Ω):

Purging method:

Sample Date: 2/25/05

Standing water column (ft): _____

Sampling method: tube

VST-650 MD5

* All measurements taken from: ☒ Top of casing, ☐ Protective casing, ☐ Ground level

[illegible]



GROUND WATER PURGING (LOW FLOW) FORM

GW-5

Client: Honeywell - North Hollywood

Total well depth (ft): 308

2/25/05

Site: 11600 Shennan Way, North Hollywood

Job Number: 1890933.0501

Borehole Diameter (in):

22/05

Static water level (ft): 274.34

Development method: Low flow

Bailer ID:

Previous static water level (ft):

Purging method:

Sample Date: 2/25/05

Standing water column (ft):

Sampling method: tube

* All measurements taken from $\frac{1}{2}$ Top of casing. ___ Protective casing. ___ Ground level

TIME	VOLUME (ACCUMULATED - gal)	EC (mS/cm)	pH	TEMP. (°F)	TURBIDITY (NTU)	ORP (mv)	DO (mg/L)	CONDUCTIVITY (µM/S)	WATER LEVEL (INCHES)
0245									
0255	10 gal	2000	7.35	19.02	2	116.8	3.77		start pumping
0300	15 gal	1953	7.38	19.53	2	119.8	3.57		
0305	20 gal	1965	7.38	19.73	2	119.5	3.38		DTW = 274.46
0310									collect GW-S-2 / 2.5 / 0.5 drawn 3 bucket method



GROUND WATER PURGING (LOW FLOW) FORM

Client: Honeywell - North Hollywood

Total well depth (ft): 305

Site: 11600 Sherman Way, North Hollywood

Well Diameter (in): 4

Job Number: 1890933.0501

Borehole Diameter (in):

Gauging Date: 2/22/05

Static water level (ft): 277.91

Development method: low flow

Bailer ID: _____

Previous static water level (ft):

Purging method: _____

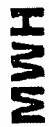
Sample Date: 2/22/05

Standing water column (ft):

Sampling method: fvbe

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

[illegible]



GROUND WATER PURGING (LOW FLOW) FORM

6W-7

1

2/24/05

Client: Honeywell - North Hollywood

Site: 11600 Sherman Way, North Hollywood

Job Number: 1890933.0501

Total well depth (ft): 310

Well Diameter (in): 4"

Borehole Diameter (in):

Gauging Date: 2/22/05

Static water level (m): 268.54

Bailer ID:

Previous static water level (ft):

Sample Date: 2/24/05

Standing water column (A):

* All measurements taken from: ☒ Top of casing, ___ Protective casing, ___ Ground level

Development method: Low flow

Purging method:

Sampling method: tube

50m 059 ISL

TIME	(AMOUNT) WATER DIL.	T.C. (mg/l)	pH	TEMP (°C)	TURBIDITY (NTU)	ORP (mV)	DO (mg/L)	COLOR/COMMENTS	WATER LEVEL (ft bgs)
02155								start pumping	
2210	15 gal	1708	7.39	20.19	1	126.1	4.96		
2215	20 gal	1713	7.39	20.50	2	125.1	5.04		
2220	25 gal	1722	7.39	20.55	2	124.9	4.93		
2225	30 gal	1716	7.40	20.59	2	124.6	4.82	D TW = 268.65	
2230								collect GW-7-2/24/05	
								decon 3 bucket method	



GROUND WATER PURGING (LOW FLOW) FORM

GW-8

Client: Honeywell - North Hollywood

Total well depth (ft): 305

Site: 11600 Sherman Way, North Hollywood

Well Diameter (in): 4"

Job Number: 1890933.0501

Borehole Diameter (in):

Static water level (ft): 275.67

Development method: low flow

Bailer ID:

Previous static water level (ft):

Purging method: _____

Sample Date: 2/24/05

Standing water column (ft): _____

Sampling method: tube

* All measurements taken from: ☒ Top of casing, ___ Protective casing, ___ Ground level

Yst 650 mds

[illegible]



GROUND WATER PURGING (LOW FLOW) FORM

Client: Honeywell - North Hollywood

Total well depth (ft): 310

Site: 11600 Sherman Way, North Hollywood

Well Diameter (in): 4"

Job Number: 1890933.0501

Borehole Diameter (in):

Gauging Date: 2/22/05

Static water level (ft): 271.31

Development method: Low flow

Bailer ID:

Previous static water level (ft):

Purging method: ↓

Sample Date: 2/24/05

Standing water column (ft):

Sampling method: tube

YST 650 MDS

* All measurements taken from: ☒ Top of casing, ☐ Protective casing, ☐ Ground level

[illegible]



GROUND WATER PURGING (LOW FLOW) FORM

Job Number: 1890933.0501

Static water level (m): 279.41

Previous static water level (ft):

Standing water column (ft):

* All measurements taken from: ☒ Top of casing, ☐ Protective casing, ☐ Ground level

YsI 65D mo

[illegible]



GROUND WATER PURGING (LOW FLOW) FORM

GW-14A (Protocol C)

2/23/05

Client: Honeywell - North Hollywood

Site: 11600 Sherman Way, North Hollywood

Job Number: 1890933.0501

Total well depth (ft): 285

Well Diameter (in): 4"

Borehole Diameter (in):

Gauging Date: 2/22/05

Static water level (ft): 273.41

Bailer ID:

Previous static water level (ft):

Sample Date: 2/23/05

Standing water column (ft):

Development method: Law of flow

Purging method:

Sampling method: tube

* All measurements taken from ~~X~~ Top of casing, ___ Protective casing, ___ Ground level

[illegible]



GROUND WATER PURGING (LOW FLOW) FORM

Total well depth (ft): 285
Well Diameter (in): 4"
Borehole Diameter (in):

Gauging Date: 2/22/05
 Bailer ID: _____
 Sample Date: 2/23/05

Static water level (ft): 273.41
 Previous static water level (ft): _____
 Standing water column (ft): _____

* All measurements taken from: X Top of casing, _____ Protective casing, _____ Ground level

Development method: Well vls
 Purging method: 3CVs
 Sampling method: bailer

YSI 650 M05

3CVs = 22.6 gal

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

[illegible]



GROUND WATER PURGING (LOW FLOW) FORM

Client: Honeywell - North Hollywood

Total well depth (ft): 312

Site: 11600 Sherman Way, North Hollywood

Well Diameter (in): 6"

Job Number: 1890933.0501

Borehole Diameter (in):

Static water level (ft): 272.70

$$1.47 \times 39.3 = 57.7$$

Development method: low flow.

Bailer ID:

Previous static water level (ft):

$$\overline{3CVCX=XX=112}$$

Purging method: _____

Sample Date: 2/24/05

Standing water column (ft):—

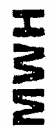
Sampling method: tube

YSI 650 MDS

* All measurements taken from: X Top of casing. ___ Protective casing. ___ Ground level

[illegible]

004678



GROUND WATER PURGING (LOW FLOW) FORM

Borehole Diameter (in):

Development method: low flow

Previous static water level (ft):

Standing water column (ft):

* All measurements taken from: X Top of casing. ___ Protective casing. ___ Ground level

YST 650 MDs

TIME	AMOUNT PURGED (gal)	PC (lb/cu ft)	pH	TEMP (°C)	TURBIDITY (NTU)	ORP (mV)	DO (mg/l)	COLOR/COMMENTS	WATER SAMPLE (liters)
1835								start pumping	
1845	10 gal	1881	7.19	19.94	2	134.7	7.53		
1850	15 gal	1888	7.33	20.25	1	122.1	7.38		
1855	20 gal	1892	7.34	20.27	1	120.1	7.20		
1900	25 gal	1890	7.34	20.34	1	120.0	6.73	DTW = 272.98	
1905								collect 6W-14B	
								decon 3 bucket method	



GROUND WATER PURGING (LOW FLOW) FORM

Well Number: GW-14B (Potomac)

Client: Honeywell - North Hollywood

Total wall depth (A): 312

Purging Date: 2/24/05

Site: 11600 Sherman Way, North Hollywood

Well Diameter (in): 6"

Job Number: 1890933.0501

Borehole Diameter (in):

Gauging Date: 2/22/05

Static water level (m): 272.70 3CVs: $1.47 \times 39.3 = 57.7$

Each volr

Development method: Low fidelity

Bailer ID:

Previous static water level (ft):

Purging method. *Save* ↓

Sample Date: 2/24/05

Standing water column (ft): _____

Sampling method: *tube*

YSI 650 MDS

* All measurements taken from: ☒ Top of casing, ☐ Protective casing, ☐ Ground level

W.F.P.



GROUND WATER PURGING (LOW FLOW) FORM

Job Number: 1890933.0501

Standing water column (ft):

Development method: low flow
 ↓
 Purging method:
 Sampling method: tube
YSI 650 nas

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

[illegible]

004681

APPENDIX E

PURGING AND SAMPLING EVALUATION

TABLE E-1

PURGING PROTOCOLS SUMMARY OF INORGANIC ANALYTICAL DATA
FIRST QUARTER 2005
Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California

Well ID	Purging Protocol	Sample Date	(mg/L)																	
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Total Chromium	Chromium VI	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
GW-14A	A	11/09/04	<0.01	<0.005	0.089	<0.004	<0.005	1.7	1.8	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	<0.02
		02/23/05	<0.01	<0.005	0.38	<0.004	<0.005	0.43	0.39	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.15
	B	11/09/04	<0.01	<0.005	0.11	<0.004	<0.005	0.22	0.21	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.01	<0.01	<0.02
		02/23/05	<0.01	<0.005	0.36	<0.004	<0.005	0.82	0.72	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.058
	C	11/09/04	<0.01	<0.005	0.11	<0.004	<0.005	0.17	0.18	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.01	<0.01	<0.02
		02/23/05	<0.01	<0.005	0.39	<0.004	<0.005	1.1	1.1	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.086
	D	11/09/04	<0.01	<0.005	0.092	<0.004	<0.005	1.5	1.6	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.01	<0.01	<0.02
		02/23/05	<0.01	<0.005	0.39	<0.004	<0.005	1.1	3.4 J	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.086
GW-14B	A	11/09/04	<0.01	<0.005	0.13	<0.004	<0.005	0.3	0.35	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.01	<0.01	<0.02
		02/23/05	<0.01	<0.005	0.61	<0.004	<0.005	0.046	0.048	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.13
	B	11/09/04	<0.01	<0.005	0.13	<0.004	<0.005	0.3	0.28	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.01	<0.01	<0.02
		02/24/05	<0.01	<0.005	0.48	<0.004	<0.005	0.05	0.045	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.12
	C	11/09/04	<0.01	<0.005	0.13	<0.004	<0.005	0.29	0.36	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.01	<0.01	<0.02
		02/24/05	<0.01	<0.005	0.49	<0.004	<0.005	0.052	0.045	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.093
	D	11/09/04	<0.01	<0.005	0.13	<0.004	<0.005	0.3	0.39	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.01	<0.01	<0.02
		02/24/05	<0.01	<0.005	0.6	<0.004	<0.005	0.049	0.045	<0.01	<0.01	<0.005	<0.0002	<0.02	<0.01	<0.005	<0.01	<0.001	<0.01	0.13

Notes:

Samples were analyzed using EPA Method 6010B, except for chromium^{VI} (EPA Method 7199), mercury (EPA Method 7470A), and thallium (EPA Method 6020)

EPA - U.S. Environmental Protection Agency

J - Estimated

mg/L - Milligrams per liter

< - Less than listed reporting limit

Protocol A - No purge sample using a bailer from the top of the water column.

Protocol B - Purge 3-5 feet below top of water and sample through tube after stable parameters using modified low flow.

Protocol C - Purge 5 feet above bottom of casing and sample through tube after stable parameters using modified low flow.

Protocol D - Purge starting in the middle of screen, move pump up every so often until 3-5 feet below top of water. Sample after stable parameters and 3 casing volumes using modified low flow. Sample using a disposable bailer.

004683

TABLE E-2

**PURGING PROTOCOLS SUMMARY OF ORGANIC ANALYTICAL DATA
FIRST QUARTER 2005**

**Honeywell North Hollywood Site
11600 Sherman Way, North Hollywood, California**

Well ID	Purging Protocol	Sample Date	µg/L									
			1,1,1-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	Carbon Tetrachloride	Chloroform	cis-1,2-Dichloroethene	Dichlorodifluoromethane	Tetrachloroethene	Trichloroethene
GW-14A	A	11/09/04	1.7	2.3	3	<0.5	<0.5	1.2	6.8	<2	3.3	54
		02/23/05	<1	3.9	1.1	1.5	<0.5	<1	31	5.8	17	24
	B	11/09/04	<1	2.1	1.8	0.5	<0.5	<1	11	<2	8.3	29
		02/23/05	<1	3.9	<1	1.6	<0.5	<1	31	7	16	14
	C	11/09/04	<1	2.1	1.6	0.5	<0.5	<1	10	2	7.4	26
		02/23/05	<1	4	<1	1.6	<0.5	<1	31	6.3	16	14
	D	11/09/04	1.7	2.3	3	0.51	0.56	1.2	7.7	<2	4.9	47
		02/23/05	<1	3.5	1.1	1.3	<0.5	<1	25	3.8	14	24
GW-14B	A	11/09/04	<1	3.9	<1	1.3	<0.5	<1	30	6.4	17	15
		02/23/05	<1	4	<1	1.6	<0.5	<1	33	14	18	8.7
	B	11/09/04	<1	3.6	<1	1.3	<0.5	<1	28	7	15	15
		02/24/05	<1	4.3	<1	1.7	<0.5	<1	37	16	16	9.5
	C	11/09/04	<1	4.2	<1	1.4	<0.5	<1	33	7.2	15	15
		02/24/05	<1	4.8	<1	1.9	<0.5	<1	40	18	18	10
	D	11/09/04	<1	3.2	<1	1.1	<0.5	<1	25	4.6	14	13
		02/24/05	<1	4.5	<1	1.8	<0.5	<1	37	16	19	9.7

Notes:

Samples were analyzed using EPA Method 8260

Only detected analytes are shown.

EPA - U.S. Environmental Protection Agency

µg/L - Micrograms per liter

< - Less than listed reporting limit

Protocol A - No purge sample using a bailer from the top of the water column.

Protocol B - Purge 3-5 feet below top of water and sample through tube after stable parameters using modified low flow.

Protocol C - Purge 5 feet above bottom of casing and sample through tube after stable parameters using modified low flow.

Protocol D - Purge starting in the middle of screen, move pump up every so often until 3-5 feet below top of water. Sample after stable parameters and 3 casing volumes using modified low flow. Sample using a disposable bailer.

004684

APPENDIX F
LABORATORY ANALYTICAL REPORTS

004685



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: MWH Americas - Brea
3050 Saturn St., Suite 205
Brea, CA 92821
Attention: Lisa Hall

Project: Honeywell, North Hollywood

Sampled: 02/22/05
Received: 02/23/05
Issued: 03/08/05 16:48

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: MWH Americas - Brea
3050 Saturn Ave., Suite 205
Brea, CA 92821
Attention: Lisa Hall

Project: Honeywell, North Hollywood
1890933.0501

Sampled: 02/23/05
Received: 02/23/05
Issued: 03/01/05 17:30

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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This entire report was reviewed and approved for release.

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LABORATORY REPORT

Prepared For: MWH Americas - Brea
3050 Saturn Ave., Suite 205
Brea, CA 92821
Attention: Lisa Hall

Project: Honeywell, North Hollywood
1890933.0501

Sampled: 02/23/05
Received: 02/23/05
Issued: 03/01/05 15:25

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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LABORATORY REPORT

Prepared For: MWH Americas - Brea
3050 Saturn Ave., Suite 205
Brea, CA 92821
Attention: Lisa Hall

Project: Honeywell, North Hollywood
1890933.0501

Sampled: 02/24/05-02/25/05
Received: 02/25/05
Issued: 03/01/05 16:19

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 3 pages, are included and are an integral part of this report.

This entire report was reviewed and approved for release.

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APPENDIX G
DATA VALIDATION REPORT

004891

MEMORANDUM



MWH

Data Validation Report

To: Lisa Hall– Brea

From: Travis Peterson – WCK DEI

Report Ref: Del Mar Analytical

SDGs: IOB1727, IOB1817, IOB1818,
IOB1976, IOB1996

Date: March 29, 2005

Site: Honeywell North Hollywood
Groundwater Monitoring

Job Number: 1890933

File Reference:

This data validation report has been prepared for the above referenced site and summarizes the review of analytical data submitted by Del Mar Analytical Laboratory located in Irvine, California. Samples were collected February 22nd through 25th, 2005 as part of the First Quarter Groundwater Monitoring event conducted at the former Honeywell site located in North Hollywood, California. A summary of samples collected for this event is included in Table G-1. Twenty-two primary field samples, two field duplicates, and eight field quality control (QC) samples were submitted. **DUP-01-2/24/2005** and **GW-7-2/24/2005** were submitted as a field duplicate pair; **DUP-03-2/25/2005** and **GW-15-2/25/2005** were also submitted as a field duplicate pair. Samples were analyzed by one or more of the following methods:

- Volatile Organic Compounds (VOCs) by United States Environmental Protection Agency (USEPA) method SW8260B
- 1,4-Dioxane by USEPA Method SW8270C
- Perchlorate by USEPA Method 314.0
- Title 22 metals (Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Hg, Mo, Ni, Se, Ag, Tl, V, Zn) by USEPA Methods SW6010B and SW7470A
- Hexavalent chromium by USEPA Method SW7199

Results were reviewed in accordance with the appropriate methods listed above. In addition, the USEPA Contract Laboratory Program National Functional Guidelines for Organic (USEPA 1999) and Inorganic (USEPA 2004) Data Review were used to provide overall guidance for the validation process. The data review included an evaluation of the following QC parameters based on standard performance criteria presented in these documents.

- Analytical Holding Times/Sample Preservation
- Method Blanks and Field Blanks
- Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD) Performance

- Surrogate Percent Recovery
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample Performance
- Field Duplicate Comparison
- Detection Limits

Summary of Findings:

Data were qualified as necessary based on the data validation process described above. Qualified results are listed in Table G-2. All samples arrived at the laboratory in good condition and on ice. All samples were analyzed according to the accompanying chains of custody (COCs). All analytical holding times were met with one exception. Two groundwater samples were analyzed past holding time for hexavalent chromium. Hexavalent chromium in groundwater has a 24-hour holding time. The samples were analyzed within a few hours of expiration. In one case, hexavalent chromium was detected, the result in this sample was qualified as estimated (J). Hexavalent chromium was not detected in the other sample, so the result was qualified as not detected at the estimated reporting limit (UJ).

QC data were reviewed for laboratory and instrument precision and accuracy from LCS/LCSD recoveries and relative percent differences (RPDs), MS/MSD sample recoveries and RPDs, and surrogate recoveries (organic analyses). All precision and accuracy QC elements were found to be within acceptable limits with the following exceptions:

- The MS/MSD RPD associated with the VOC analysis of project sample **GW-6-2/22-05** was greater than the control limit for bromoform, 1,2-dibromo-3-chloropropane, 1,1,2,2-tetrachloroethane, and 1,2,3-trichloropropane. None of these compounds were detected in the parent sample, so no qualifiers were necessary.
- The MS/MSD RPD associated with the VOC analysis of project sample **GW-12A287** was greater than the control limit for styrene and 1,2,4-trimethylbenzene. These compounds were not detected in the parent sample, so no qualifiers were necessary.

Field sampling precision was also evaluated by using the calculated RPD between results reported for the field duplicate pairs, which were project samples **DUP-01-2/24/2005** and **GW-7-2/24/2005**; and **DUP-03-2/25/2005** and **GW-15-2/25/2005**. In general, RPD results were found to be within the acceptable limits for precision for all methods. A few metals and hexavalent chromium did have RPDs that were greater than the control limit. These results were qualified as estimated in the primary field sample.

No target analytes were detected greater than the reporting limit (RL) in any method blank or trip blank samples. The equipment blank samples collected each day had target analytes detected above the RL:

- **EB-01-2/22/05**, associated with the VOCs analysis of four field samples had toluene detected above the RL (1.0 µg/L). Toluene was not detected in any of the associated field samples, so no qualifiers were necessary.

- **EB-02-2/23/05**, associated with the VOCs analysis of seven field samples had toluene detected above the RL (0.70 µg/L). Toluene was not detected in any of the associated field samples, so no qualifiers were necessary.
- **EB-02-2/23/05**, associated with the metals analysis of seven field samples had arsenic detected above the RL (0.0057 mg/L). Two of the samples had low concentrations of arsenic and were qualified as not-detected at the estimated RL.
- **EB-04-2/25/05-F**, associated with two field samples had chloroform detected above the RL (1.4 µg/L). Chloroform was not detected in any of the associated field samples, so no qualifiers were necessary.

Sample dilutions for all analysis were performed appropriately with respect to the analyte present in the highest concentration.

All data submitted for this project are of known and acceptable quality as qualified, based on laboratory-established control limits and the data quality objectives. These data are considered acceptable for their intended purposes.

TABLE G-1

GROUNDWATER SAMPLE COLLECTION SUMMARY
HONEYWELL NORTH HOLLYWOOD SITE QUARTERLY MONITORING
NORTH HOLLYWOOD, CALIFORNIA
(Page 1 of 3)

Investigation	Field Activity	Location	Field Identification	Sample Type	Collection Date	Collection Time	Lab ID	Title 22CAM Metals List (w/o Hg)	SW7470 Title 22 CAM Mercury	SW7199 Chromium VI	SW6020 Thallium	SW8270C MOD 1,4-Dioxane	E314.0 Perchlorate	E8260 Volatile Organics
1st Quarter, 2005	GW Monitoring	GW-06	GW-6-2/22/05	Primary	02/22/05	11:10	IOB1727-01	R	R		R			
1st Quarter, 2005	GW Monitoring	GW-02	GW-2-2/22/05	Primary	02/22/05	12:50	IOB1727-02	R	R		R			
1st Quarter, 2005	GW Monitoring	GW-09	GW-9-2/22/05	Primary	02/22/05	14:10	IOB1727-03			R				R
1st Quarter, 2005	GW Monitoring	--	EB-01-2/22/05	Field QC	02/22/05	10:00	IOB1727-04	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-08	GW-8-2/22/05	Primary	02/22/05	16:00	IOB1727-05			R				R
1st Quarter, 2005	GW Monitoring	--	TB-022205	Field QC	02/22/05	9:30	IOB1727-06							R
1st Quarter, 2005	GW Monitoring	GW-06	GW-6-2/22/05-F	Primary	02/22/05	11:10	IOB1727-07	R	R		R			
1st Quarter, 2005	GW Monitoring	GW-02	GW-2-2/22/05-F	Primary	02/22/05	12:50	IOB1727-08	R	R		R			
1st Quarter, 2005	GW Monitoring	GW-09	GW-9-2/22/05-F	Primary	02/22/05	14:10	IOB1727-09	R	R		R			
1st Quarter, 2005	GW Monitoring	GW-08	GW-8-2/22/05-F	Primary	02/22/05	16:00	IOB1727-10	R	R		R			
1st Quarter, 2005	GW Monitoring	GW-01	GW-1-2/23/05-F	Primary	02/23/05	8:45	IOB1817-01	R	R		R			
1st Quarter, 2005	GW Monitoring	GW-01	GW-1-2/23/05	Primary	02/23/05	8:45	IOB1817-02			R		R	R	R
1st Quarter, 2005	GW Monitoring	GW-03	GW-3-2/23/05-F	Primary	02/23/05	10:15	IOB1817-03	R	R		R			
1st Quarter, 2005	GW Monitoring	GW-03	GW-3-2/23/05	Primary	02/23/05	10:15	IOB1817-04			R		R	R	R
1st Quarter, 2005	GW Monitoring	GW-14A	GW-14A-PA-2/23/05-F	Primary	02/23/05	11:00	IOB1817-05	R	R		R			R
1st Quarter, 2005	GW Monitoring	GW-14A	GW-14A-PA-2/23/05	Primary	02/23/05	11:00	IOB1817-06			R				
1st Quarter, 2005	GW Monitoring	GW-14A	GW-14A-2/23/05-F	Primary	02/23/05	11:55	IOB1817-07	R	R		R			
1st Quarter, 2005	GW Monitoring	GW-14A	GW-14A-2/23/05	Primary	02/23/05	11:55	IOB1817-08			R				R
1st Quarter, 2005	GW Monitoring	GW-14A	GW-14A-PC-2/23/05-F	Primary	02/23/05	12:55	IOB1817-09	R	R		R			R
1st Quarter, 2005	GW Monitoring	GW-14A	GW-14A-PC-2/23/05	Primary	02/23/05	12:55	IOB1817-10			R				
1st Quarter, 2005	GW Monitoring	GW-14B	GW-14B-PA-2/23/05-F	Primary	02/23/05	15:10	IOB1817-11	R	R		R			R
1st Quarter, 2005	GW Monitoring	GW-14B	GW-14B-PA-2/23/05	Primary	02/23/05	15:10	IOB1817-12			R				R
1st Quarter, 2005	GW Monitoring	--	TB-0223005	Field QC	02/23/05	9:05	IOB1817-13							R
1st Quarter, 2005	GW Monitoring	GW-14A	GW-14A-PD-2/23/05	Primary	02/23/05	14:00	IOB1817-14	R	R	R	R		R	R

TABLE G-1

GROUNDWATER SAMPLE COLLECTION SUMMARY
HONEYWELL NORTH HOLLYWOOD SITE QUARTERLY MONITORING
NORTH HOLLYWOOD, CALIFORNIA
(Page 2 of 3)

Investigation	Field Activity	Location	Field Identification	Sample Type	Collection Date	Collection Time	Lab ID	Title 22CAM Metals List (w/o Hg)	SW7470 Title 22 CAM Mercury	SW7199 Chromium VI	SW6020 Thallium	SW8270C MOD 1,4-Dioxane	E314.0 Perchlorate	E8260 Volatile Organics
1st Quarter, 2005	GW Monitoring	--	EB-02-2/23/05	Field QC	02/23/05	15:40	IOB1818-01	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-14B	GW-14B-2/24/05-F	Primary	02/24/05	18:10	IOB1976-01	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-14B	GW-14B-2/24/05	Primary	02/24/05	18:10	IOB1976-02	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-14B	GW-14B-PC-2/24/05-F	Primary	02/24/05	19:05	IOB1976-03	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-14B	GW-14B-PC-2/24/05	Primary	02/24/05	19:05	IOB1976-04	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-14B	GW-14B-PD-2/24/05-F	Primary	02/24/05	20:50	IOB1976-05	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-14B	GW-14B-PD-2/24/05	Primary	02/24/05	20:50	IOB1976-06	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-07	GW-7-2/24/05-F	Primary	02/24/05	22:30	IOB1976-07	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-07	GW-7-2/24/05	Primary	02/24/05	22:30	IOB1976-08	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	--	DUP-01-2/24/05-F	DUP of GW-7-2/24/05-F	02/24/05	--	IOB1976-09	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	--	DUP-01-2/24/05	DUP of GW-7-2/24/05	02/24/05	--	IOB1976-10	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	--	TB-022405	Field QC	02/24/05	18:00	IOB1976-11	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-10	GW-10-2/24/05-F	Primary	02/25/05	00:10	IOB1976-12	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-10	GW-10-2/24/05	Primary	02/25/05	00:10	IOB1976-13	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-15	GW-15-2/25/05-F	Primary	02/25/05	01:30	IOB1976-14	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-15	GW-15-2/25/05	Primary	02/25/05	01:30	IOB1976-15	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	--	DUP-03-2/25/05-F	DUP of GW-15-2/25/05-F	02/25/05	--	IOB1976-16	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	--	DUP-03-2/25/05	DUP of GW-15-2/25/05	02/25/05	--	IOB1976-17	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	--	EB-03-2/25/05-F	Field QC	02/25/05	01:50	IOB1976-18	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-05	GW-5-2/25/05-F	Primary	02/25/05	03:10	IOB1976-19	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-05	GW-5-2/25/05	Primary	02/25/05	03:10	IOB1976-20	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-04	GW-4-2/25/05-F	Primary	02/25/05	05:10	IOB1976-21	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	GW-04	GW-4-2/25/05	Primary	02/25/05	05:10	IOB1976-22	R	R	R	R	R	R	R
1st Quarter, 2005	GW Monitoring	--	EB-04-2/25/05-F	Field QC	02/25/05	0540	IOB1976-23	R	R	R	R	R	R	R

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**GROUNDWATER SAMPLE COLLECTION SUMMARY
HONEYWELL NORTH HOLLYWOOD SITE QUARTERLY MONITORING
NORTH HOLLYWOOD, CALIFORNIA
(Page 3 of 3)**

DUP - duplicate sample
GW - groundwater
QC - quality control
R - Sample received and analyzed by the laboratory
VOC - volatile organic compounds

^aTitle 26 Metals: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Hg, Mo, Ni, Se, Ag, Tl, V, Zn

TABLE G-2

TABLE OF QUALIFIED DATA
HONEYWELL NORTH HOLLYWOOD SITE QUARTERLY MONITORING
NORTH HOLLYWOOD, CALIFORNIA

(Page 1 of 1)

Sample Identification	Laboratory Identification	Matrix	Method	Parameter	Result	Units	Flag	Bias	Comment
EB-01-2/22/-05	IOB1727-04	Water	SW7199	Hexavalent Chromium	< 0.0010	mg/L	UJ	NDT	Holding time exceeded
GW-1-2/23/05-F	IOB1817-01	Water	SW6010B	Arsenic	< 0.012	mg/L	UJ	NDT	Equipment blank contamination
GW-3-2/23/05-F	IOB1817-03	Water	SW6010B	Arsenic	< 0.0082	mg/L	UJ	NDT	Equipment blank contamination
GW-14A-PD-2/23/05	IOB1817-14	Water	SW7199	Hexavalent Chromium	3.4	mg/L	J	NDT	Holding time exceeded
GW-7-2/24/05-F	IOB1976-07	Water	SW6010B	Barium	0.26	mg/L	J	Low	Field duplicate RPD > CL
GW-7-2/24/05-F	IOB1976-07	Water	SW6010B	Zinc	0.023	mg/L	J	Low	Field duplicate RPD > CL
GW-7-2/24/05	IOB1976-08	Water	SW6010B	Hexavalent Chromium	0.091	mg/L	J	Low	Field duplicate RPD > CL
GW-15-2/25/05-F	IOB1976-14	Water	SW6010B	Barium	0.26	mg/L	J	High	Field duplicate RPD > CL

CL - control limit

J - Result is estimated.

mg/L - milligrams per liter

µg/L - micrograms per liter

NDT - not determined

RPD - relative percent difference

UJ - The result is not detected; however, the reporting limit value is qualified as estimated.

004898

PARSONS

100 West Walnut Street • Pasadena, California 91124 • (626) 440-2000 • Fax: (626) 440-2630 • www.parsons.com

January 30, 2004

Mr. Mohammad Zaidi
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

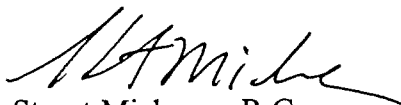
**Re: Soil Vapor Extraction Performance Report, Honeywell North Hollywood Site,
Fourth Quarter 2003 (RWQCB File No. 111.0180)**

Dear Mr. Zaidi:

Enclosed please find two copies of the above-referenced soil vapor extraction performance report for the Fourth Quarter 2003. As you review the report, call me at (626) 440-6102 if you have any questions.

Sincerely,

PARSONS



Stuart Michener, R.G.
Project Manager

Enclosure

cc: Benny DeHghi (Honeywell)
Ron Newquist (Kaiser Permanente)
Dixon Oriola (RWQCB, without attachment)
Project File



004899

**SOIL VAPOR EXTRACTION
PERFORMANCE REPORT
Fourth Quarter 2003**

**Honeywell North Hollywood
11668 Sherman Way
North Hollywood, California**

PREPARED FOR:

Honeywell

HONEYWELL
2525 West 190th Street
Torrance, California

PREPARED BY:

PARSONS
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Pasadena, California 91124
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JANUARY 30, 2004

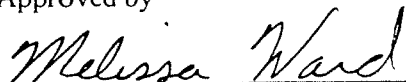
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SIGNATURE PAGE

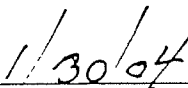
for

**SOIL VAPOR EXTRACTION PERFORMANCE
REPORT
Fourth Quarter 2003****Honeywell North Hollywood
11668 Sherman Way
North Hollywood, California****January 30, 2004**

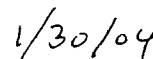
Approved by

Melissa Ward
Task Manager

Date

Stuart Michener, R.G.
Project Manager

Date

Terry Feng, P.E., R.G., C.H.G.
Senior Technical Reviewer

January 30, 2004

Date

DISTRIBUTION LIST

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Mr. Dixon Oriola (cover letter)
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Mr. Ron Newquist
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11668 Sherman Way
North Hollywood, California 91605

File

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ACRONYMS AND ABBREVIATIONS

SCSCAQMD	South Coast Air Quality Management District
ft bgs	feet below ground surface
ft ³ /min	cubic feet per minute
GAC	granular activated carbon
GC	gas chromatograph
O&M	operation and maintenance
PID	photoionization detector
ppmv	part per million by volume
PVC	polyvinyl chloride
RWQCB	Regional Water Quality Control Board
SVE	soil vapor extraction
TCE	trichloroethene
VOC	volatile organic compound
USEPA	U.S. Environmental Protection Agency

SECTION 1

INTRODUCTION AND BACKGROUND

The following report documents the soil vapor extraction (SVE) remediation of volatile organic compounds (VOCs) in soil at the former Honeywell North Hollywood facility for the Fourth Quarter 2003. The site, which is currently occupied by Kaiser Permanente, is located at 11668 Sherman Way, North Hollywood, California. In addition to discussing remedial performance data for the Fourth Quarter 2003, the report includes an overview of the operation, maintenance, and monitoring of the SVE system since its startup in early October 2001 (Parsons, 2002a, 2002b, 2002b, 2003a, 2003b, 2003c, and 2003d).

1.1 SITE DESCRIPTION

Figure 1 illustrates the site layout and the immediate vicinity. The site is located in the east part of the San Fernando Valley at an approximate elevation of 740 ft above mean sea level. The area undergoing SVE remediation lies within the parking lot of the former AlliedSignal/ Bendix Electrodynamics Division (subsequently Honeywell) facility, which was built in 1941 and was used for the manufacture of hydraulic and pneumatic valves. Manufacturing operations continued until the plant was shut down in February 1992. The plant was demolished the following year and the west part of the facility was sold to Kaiser Permanente in the early 1990s.

The SVE system discussed in this report is located in the south parking lot of the present-day Kaiser Permanente facility. The Kaiser property is bordered by Sherman Way to the north, by the Southern Pacific Railroad right-of-way to the south, and by Lankershim Boulevard to the west. A commercial storage facility owned and operated by the Public Storage Corporation lies immediately east of the Kaiser property.

1.2 SVE REMEDIATION BACKGROUND

The SVE remediation has targeted VOCs that are present in vadose zone soils beneath the southern portion of the Kaiser property. These VOCs include trichloroethene (TCE), whose measured vapor-phase concentrations have been as great as 26,000 µg/L. Prior to system construction and startup, the goals and planned actions for SVE remediation were presented in a Remedial Action Work Plan (Parsons, 1999) that was subsequently approved by the Regional Water Quality Control Board – Los Angeles Region (RWQCB). SVE remediation also satisfies the requirement for unsaturated zone VOC cleanup as prescribed by RWQCB Cleanup and Abatement Order No. R4-2003-0037 (RWQCB, 2003).

After evaluating several different cleanup methods/technologies, SVE was selected as the preferred remedial alternative. SVE is an in-situ treatment process that is proven to be effective in remediating soils impacted by VOCs, including TCE. Physical site constraints, such as the depth of VOC-impacted soils and the ongoing commercial activities at the Kaiser property, were also considered when choosing the most appropriate cleanup technology.

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The SVE system includes a nested SVE well (EW-1) with four separate extraction zones that are screened in the following intervals: 50 to 70 ft bgs, 90 to 110 ft bgs, 140 to 160 ft bgs, and 180 to 200 ft bgs. For reference, the vadose zone beneath the site is typified by coarse-grained clastic deposits, including sand and gravelly sand, that extend to depths of approximately 275 feet bgs (based on recent water table measurements). The SVE system uses a trailer-mounted blower assembly to extract vapors from the screened intervals through underground piping that leads to an aboveground manifold. The extracted vapors are then routed through three, 1,000-lb granular activated carbon (GAC) vessels arranged in series. The GAC vessels are used to treat VOCs in the extracted vapors prior to discharge to the atmosphere. To prevent tampering and ensure the safety of site workers, the treatment equipment is located in a secured, fenced compound. Figure 3 presents a block flow diagram for the vapor extraction system.

SECTION 2

SYSTEM OPERATION, MAINTENANCE, AND MONITORING

SVE system operation commenced on October 11, 2001. The system was operated in an essentially continuous manner until early October 2002, when it was temporarily shut down while a new, fixed-location, permit was processed by the SCAQMD. System operation resumed on January 22, 2003 once the permit was finalized. A third 1,000-lb carbon vessel was added to the treatment train at the time to expand the system treatment capacity. Operation and maintenance activities for the Fourth Quarter 2003 are discussed in the following subsections.

2.1 PROCESS MONITORING

Since its startup, the SVE system has operated with approximately 75% uptime, excluding the temporary shutdown discussed above. During the Fourth Quarter, occasional interruptions in operation were due to carbon changeouts and what appeared to be power outages. In addition, the knockout pot sight glass failed during a routine site inspection, and as a consequence, the system was shut down until a replacement part was procured and installed. During the Fourth Quarter 2003, the primary carbon vessel was replenished with fresh carbon three times, and the secondary vessel was changed out twice (Table 1). During the Fourth Quarter 2003, the primary carbon vessel was replenished with fresh carbon three times, and the secondary vessel was changed out twice (Table 1). In each instance, the changeout was necessary to maintain compliance with the treated effluent limits prescribed in the SCAQMD permit, which restrict VOC concentrations at the outlet of the secondary adsorber to no more than 50 ppmv (as hexane). During a typical changeout, the carbon in the primary vessel was replenished, after which, the vessel sequence was reconfigured such that the freshly-filled vessel (i.e. the old primary vessel) was connected as the tertiary vessel, the former secondary vessel was set up as the primary vessel, and the former tertiary vessel became the secondary vessel. In this way, the freshest carbon provided final polishing prior to discharge to the atmosphere. Routine maintenance was performed in accordance with the system manufacturer's recommendations.

2.2 COMPLIANCE MONITORING

During the Fourth Quarter 2003, the SVE system was operated under the following SCAQMD permit requirements:

- Flow rate through the oxidizer will not exceed 200 ft³/min.
- The first carbon vessel will be changed out when VOC concentrations exceed 50 parts per million by volume (ppmv as hexane) at the effluent of the second vessel.
- Grab samples will be collected at the inlet and outlet of the system daily during the first week of operation and once per month thereafter.

During the new permit start-up period in January and February 2003, grab inlet and outlet samples were collected and analyzed by an off-site laboratory using USEPA Method TO-14, which detects VOCs by gas chromatography/ mass spectrometry (GC/MS). After these initial laboratory analyses, influent and effluent gases have been quantified in the field using a PID calibrated to hexane as prescribed by the SCAQMD fixed-location permit.

The SVE system was inspected periodically to monitor compliance with the above-referenced permit requirements and optimize system performance. During routine site visits, the extraction flow rate was checked and adjusted. Influent and effluent concentrations also were measured with a calibrated PID and/or sampled for laboratory analysis to confirm compliance with the permit requirements. Before each use, the PID is calibrated with hexane. During the Fourth Quarter 2003, side-by-side measurements were taken with the PID calibrated to both 50 ppm hexane and 100 ppm hexane, to evaluate the potential effect of calibration gas concentration on these field measurements. The readings using both calibration gases were consistent. Earlier this year, for quality control purposes, side-by-side influent and effluent concentration measurements were taken using two independently calibrated PIDs. Both instruments showed consistent readings.

During routine inspections, the hours of operation, temperature, and extraction vacuum were documented and water was drained from the knockout pot as necessary. Table 1 presents an operational summary for the system, including relevant activities for the Fourth Quarter 2003.

2.3 PERFORMANCE MONITORING

Based on the performance monitoring data gathered during the Fourth Quarter 2003, the cumulative amount of VOCs removed from soil and the VOC mass removal rate was re-calculated. The mass removal rate was estimated based on the monitoring data summarized in Table 2 and the calculations described in Appendix A. As of the end of the Fourth Quarter (i.e., December 31, 2003), after nearly 12,800 hours of operation, the SVE system had removed approximately 16,100 pounds of VOCs from the subsurface (Figure 5). Remediation during the Fourth Quarter involved approximately 1,300 hours of operation and accounted for roughly 900 lbs. of extracted VOCs. As depicted in Figure 5, the mass removal rate decreased somewhat during the Fourth Quarter 2003, possibly reflecting a continuation of a trend that was first noted during the Second Quarter 2003. Further monitoring will be necessary to determine whether this trend is signaling the onset of asymptotic conditions.

Longer-term trends in influent concentration are shown on Figure 4 and discussed below. Shortly after system startup, the high initial concentrations declined as VOCs were removed and system adjustments were made. Between late November 2001 and late February 2002, the recirculation and dilution air valves were readjusted to maintain an influent concentration between 1,000 and 2,000 ppmv and to increase flow. Beginning March 2002, the system was adjusted to further enhance vacuum and maximize the VOC removal rate. In response, the influent concentrations increased to greater than 10,000 ppmv before they began to decline in June 2002. This overall pattern of declining concentrations has continued through CY 2003. During the Fourth Quarter 2003, typical concentrations ranged from 1,000 to 2,000 ppmv. In recent months, the rate of decrease in influent VOC concentrations has slowed, possibly signaling the onset of diminishing return or asymptotic conditions for this operational parameter.

Soil gas sampling events, the most recent of which took place in June 2003, have been performed periodically to assess changes in vapor-phase VOC concentrations in subsurface soils (Table 3). As shown on Figure 6, the concentration of TCE in the various soil gas monitoring points and the extraction well intervals has decreased significantly since system operation began. In several instances, the concentration of TCE has declined more than two orders of magnitude. Following the permit-related shutdown in late 2002 and early 2003, only modest rebound effects were observed in most monitoring points. In general, the post-rebound concentrations of TCE remained one to two orders of magnitude lower than pre-remediation concentrations. Soil gas sampling at the end of the Second Quarter 2003, showed that VOC concentrations continued to decrease in most monitoring points during the first two quarters of 2003.

SECTION 3

CONCLUSIONS

With the exception of temporary shutdowns for carbon changeouts, occasional power outages, and issuance of a new SCAQMD permit, the SVE system has been in essentially continuous operation since its startup in October 2001. The system was temporarily shut down in October 2002, until a new fixed-location permit was finalized by the SCAQMD. Once the new permit was issued, in late January 2003, operation of the system resumed. Since that time, the system has been monitored regularly to optimize its performance and ensure SCAQMD permit compliance. Conclusions for the Fourth Quarter 2003 are summarized below:

- The results to date indicate that the SVE system is successfully removing VOCs and steadily reducing their concentrations in soil.
- As of December 31, 2003, approximately 16,100 pounds of VOCs have been removed by the SVE system, 900 pounds of which were extracted and treated during the Fourth Quarter 2003.
- Results of the soil gas surveys performed during the period from July 2001 through June 2003 confirmed that the concentration of TCE in soil gas has decreased significantly since system startup, in many cases by one or two orders of magnitude.
- During the Fourth Quarter 2003, the rate of decrease in the influent VOC concentration diminished somewhat, as did the VOC mass removal rate. Typical influent concentrations were in the range of 1,000 to 2,000 ppmv and the mass removal rate was approximately 300 pounds per month. The patterns could signal the approach of asymptotic conditions.

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SECTION 4

REFERENCES

- Parsons Engineering Science, Inc. (Parsons), 1999. *Remedial Action Work Plan, AlliedSignal North Hollywood Site, 11600 Sherman Way, North Hollywood, California* (File 111.0180), July 14, 1999.
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Tables

Table 1
Operational Summary
Honeywell North Hollywood

Date	Hours of Operation	Milestone
10/11/01	0	System startup (extracting from all intervals)
10/20/01	124	Carbon changeout of first vessel
10/20/01	124	Began extracting from only 90-110 ft bgs
10/25/01	196	Carbon changeout of first vessel
11/27/01	791	Carbon changeout of first vessel
11/28/01	815	Began extracting from 90-110 and 140-160 ft bgs
12/03/01	958	Began extracting from 90-110, 140-160, and 180-200 ft bgs
12/19/01	1,314	December 2001 soil gas monitoring event
01/16/02	1,776	Carbon changeout of first vessel
02/23/02	2,306	Carbon changeout of first vessel
03/05/02	2,550	Replaced second vessel with a new vessel
03/11/02	2,594	Carbon changeout of first vessel
03/12/02	3,594	Closed dilution air valve further to increase vacuum
03/25/02	2,758	March 2002 soil gas monitoring event
03/28/02	2,764	Carbon changeout of both vessels
04/03/02	2,862	Carbon changeout of first vessel
04/12/02	3,023	Carbon changeout of both vessels
04/22/02	3,142	Carbon changeout of first vessel
05/01/02	3,327	Carbon changeout of both vessels
05/10/02	3,496	Carbon changeout of both vessels
05/17/02	3,639	Carbon changeout of first vessel
05/28/02	3,760	Carbon changeout of both vessels
06/07/02	3,926	Carbon changeout of both vessels
06/07/02	3,927	Dilution air valve fully closed to increase vacuum
06/14/02	4,077	Carbon changeout of both vessels
06/18/02	4,172	June 2002 soil gas monitoring event
06/21/02	4,179	Carbon changeout of first vessel
06/27/02	4,327	Carbon changeout of both vessels
07/03/02	4,470	Carbon changeout of first vessel
07/10/02	4,632	Carbon changeout of first vessel
07/18/02	4,826	Carbon changeout of both vessels
07/30/02	5,069	Carbon changeout of both vessels
08/06/02	5,255	Carbon changeout of first vessel
08/15/02	5,425	Carbon changeout of both vessels
08/23/02	5,591	Carbon changeout of first vessel
08/30/02	5,759	Carbon changeout of first vessel
09/06/02	5,927	Carbon changeout of first vessel
09/13/02	6,097	Carbon changeout of both vessels
09/20/02	6,261	Carbon changeout of first vessel
09/27/02	6,429	Carbon changeout of first vessel
10/04/02	6,594	Carbon changeout of first vessel
10/10/02	6,740	October 2002 soil gas monitoring event
10/10/02	6,744	Shutoff system for preliminary rebound testing
12/09/02	6,744	December 2002 soil gas monitoring event

Table 1
Operational Summary
Honeywell North Hollywood

Date	Hours of Operation	Milestone
01/22/03	6,744	System re-started
02/05/03	6,970	Carbon changeout of first vessel (reconfigured to be last)
02/18/03	7,108	Carbon changeout of first vessel (reconfigured to be last)
02/24/03	7,182	Carbon changeout of first and second vessel (reconfigured to be last)
03/04/03	7,367	Carbon changeout of first vessel (reconfigured to be last)
03/17/03	7,539	Carbon changeout of first vessel (reconfigured to be last)
03/24/03	7,708	March 2003 soil gas monitoring event
03/25/03	7,732	Carbon changeout of first vessel (reconfigured to be last)
03/26/03	7,734	Carbon changeout of first vessel (reconfigured to be last)
04/14/03	7,916	Carbon changeout of first vessel (reconfigured to be last)
04/23/03	8,112	Carbon changeout of first vessel (reconfigured to be last)
05/01/03	8,277	Carbon changeout of first and second vessel (reconfigured to be last)
05/09/03	8,421	Carbon changeout of first vessel (reconfigured to be last)
05/16/03	8,583	Carbon changeout of first vessel (reconfigured to be last)
05/23/03	8,742	Carbon changeout of first vessel (reconfigured to be last)
05/30/03	8,910	Carbon changeout of first vessel (reconfigured to be last)
06/06/03	9,074	Carbon changeout of first and second vessel (reconfigured to be last)
06/16/03	9,271	Carbon changeout of first vessel (reconfigured to be last)
06/25/03	9,486	Carbon changeout of first and second vessel (reconfigured to be last)
06/26/03	9,500	June 2003 soil gas monitoring event
07/03/03	9,673	Carbon changeout of first vessel (reconfigured to be last)
07/10/03	9,844	Carbon changeout of first vessel (reconfigured to be last)
07/21/03	10,070	Carbon changeout of first and second vessel (reconfigured to be last)
08/01/03	10,329	Carbon changeout of first vessel (reconfigured to be last)
08/12/03	10,592	Carbon changeout of first vessel (reconfigured to be last)
08/29/03	11,002	Carbon changeout of first vessel (reconfigured to be last)
10/03/03	11,477	Carbon changeout of first and second vessel (reconfigured to be last)
11/07/03	12,224	Carbon changeout of first and second vessel (reconfigured to be last)
11/21/03	12,558	Carbon changeout of first vessel (reconfigured to be last)

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H2O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
10/11/2001 9:43	0.0	178	84		4,700	4.7		1.6	2.11	0	0
10/12/2001 9:07	23.4	190	80		4,252	3.8		3.2	2.04	49	49
10/16/2001 13:34	123.9	186	95	2.5	4,782	1,620		3.1	2.24	215	264
10/20/2001 10:15	124.4	122	69	3.2	1,870	4.1		1.0	0.58	0.7	264
10/21/2001 15:05	153.4	120	83	3	1,871	1.2		0.9	0.57	17	281
10/22/2001 17:51	180.0	103	81	2.8	1,800	44.9		1.1	0.47	14	295
10/23/2001 9:30	195.7	109	68	2.85	1,450	83.0		1.0	0.40	6.8	301
10/25/2001 16:20	195.7	109	78	2.5	1,320	-		1.0	0.36	0.0	301
10/29/2001 8:09	284.4	108	66	2.85	1,160	0.1		0.1	0.32	30	331
10/31/2001 17:15	341.5	103	73		450	0.5		0.4	0.12	12	344
11/5/2001 16:55	461.1	103	76	1.5	253	9.6		1.8	0.07	11	355
11/13/2001 18:00	599.3	107	65	1.5	110	39.1		0.1	0.03	6.6	361
11/19/2001 12:15	791.1	115	78	2.5	101	78.4		0.2	0.03	5.7	367
11/28/2001 13:20	815.1	183	63	1	263	1.6		0.7	0.12	1.8	369
11/30/2001 10:30	860.2	179	67	3	106	-		-	0.05	3.8	373
12/3/2001 11:45	957.5	176	68	6	2,760	1.6		1.2	1.22	62	435
12/12/2001 13:30	1,151.4	170	68	3	1,020	1.5		1.0	0.44	161	596
12/19/2001 8:22	1,313.7	184	51	11	178	0.0		0.0	0.08	42	638
12/20/2001 14:55	1,344.2	188	70	4.5	3,052	9.7		1.2	1.45	23	661
1/7/2002 14:40	1,776.4	195	71	5.5	150	150		0.1	0.07	329	990
1/18/2002 13:10	1,826.4	200	70	5	285	0.3		0.0	0.14	5.4	995
1/18/2002 14:05	1,827.3	199	70	5.5	1,857	0.3		0.0	0.93	0.5	996
1/24/2002 12:30	1,970.2	197	71	8	85.5	0.7		0.6	0.04	70	1,065
1/24/2002 15:45	1,973.0	188	70	7	1,702	0.8		0.5	0.81	1.2	1,066
1/31/2002 11:50	2,138.0	183	65	5.7	405	0.5		0.8	0.19	82	1,148
1/31/2002 15:30	2,141.7	150	66	2.4	1,667	12.1		8.9	0.63	1.5	1,150
2/7/2002 12:35	2,305.9	144	80	3.5	166	502		2.0	0.06	57	1,207
2/25/2002 14:43	2,357.6	139	85	6.25	234	8.9		2.5	0.08	3.7	1,210
2/25/2002 17:05	2,360.0	170	85	13.5	1,685	40.2		9.4	0.72	1.0	1,211
2/27/2002 12:25	2,403.7	177	92	8	2,678	1.6		1.4	1.20	42	1,253
2/27/2002 14:30	2,405.7	190	92	10	2,724	7.4		17.6	1.30	2.5	1,256
3/7/2002 12:15	2,594.1	184	82	8	1,849	1,513		6.0	0.86	204	1,459
3/12/2002 15:45	2,594.7	185	77	8	1,530	3.4		3.4	0.71	0.5	1,460
3/12/2002 17:45	2,596.4	175	78	13	4,800	-		-	2.12	2.4	1,462
3/19/2002 13:15	2,618.8	182	79	13.2	2,400	3.7		4.2	1.10	36	1,498
3/19/2002 14:05	2,619.5	167	82	18.5	6,500	8.5		9.2	2.74	1.3	1,500
3/25/2002 14:20	2,763.9	170	76	18	>10,000	>10,000		4,100	4.29	507	2,007
3/28/2002 14:56	2,764.1	192	63	17.5	>10,000	-		-	4.84	0.9	2,008
3/28/2002 15:33	2,764.7	192	63		8,034	14.2		13.8	3.89	2.6	2,010
3/28/2002 15:49	2,764.9	184	76	12	7,116	-		-	3.30	0.7	2,011
4/1/2002 16:00	2,861.4	191	82	11.5	5,876	3,785		20.7	2.83	296	2,307
4/3/2002 15:16	2,861.8	174	72	13	3,895	4.2		10.1	1.71	0.9	2,308
4/10/2002 9:06	3,022.7	174	74	13.5	5,902	4,737		546	2.59	346	2,653
4/12/2002 18:05	3,023.1	176	71	12.5	6,597	4.5		2.5	2.93	1.1	2,655
4/17/2002 17:11	3,142.2	170	78	12.25	6,123	3,173		5.2	2.62	331	2,985
4/22/2002 16:05	3,143.4	165	91	11.5	8,567	5.4		6.0	3.56	3.7	2,989
4/30/2002 7:05	3,326.4	169	68	12.5	6,468	3,842		433	2.76	578	3,567

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H ₂ O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
5/1/2002 9:43	3,327.2	159	76	11.5	4,747	-		-	1.90	1.9	3,569
5/1/2002 9:52	3,327.3	182	81	16	6,979	3.7		4.0	3.20	0.3	3,569
5/8/2002 10:18	3,495.8	178	81	15.5	>2,000 ^b	1,900		550	-	-	-
5/10/2002 10:51	3,496.2	163	81	15	4,543	-		-	1.87	428	3,997
5/10/2002 11:16	3,496.6	168	92	21.75	8,618	6.2		3.5	3.65	1.1	3,999
5/10/2002 14:11	3,498.7	184	99	22.5	7,684	6.2		8.2	3.56	7.6	4,006
5/16/2002 10:15	3,638.5	177	81	24	>10,000	>10,000		18.2	4.46	561	4,567
5/17/2002 15:00	3,639.0	176	91	22	9,956	3.3		12.2	4.42	2.2	4,569
5/22/2002 16:17	3,760.3	179	77	24	8,341	4,594		1,424	3.76	496	5,066
5/28/2002 15:50	3,760.7	180	89	23	5,772	1.5		1.3	2.62	1.3	5,067
6/4/2002 12:41	3,925.5	170	95	24.5	4,731	6,808		38.4	2.03	383	5,450
6/7/2002 12:38	3,925.9	180	87	24	4,768	-		-	2.16	0.8	5,451
6/7/2002 13:40	3,927.0	181	100	27	6,938	5.3		4.4	3.17	2.9	5,454
6/13/2002 7:35	4,076.8	184	78	28	>10,000	4,322		151	4.64	585	6,038
6/14/2002 10:24	4,077.5	183	96	28	5,760	2.4		2.0	2.66	2.6	6,041
6/18/2002 16:15	4,179.3	165	91	26	9,241	2,600		39.1	3.84	331	6,372
6/21/2002 9:25	4,179.9	178	73	27	5,361	0.7		0.0	2.41	1.9	6,374
6/28/2002 11:33	4,348.4	164	97	26	4,783	5.0		4.6	1.98	369	6,743
7/3/2002 13:57	4,470.8	162	95	25	4,209	2,053		6.6	1.72	226	6,969
7/10/2002 8:15	4,631.5	166	87	26	3,620	2,340		11.5	1.52	260	7,229
7/10/2002 9:42	4,632.2	193	90	29	3,806	9.1		8.9	1.85	1.2	7,230
7/29/2002 11:04	5,068.8	190	-	-	3,465	3,117		1292	1.66	767	7,997
7/30/2002 12:45	5,089.0	189	93	28	3,090	4.2		4.1	1.47	32	8,029
8/6/2002 11:33	5,255.6	169	97	27	3,039	331		14.1	1.29	231	8,259
8/6/2002 12:26	5,256.1	170	101	25	2,949	7.2		8.2	1.26	0.6	8,260
8/14/2002 13:06	5,424.7	169	97	26	3,168	1,895		51	1.35	220	8,480
8/15/2002 10:00	5,424.9	175	82	28	2,660	0.2		0.3	1.17	0.3	8,480
8/23/2002 8:00	5,591.2	176	79	28	3,017	1,277		5.4	1.34	209	8,689
8/23/2002 9:22	5,591.9	174	82	27	3,313	5.4		4.7	1.45	1.0	8,690
8/30/2002 8:11	5,758.7	172	79	28	3,339	2,789		18.7	1.45	242	8,932
8/30/2002 9:03	5,758.9	171	71	27	3,062	1.5		16	1.32	0.3	8,932
9/6/2002 8:11	5,926.7	173	80	27	2,088	1,501		27.5	0.91	187	9,120
9/6/2002 9:15	5,926.8	171	87	26	2,241	0.5		20.1	0.97	0.1	9,120
9/13/2002 11:06	6,096.6	167	95	-	2,272	1,378		116	0.96	163	9,283
9/13/2002 13:35	6,097.1	186	98	28	2,272	-		-	1.07	0.5	9,284
9/20/2002 8:39	6,260.6	162	-	28	2,130	1,576		15	0.87	158	9,442
9/20/2002 10:00	6,260.8	158	89	26	2,028	1.5		0.9	0.81	0.2	9,442
9/27/2002 10:40	6,428.6	150	81	27	1,587	1,360		5.6	0.60	118	9,560
9/27/2002 11:55	6,429.9	178	82	28	1,914	4.0		2.0	0.86	0.9	9,561
10/4/2002 8:50	6,594.7	172	-	28	2,017	1,276		14.3	0.87	143	9,704
10/10/2002 14:00	6,744.0	180	87	30	204	108		64.9	0.09	72	9,776
1/22/2003 10:45	6,813.5	182	72	28.5	2,120	1,007	7.5	1.7	0.97	37	9,813
1/23/2003 10:10	6,836.3	178	77	27	2,326	468	17.2	4.7	1.04	23	9,836
1/24/2003 11:01	6,861.2	181	85	27	2,340	625	27	17.2	1.07	26	9,862

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H ₂ O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
1/24/2003 15:47	6,866.0	189	84	28	2,940	650	9.9	13.2	1.40	5.9	9,868
1/27/2003 10:50	6,866.6	192	75	27	2,850	584	5.5	13.6	1.38	0.8	9,869
1/28/2003 12:30	6,892.5	186	87	27	1,975	540	3.5	5.9	0.93	30	9,899
1/29/2003 11:35	6,915.3	185	84	28	1,948	890	3.2	6.8	0.91	21	9,920
1/30/2003 18:55	6,934.7	192	66	28	2,448	1,260	16.5	10.8	1.19	20	9,940
1/31/2003 18:00	6,970.0	190	83	28	3,280	1,221	65.2	8.5	1.57	49	9,989
2/5/2003 12:10	6,970.4	187	72	28	2,350	21.8	9.3	4.2	1.11	0.5	9,989
2/6/2003 13:20	6,995.6	189	87	28	2,597	104	29.2	23.8	1.24	30	10,019
2/7/2003 16:30	7,022.8	188	78	29	2,280	358	8.6	14.6	1.08	32	10,050
2/10/2003 5:45	7,023.3	188	50	28	2,225	232	7.9	0.0	1.05	0.5	10,051
2/11/2003 16:00	7,057.7	185	74	28	2,320	310	7.6	2.2	1.08	37	10,088
2/13/2003 17:45	7,107.3	189	74	27	2,353	981	95.1	30.2	1.12	55	10,142
2/21/2003 16:25	7,181.3	185	85	28	2,750	783	164	13.6	1.28	89	10,231
2/24/2003 13:45	7,182.5	193	65	28	2,366	31.6	16.5	10.2	1.15	1.5	10,233
2/27/2003 11:30	7,251.8	190	75	30	2,742	41.5	30.5	15.1	1.31	85	10,318
3/3/2003 17:30	7,354.0	185	73	28	1,755	752	19.5	12.3	0.82	109	10,427
3/11/2003 13:40	7,539.0	189	88	29	2,978	1,518	169	26.4	1.42	207	10,634
3/17/2003 11:50	7,539.9	187	73	22	3,572	46.9	7.5	3.5	1.68	1.4	10,636
3/25/2003 12:27	7,732.5	196	100	20	>10,000	4,500	500	105	4.94	638	11,274
3/26/2003 13:45	7,734.3	187	92	22	1,750	47.0	8.1	3.4	0.83	5.2	11,279
4/1/2003 12:45	7,749.1	188	85		2,582	29.8	10.1	5.7	1.22	15	11,294
4/8/2003 12:15	7,915.5	187	99	28	3,150	1322	51.8	6.6	1.49	225	11,519
4/15/2003 12:00	7,951.6	185		29	2,219	110	34.1	7.5	1.04	45	11,565
4/24/2003 13:45	8,112.0	208		26.6	1,760	266	41.9	3.7	0.92	157	11,722
5/1/2003 11:45	8,277.9	200	83	22.5	1,580	935	308	110	0.80	143	11,865
5/7/2003 12:00	8,420.8	185		27	1,434	272	65.2	23.3	0.67	105	11,969
5/9/2003 13:30	8,421.4	190	80	29	1,658	62.6	28.5	3.2	0.79	0.4	11,970
5/16/2003 7:40	8,583.7	189	77	21.5	3,500	1180	230	100	1.67	200	12,169
5/23/2003 10:00	8,742.5	195	90	27	1,950	46.5	10.7	3.5	0.96	209	12,378
5/30/2003 12:45	8,910.8	186	90	27	1,740	0.5	39.9	0	0.82	149	12,527
6/6/2003 8:05	9,074.2	196	77	22.5	1,829	535	220	105	0.90	141	12,668
6/16/2003 14:40	9,271.3	173	109	20	2,950	45.1	0	0	1.29	216	12,884
6/25/2003 14:00	9,485.9	166	106	20	1,583	13.6	9.4	7.7	0.66	209	13,093
7/3/2003 9:40	9,673.4	167	97	19.5	2,119	113	3.4	2.5	0.89	146	13,239
7/10/2003 13:15	9,843.9	175	105	19	2,858	246	38.7	3.8	1.26	184	13,422
7/21/2003 10:30	10,068.9	175	101	21	3,028	129	2.3	17.8	1.34	292	13,714
7/21/2003 13:00	10,069.9	177	104	20	3,258	11.7	8.6	7.3	1.45	1.4	13,716
8/1/2003 9:15	10,329.4	172	91	20.5	4,263	34.8	0	15.4	1.85	429	14,144
8/12/2003 8:00	10,592.2	153	88	21	2,517	782	8.6	9.2	0.97	371	14,515
8/12/2003 9:10	10,592.6	170	90	25	2,330	6.9	6	5.4	1.00	0.4	14,515
8/19/2003 13:55	10,765.2	165	104	21	1,431	318	5.9	5.3	0.60	138	14,653
8/29/2003 12:05	11,002.6	153	99	20	1,493	1.7	8.2	0	0.58	139	14,792
9/29/2003 16:00	11,477.2	194	85	22.5	2,454	2211	315	175	1.20	422	15,213
10/3/2003 15:25	11,477.5	170	78	22	1,296	47.6	1.4	0.7	0.56	0.3	15,214
10/6/2003 9:30	11,544.0	168	81	21	1,309	577	22.3	18.1	0.55	36.9	15,250

Table 2
Summary of System Monitoring Data
Honeywell North Hollywood

Date/Time	Hours of Operation	Flow (scfm)	Temp (°F)	Vacuum (in. H ₂ O)	Influent (ppmv) ^a	Effluent of 1st Vessel (midpoint before 01/03) ^a	Effluent of 2nd Vessel (ppmv) ^a	Effluent (ppmv) ^a	Extraction Rate (lb/hr)	Current lbs VOCs removed	Cumulative lbs VOCs removed
10/17/2003 15:40	11,813.8	171	85	21	932	287	32.8	8.1	0.40	129.0	15,379
10/24/2003 10:45	11,976.9	161	79	22	986	357	24.5	12.8	0.40	65.4	15,445
11/3/2003 17:15	12,224.3	191	63	23	1,863	690	435	244	0.90	160.5	15,605
11/7/2003 14:45	12,224.7	171	73	23	983	39.5	1.0	0.1	0.42	0.3	15,606
11/13/2003 13:40	12,367.6	175	84	22.5	3,626	1222	41.3	3	1.60	144.6	15,750
11/21/2003 11:50	12,558.8	173	77	23	1,364	312	8.4	0	0.59	209.8	15,960
12/8/2003 14:30	12,573.7	174	7.1	24	1,062	170	7.3	3.3	0.47	7.9	15,968
12/19/2003 11:15	12,672.8	174 ^c	67	24.5	927	245	11.5	3.5	0.41	43.2	16,011
1/6/2004 13:00	12,954.3	174 ^c	55	21	1,988	1201	69.1	60.3	0.87	180.0	16,191

- = Not Measured

^a = As measured with a PID calibrated to Hexane

^b = A PID with a lower range was used. Influent concentrations may be underrepresented. This data was not used to calculate

^c = Flow readings could not be taken due to a malfunction with the flow meter the flow is assumed to remain constant.

Table 3
Soil Gas Analytical Summary
Honeywell North Hollywood

Well Interval	TCE (µg/L)								PCE (µg/L)							
	7/13/01	12/19/01	3/15/02	6/18/02	10/10/02	12/9/02	3/24/03	6/26/03	7/13/01	12/19/01	3/15/02	6/18/02	10/10/02	12/9/02	3/24/03	6/26/03
GW-7-50	96	42	25	14	2.3	13	1.7	8.7	2.7	2.0	<1	1.1	<1	1.4	<1	<1
GW-7-150	500	250	60	26	13	14	5.8	11	<5	15	<2.5	16	15	22	5.3	8.2
GW-10-50	260	28	28	17	<1	3.7	<1	16	2.2	1.6	<1	1.1	<1	<1	<1	2.0
GW-10-150	3,100	1,300	590	52	8	16	6.9	NS	<80	<50	<25	<1	<1	<1	<1	NS
EW-1-70	130	52	31	22	4.7	27	9.1	18	11	7.4	7.2	6.6	1.3	12	3.3	7.1
EW-1-110	6,600	3,700	2,700	130	180	270	120	190	<200	<100	<50	3.6	3.3	7.0	1.4	3.7
EW-1-160	10,000	5,300	2,700	840	160	170	140	200	<200	<100	<50	<20	<10	3.1	21	17
EW-1-200	2,000	2,800	1,300	400	140	109	39	250	<200	<50	<50	58	27	3.0	6.6	43
MLG-1-50	11	4.4	75	3.7	51	6.5	10	4.5	<1	<1	<1	<1	2	<1	<1	<1
MLG-1-100	8,600	5,900	5,000	370	36	270	88	39	<200	<100	<50	4.9	<2.5	8.8	<2.5	2.9
MLG-1-150	10,000	7,300	6,800	850	77	590	53	41	<200	<100	<100	<40	<2.5	24	<10	11
MLG-1-200	6,400	2,800	2,400	2,000	380	670	710	750	<80	<100	<50	250	<50	88	10	15

Note: All samples were analyzed by a mobile laboratory for 25 target compounds. TCE and PCE were the most frequently detected and at the highest concentration.

Jul-01 sample data reflects pre-remediation baseline.

Dec-02 sample data reflects initial rebound testing (system turned off 10/10/02)

Data are plotted graphically on Figure 6

Figures

Appendix A VOC Mass Removal Calculations

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APPENDIX A

VOC MASS REMOVAL CALCULATIONS

$$\frac{\text{ppmv VOCs in influent}^a}{10^6} \times \frac{\text{extraction flow rate (cfm)}}{\text{cfm}} \times \frac{60 \text{ minutes}}{\text{hour}} \times \frac{28.3 \text{ L}}{\text{ft}^3} \times \frac{1 \text{ mol}}{24.5 \text{ L}} \times \frac{0.1314 \text{ kg}}{\text{mol of VOCs}^b} \times \frac{2.2046 \text{ lb}}{1 \text{ kg}} \times \frac{\text{correction factor hexane to TCE}}{(0.126)}$$

= pounds of VOCs extracted per hour (extraction rate)

$$\frac{\text{Extraction rate @ time T1} + \text{extraction rate @ time T2}}{2} \times (T2 - T1) = \text{VOCs extracted between T1 and T2}$$

Thus, find the amount of VOCs extracted between each consecutive site visit and the sum to date provides the cumulative total VOCs extracted.

^aAs measured with a PID calibrated to hexane.

^bMolecular weight of TCE (131.4 g/mol).